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Proposed New York City Transit Department of Buses Storage and Maintenance Facility

4700 Arthur Kill Road Staten Island, New York

Phase IB Archaeological Survey

B 7487 L100
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400

Prepared for:

New York City Transit
2 Broadway
New York, New York

MTA New York City Transit

96 DME 001R

Prepared by:

The Louis Berger Group, Inc.
120 Halsted Street
East Orange, New Jersey

October 2001

904

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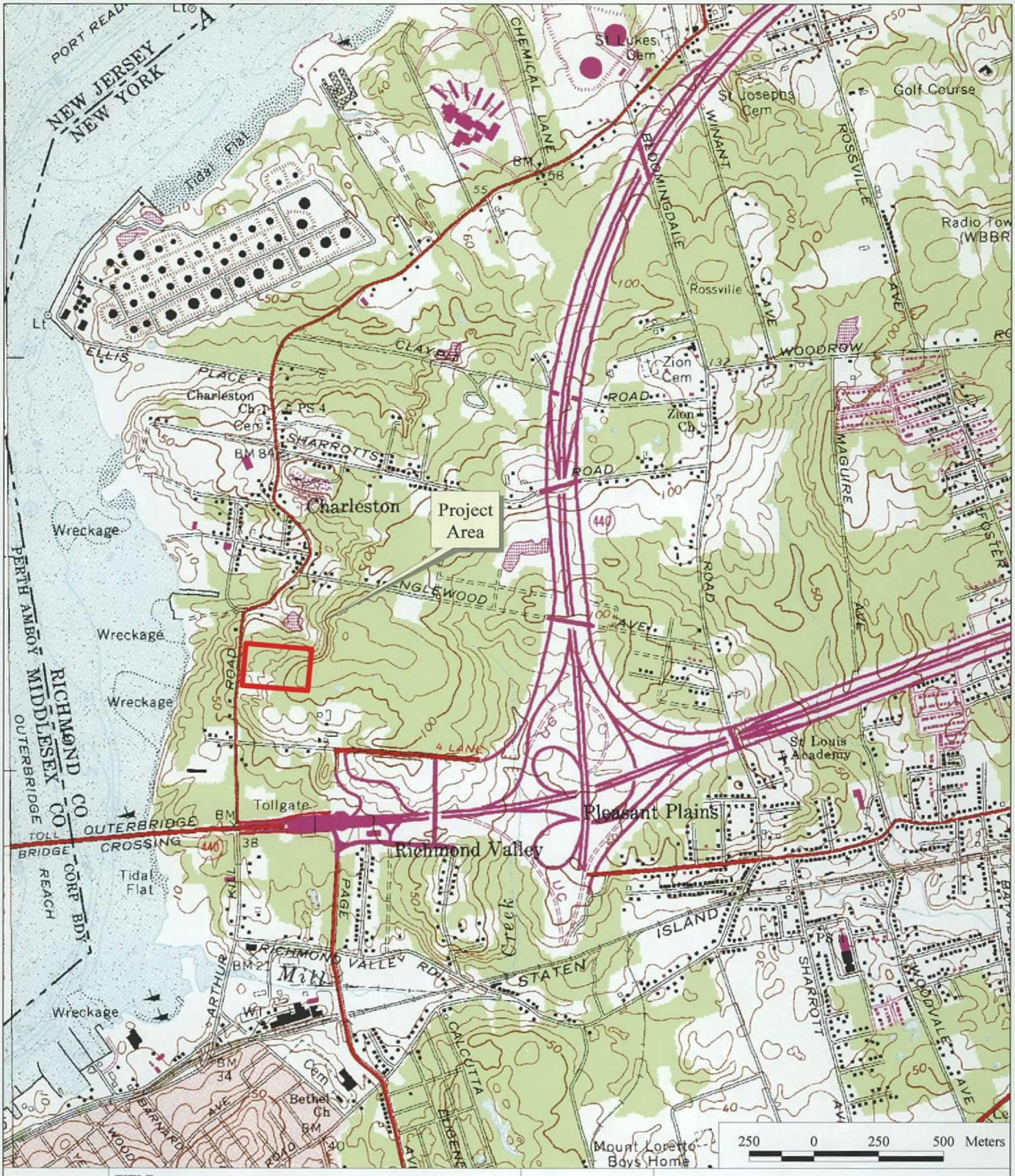
I. INTRODUCTION

New York City Transit is planning to construct a new Department of Buses storage and maintenance facility on an approximately 11-acre parcel in southern Staten Island, New York (Figure 1). The site is bounded on the west by Arthur Kill Road and on the north by the historic Charles Kreischer House property. The southern and eastern boundaries abut additional undeveloped, city-owned property (Figure 2). The site is currently vacant, with a dense covering of underbrush and intermittent stands of trees.

Following the recommendations of a Cultural Resource Screening (Berger 2001), a Phase IB archaeological survey was conducted for the proposed Bus Facility parcel. This survey was performed by The Louis Berger Group, Inc., from May through June 2001, for New York City Transit. The purpose of the study was to provide an assessment of the project area's potential to contain prehistoric or historic archaeological resources, identify any archaeological resources, and provide a preliminary evaluation of their age, integrity, and extent. Prior to the archaeological investigation, background research and examination of historic maps was conducted at the New York Public Library, the Staten Island Institute of Arts and Sciences (SIIAS) and the Staten Island branch of the New York Public Library.

The Phase IB archaeological investigation followed the guidelines established by the New York City Landmarks Preservation Commission (LPC) and city regulations governing the protection of the cultural environment (CEQRA). The project was conducted under the overall supervision of Ms. Susan Grzybowski, Assistant Director/Senior Archaeologist of Berger's Cultural Resource Group. Mr. Zachary Davis, a ROPA-certified archaeologist, served as the Principal Investigator for this project and was the principal author of the report. Field testing was lead by Mr. Rick Vernay under Mr. Davis' direction. Backhoe excavations were conducted by Simonson Excavations of Staten Island, New York. Laboratory processing and analysis were overseen by Mr. Scharfenberger. The graphics were prepared by Mr. Victor Reynolds and Mr. Davis.



	TITLE: FIGURE 1 - SOUTHERN STATEN ISLAND WITH THE PROJECT AREA INDICATED	DATE: OCTOBER 2001	THE LOUIS BERGER GROUP, INC. 120 HALSTED STREET EAST ORANGE, NJ 07018 www.louisberger.com
	SOURCE: USGS 7.5' SERIES ARTHUR KILL, NY-NJ 1966	CLIENT: NEW YORK CITY TRANSIT	

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TITLE: FIGURE 2 - AERIAL PHOTOGRAPH OF THE PROJECT AREA

DATE: OCTOBER 2001

SOURCE: DIGITAL ORTHOPHOTO FROM http://www.nygis.state.ny.us

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II. ENVIRONMENTAL SETTING

A. PROJECT SETTING

The proposed construction site is located at 4700 Arthur Kill Road in the Borough of Staten Island, New York (Figure 1). The site, an undeveloped lot with no visible structures or utility connections, is heavily overgrown with a dense cover of shrubs and trees. The site is located north of the Outerbridge Crossing and east of the Arthur Kill. The Clay Pit Ponds State Park Preserve is situated north-northwest of the project site. Much of the area surrounding the project site is vacant, with development limited to some residential and light commercial uses. Several all-terrain vehicle paths pass through the parcel and into the adjoining undeveloped land.

B. PHYSIOGRAPHY

The project site lies within the Piedmont Lowlands, near the Atlantic Coastal plain (Thompson 1977:34). While the main core of Staten Island consists of serpentine, the bedrock within the project site may contain red beds and diabase of the Newark Series at depths of about 150 to 190 feet (Federal Energy Regulatory Commission 1981:54). Overlying sediments (from bottom to top) consist of glacial clays, glacial fill, varied clays, fine sands, younger glacial fill, and loose fill with beach deposits.

C. DRAINAGE

The site is situated on moderately well-drained to well-drained, low-relief terrain, with the Arthur Kill located approximately 500 feet to the west. There is evidence of numerous ephemeral streams or creeks flowing in a westerly direction on the site.

D. MODERN CLIMATE

The normal annual precipitation, including melted snow, is about 40.38 inches. The annual mean temperature is 53.4 degrees Fahrenheit. Temperature extremes include an oppressive 102.3 degrees Fahrenheit in late August and -14 degrees Fahrenheit in February (Kieran 1971). The average temperature range is 32.7 to 76.1 degrees Fahrenheit.

E. PLANT AND ANIMAL RESOURCES

Prior to European contact the Native Americans in the area of the project site subsisted by hunting small game, fishing, collecting shellfish, and gathering local plants. Cultivation of corn, local wild grasses, and tubers may have occurred prior to European contact. The first European explorers, Henry Hudson and Giovanni Verrazano, among others, noted (with some detail) the surrounding environment; they remarked on the great quantities of fish, small game, oysters (larger than they had ever seen), and waterfowl (Kieran 1971). The early European settlements of the seventeenth century imported many of the initial foodstuffs they needed, including domestic animals (sheep, cattle, horses, swine, and fowl), seeds, grains, and root

plants. The new agricultural species had very few problems adapting to local soils; however, along with these importations came an unwanted invasion of foreign insects and fungi that later proved detrimental to native species (Barlow 1971; Kieran 1971).

Early shipping settlements remained fairly self-contained, relying little on native resources. By the turn of the eighteenth century, as more towns were established, reliance on native resources increased. Local salt marsh grasses proved to be ideal feed hay for cows. Virgin stands of oak were cut and used in shipbuilding, house construction, and as raw material export (Barlow 1971; Booth 1859; Kieran 1971).

From 1700 to 1850 more townships were established and grew in overall size. The forest area diminished; all the local large game animals, such as deer and bear, were killed off and their habitat replaced by agricultural fields. The Revolutionary War destroyed much of the virgin forest in the New York City area, as most of the trees were used as firewood by Tory and Hessian forces. What remained were small stands of trees often used as official landmarks for township divisions (Thompson 1918).

During the period of increased industrialization in the mid-nineteenth century, land use gradually shifted from agriculture to manufacturing and raw material processing. The tidal marshes, previously exploited for grasses, became ideal dump sites; much of what is landfill today was at one time tidal marshes and small rivulets.

F. PALEOENVIRONMENT

Reconstructing environmental and landscape changes through time is essential to identifying an area's archaeological sensitivity, as preferred locations for prehistoric settlement are known to have developed under certain environmental conditions. The climatic, hydrologic, and vegetational conditions in the project site have changed over the course of human occupation. For example, the earliest evidence of human activity in what is now New York occurred during the Late Pleistocene, when the climate was considerably colder. Changes in the climatic system in the area of the project site since the end of the Pleistocene have affected the evolution of waterways in the area and the types of plant and animal resources upon which human populations depended. Paleoenvironmental reconstructions of the area provide a model for predicting settlement history and potential archaeological site locations.

Based on data from fossil pollen remains and associated radiocarbon dates, the local environment during the earliest human habitation of the area can be generally characterized as periglacial. The remnants of the Wisconsin glacial advance stretched in an irregular belt almost 1 mile wide from Perth Amboy at the mouth of Raritan Bay in New Jersey across New York State in a northwesterly direction. Between 12,000 and 13,000 years before present (BP) the sea level may have been 300 feet lower than the present level, and the shoreline extended out approximately 60 to 90 miles from its present position (Kraft 1977). Consequently, river and stream systems and their plant and animal communities exhibited different configurations (Edwards and Merrill 1977). Peat borings from the continental shelf indicate that the fairly level plain supported an open spruce parkland or spruce woodland environment, including pine, fir, and other vegetation (Sirkin 1976, 1977). The geomorphology of the area in combination with the effects of glaciation and subsequent sea level rise indicates that marine environments were probably not stable at this early date and could not have served as a primary focus of human subsistence activities (Custer, *et al.* 1983; Edwards and Merrill 1977; Newman 1977).

The glaciers began to retreat between 17,000 and 15,000 BP. Glacial scarring created a variety of developing habitats, including estuaries, salt and freshwater marshes, bogs, upland, and midslope communities. Glacial soils contained a wide diversity of particle size, which allowed good drainage and adequate water supplies for the developing plant and animal communities.

After the retreat of the glaciers, the coastal region of New York was favored by a set of ecological factors that probably contributed to its attractiveness to early human populations. These factors included a relatively long frost-free period, a greater annual reception of sunlight, and the tempering effects of a coastal environment. Brennan (1979:34) suggests that during postglacial recovery deciduous forests penetrated the coastal regions of New York and New England more rapidly than in the cooler and higher inland regions. Many of the cold-adapted animals probably followed the retreating glaciers northward and, in the case of mammoth and mastodon, became extinct. These creatures were replaced by deer, elk, moose, bear, and smaller mammals.

By circa 15,000 BP the Wisconsin Ice Margin had receded north of New Jersey (Schuberth 1968). At that time it is estimated that the sea level was approximately 300 feet lower than the current level. This would have exposed a large area of the continental shelf, possibly as far as 90 miles 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. Consequently, lowlands, like the Newark Basin Area, provided natural drainages for glacial meltwater. However, a 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 Lake Hackensack. An outlet formed about 10,000 BP, draining the lake, and the deep deposits of silt and clay that remained from the lake bottom formed the foundation for an immense meadowland (Widmer 1964).

The Arthur Kill began in the Early Holocene, probably as a narrow, brackish stream (Eisenberg 1978). As the sea level rose, this steep valley gradually became a wider estuary, lined with marshes. Channelization of the Arthur Kill may have resulted from erosional effects 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 the glacial retreat the regional vegetation changed from open spruce forest to mixed hardwood vegetation in the uplands, and grasses and wetlands forest in the lowlands (Sirkin 1976,1977). Changes in faunal communities accompanied the shifts in climate and vegetation. Large cold-adapted species, such as mammoths, mastodons, and caribou, were replaced by more temperate species, such as white-tailed deer. With the rise in sea levels, the area of the project site changed from an inland setting to a coastal one. These changes would have had an enormous effect on potential for population movements and resource exploitation. Upland terrain would have supported mixed hardwood forests, and lowlands would have supported a variety of wetland and lowland forest vegetation. Expanding wetlands and waterways in the project site would have provided environments for numerous migratory birds, waterfowl, fish, and mollusks.

Pollen data show that the regional environment continued to change after glaciation. By 2000 BP environmental and meteorological conditions had approached those of the present, but southern tree species continued to migrate into the area (Barlow 1971).

III. PREHISTORIC CONTEXT

The following prehistoric overview is based upon data derived from sites in Staten Island and, to a lesser degree, general patterns of prehistoric settlement in the Middle Atlantic Region. Regional patterns of prehistoric settlement provide a context from which to determine the types of occupation that are likely to have occurred in the area of the project site during the prehistoric era. Prehistoric cultural history was derived from archaeological site reports and syntheses. Many prehistoric sites have been identified and excavated in western Staten Island, and many of the sites are multicomponent, which reflects the repeated occupation of preferred habitats, such as sandy uplands overlooking streams and wetlands (Skinner 1909).

Three major periods are commonly used to describe the prehistoric cultures of New York– Paleoindian, Archaic, and Woodland. The earliest recognized aboriginal occupation of New York 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. Port Mobil, a Paleoindian site located on the western shores of Staten Island, dates to circa 10,000 BP, and was interpreted as a small, resource-procurement/hunting encampment (Eisenberg 1978; Funk 1977). The artifact assemblage from the site includes fluted points, unfluted trianguloid points, scrapers, knives, borers, and gravers. 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). The Port Mobil Paleoindian site is located approximately 1 mile (1.6 kilometers) to the northwest of the project site.

Paleoindian economy may have centered on the hunting of game. Although other economic activities, such as the gathering of plant foods, may have been equally important (Roosevelt et al. 1996), they have left little or no trace in the archaeological record. Lithic technological considerations may have also contributed to Paleoindian landscape settlement patterns. Goodyear (1989) suggests that high-quality cryptocrystalline materials (i.e., chert, jasper, and chalcedony) were the materials most commonly used to manufacture fluted lanceolate projectile points. He suggests that Paleoindians used high-quality lithic materials when producing fluted points because of the predictable manner in which these materials fractured, thereby decreasing the possibility of catastrophic fractures occurring as a result of internal (and hidden) flaws, typically present in low-quality lithic materials. This dominance of high-quality lithic materials suggests that Paleoindians sought out high-quality materials, a hypothesis that is supported by the presence of high-quality lithic materials derived from great distances (up to 300 kilometers) at Paleoindian sites. However, recent geoarchaeological surveys have challenged this assumption by identifying local sources for Paleoindian lithic material (LaPorta 1994; Moeller 1999). These recent studies suggest that Paleoindians were occasionally manufacturing fluted projectile points on local and poorer quality lithic materials.

Paleoindian site distribution in New York and nearby New Jersey suggests a preference for high, well-drained ground near streams or wetlands, offering vantage points for observing game. Sites have also been located in rockshelters, near lithic source areas, and on lower river terraces. It is probable that many Paleoindian sites were situated on what is now the continental shelf (Marshall 1982).

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 subperiods (Coe 1964; Ritchie 1980). Early Archaic sites identified on Staten Island include the Old Place 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. Unfortunately, so little is known about the Middle Archaic occupation of the region that it is often linked with either the Early or Late Archaic in discussions of prehistory (Kraft and Mounier 1982)

Late Archaic sites, on the other hand, are relatively common on Staten Island. These sites are characteristically situated on tidal inlets, coves, and bays. Site location and contents suggest that Late Archaic hunter-gatherer groups exploited various marine resources, including shellfish and fish. The sites are typically small and multicomponent because of reoccupation, as preferred locations for resource procurement. Changes that occur in the Late Archaic aboriginal/indigenous toolkits reflect an expansion in the variety of utilized resources. Some of these changes include the manufacturing of fishing gear, such as netsinkers (weights), fishhooks, and an increase in the use of groundstone to cobble tools (Ritchie 1980:143). The increased utilization of marine and estuarine resources in this period is associated with the stabilization of coastal environments (Edwards and Merrill 1977).

The Archaic remains found on Staten Island are mainly represented by the narrow point tradition, which includes Poplar Island and Bare Island types. Links with these cultural traditions suggest affinity with the Middle Atlantic Region in New Jersey (Ritchie 1980:145). Many points that are characteristic of the Late Archaic occupations of Staten Island are made of argillite, which is not found locally. The nearest source of this material is within the Lockatong Formation of central New Jersey, which is exposed above and below the Palisade Sill south of the George Washington Bridge (Didier 1975). Other artifacts associated with the so-called Bare Island components on Staten Island include banner stones, steatite bowls, grooved axes, cylindrical pestles, and hammerstones (Ritchie 1980:149).

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 (circa 700 BC to AD 1600) occupation on Staten Island is characterized by the introduction of ceramic technology. The earliest ceramics recognized in coastal New York are grit-tempered wares similar to a Vinette I-style series, which is U-shaped with a rounded conical point when seen from top

edge to bottom. Changes in pottery temper, vessel form, and surface treatments are useful chronological indicators. Middle Woodland ceramics include shell-tempered wares with cord and net impressions; Late Woodland ceramics include various collared vessels with incised as well as dentate and cordmarked decoration.

While Early Woodland occupants appear to have followed hunting and gathering lifeways, plant cultivation became increasingly important during the Late Woodland period. Changes in subsistence practices and population growth led to increased settlement, which resulted in the appearance of villages. Various research has identified and examined the agricultural practices in coastal New York during the late Prehistoric and Contact periods and their effects on settlement patterns (Ceci 1979,1982; Silver 1984).

At the time of European contact, Staten Island 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).

IV. HISTORIC CONTEXT

From 1621 to 1664 Staten Island was part of the Province of New Netherland administered by the Dutch West India Company, under whose jurisdiction the Island received its name (Black 1982:9; Goldstone and Dalrymple 1976:471). Attempted development under David Pietersen DeVries (1639-1641) and Cornelius Melyn (circa 1641-1643, 1650-1655) was troubled by resistance from Native American populations, culminating in the "Peach War" of 1655, which diminished the European population of Staten Island to the extent that "settlement had to be recommenced" (Bayles 1887:58; Black 1982:9)

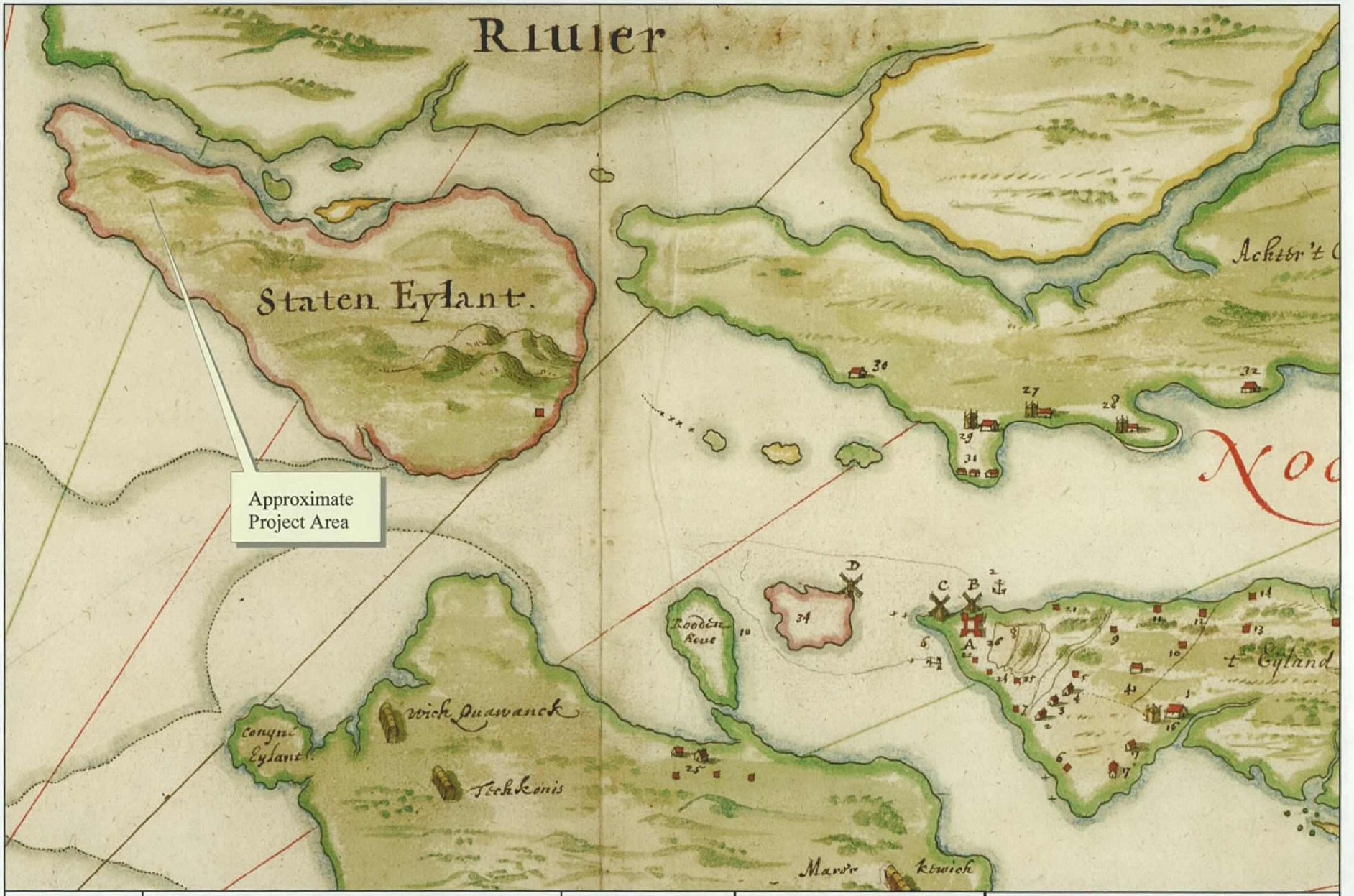
In 1622 a number of dwellings and a small blockhouse had been erected on a site above lower New York Bay, a short distance south and west of the High Ground at the point of the Narrows (Figure 3). This settlement, consisting mainly of Dutch and French, came to be known as Oude Drop, or Old Town. It proved "well suited" for occupation, with "flat fields" for agriculture, the "New Creek" for access through the salt marshes to the "wealth of fish" in the lower bay, and "forest clad hills" for pasturage of cattle and swine (Leng and Davis 1930:104).

In 1664 New Netherland, including Staten Island, was taken over by Great Britain, which pressed its position on the basis of Sebastian Cabot's "discovery" of North America for the crown in 1497. In 1670 the last Native American claims to Staten Island were extinguished, and in 1683 Staten Island was organized as the county of Richmond. In 1788 Richmond County was divided into the towns of Castleton, Northfield, Southfield, and Westfield. Westfield, where the project site is located, encompassed the west shore from Freshkills south to Tottenville and up through the Richmond Valley to Greenridge (Schneider 1977:13). Early settlement continued under the British, with significant numbers of Huguenots arriving in the last years of the seventeenth century (Bayles 1887:91). By the mid-eighteenth century Staten Island's population was a mix of Dutch, French, Belgian, and British, with the British in the majority.

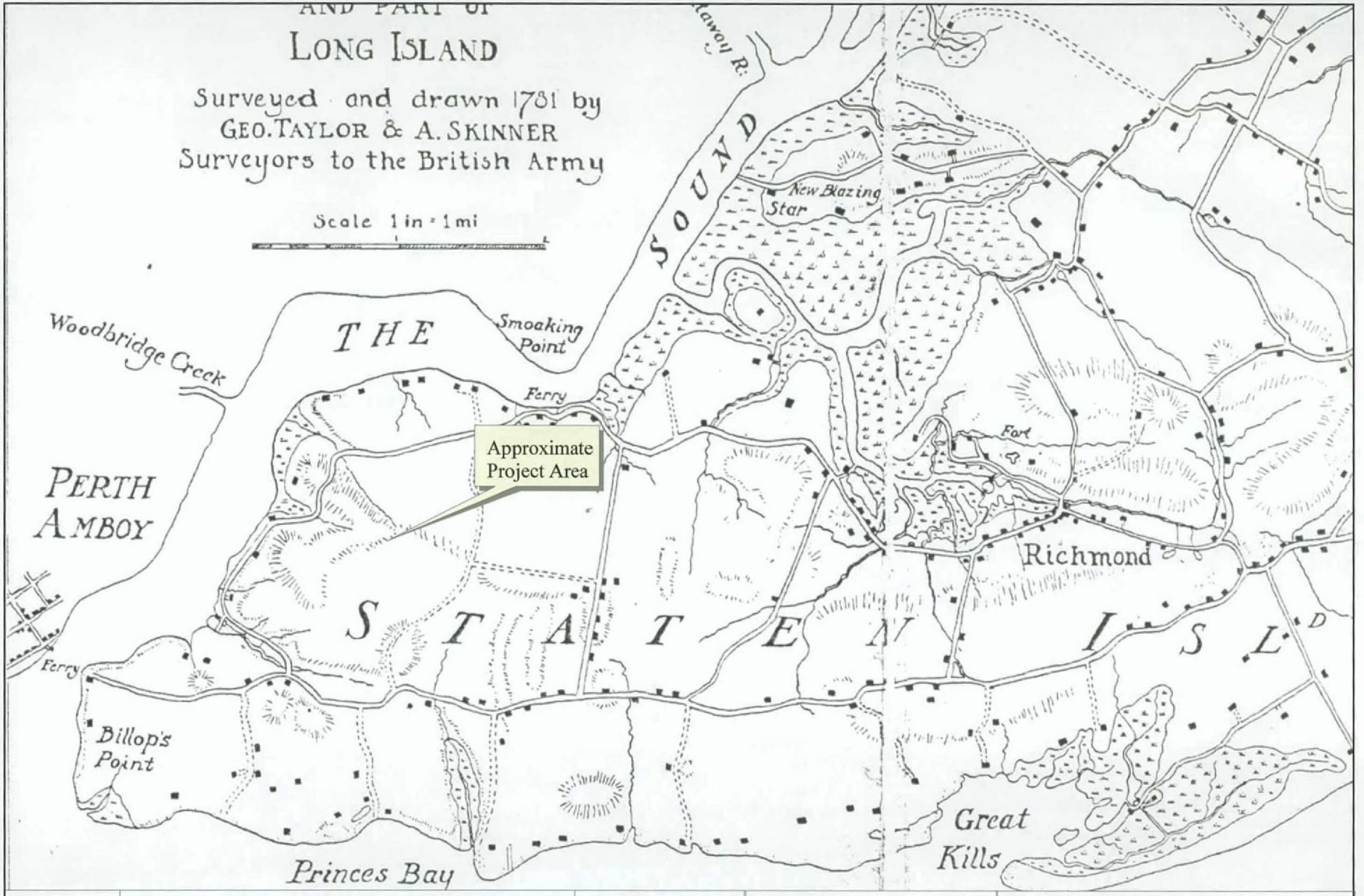
During the eighteenth century Staten Island developed as a primarily agricultural and fishing community with its county seat at Richmond town, its principal village, which had been established in 1695. Some of the products raised at that time were beef, pork, wheat, rye, and apples. Fish, oysters, and 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).

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 (Figure 4). 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. Billopp, a British loyalist, relocated his family during the war to a safer locale, presumably taking many of their possessions along with them.

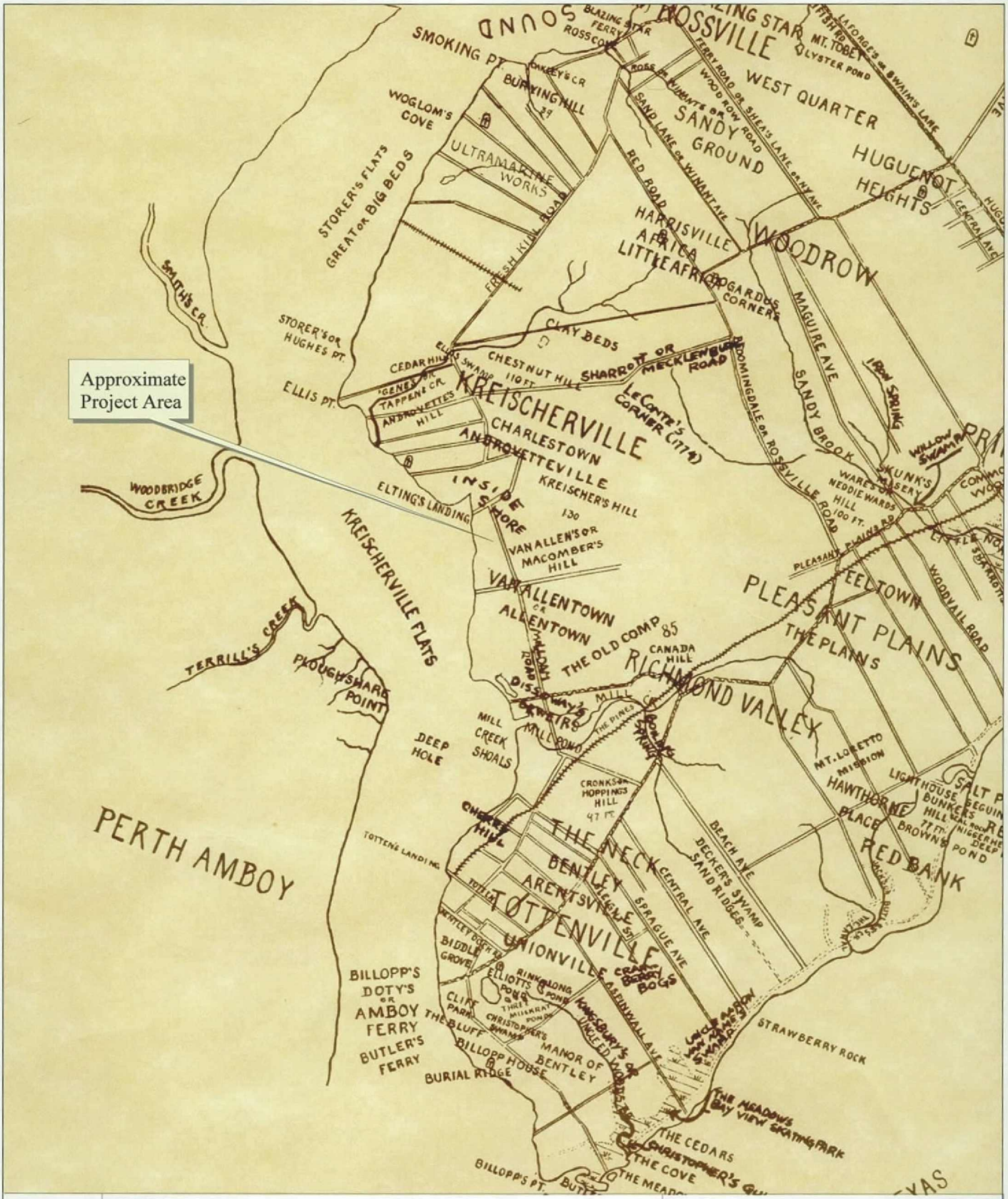
The place names of Smoking Point and Achterkull (Arthur Kill) appeared in the written record as early as 1621 (Figure 5). Smoking Point was used as a landmark in many early land transactions beginning in 1670. Actual settlement probably occurred soon after the patenting of the lands. Cattlemarks were issued to landholders who recorded their residence as Smoking Point in 1680 (Leng and Davis 1930:124), and



N W S E	TITLE: FIGURE 3 - PROJECT AREA IN 1639	DATE: OCTOBER 2001	LOCATION: 4700 ARTHUR KILL ROAD, STATEN ISLAND, RICHMOND COUNTY, NEW YORK	THE LOUIS BERGER GROUP, INC. 120 HALSTED STREET EAST ORANGE, NJ 07018 www.LouisBerger.com
	SOURCE: VINCKEBOONS 1639	CLIENT: NEW YORK CITY TRANSIT		



N W E S	TITLE: FIGURE 4 - SOUTHERN STATEN ISLAND IN 1783	DATE: OCTOBER 2001	LOCATION: 4700 ARTHUR KILL ROAD, STATEN ISLAND, RICHMOND COUNTY, NEW YORK	THE LOUIS BERGER GROUP, INC. 120 HALSTED STREET EAST ORANGE, NJ 07018 www.LouisBerger.com
	SOURCE: TAYLOR & SKINNER 1781	CLIENT: NEW YORK CITY TRANSIT		



N W E S	TITLE: FIGURE 5 - OLD PLACE NAMES OF STATEN ISLAND		
	SOURCE: LENG & DAVIS 1896	CLIENT: NEW YORK CITY TRANSIT	DATE: OCTOBER 2001

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ownership of salt meadow tracts on the south and west shores were under dispute by 1682. Sections of the Arthur Kill Road were laid out in 1694. The road was originally referred to as the Old Road and, after 1764, Fresh Kills Road (McMillen 1946:3-8).

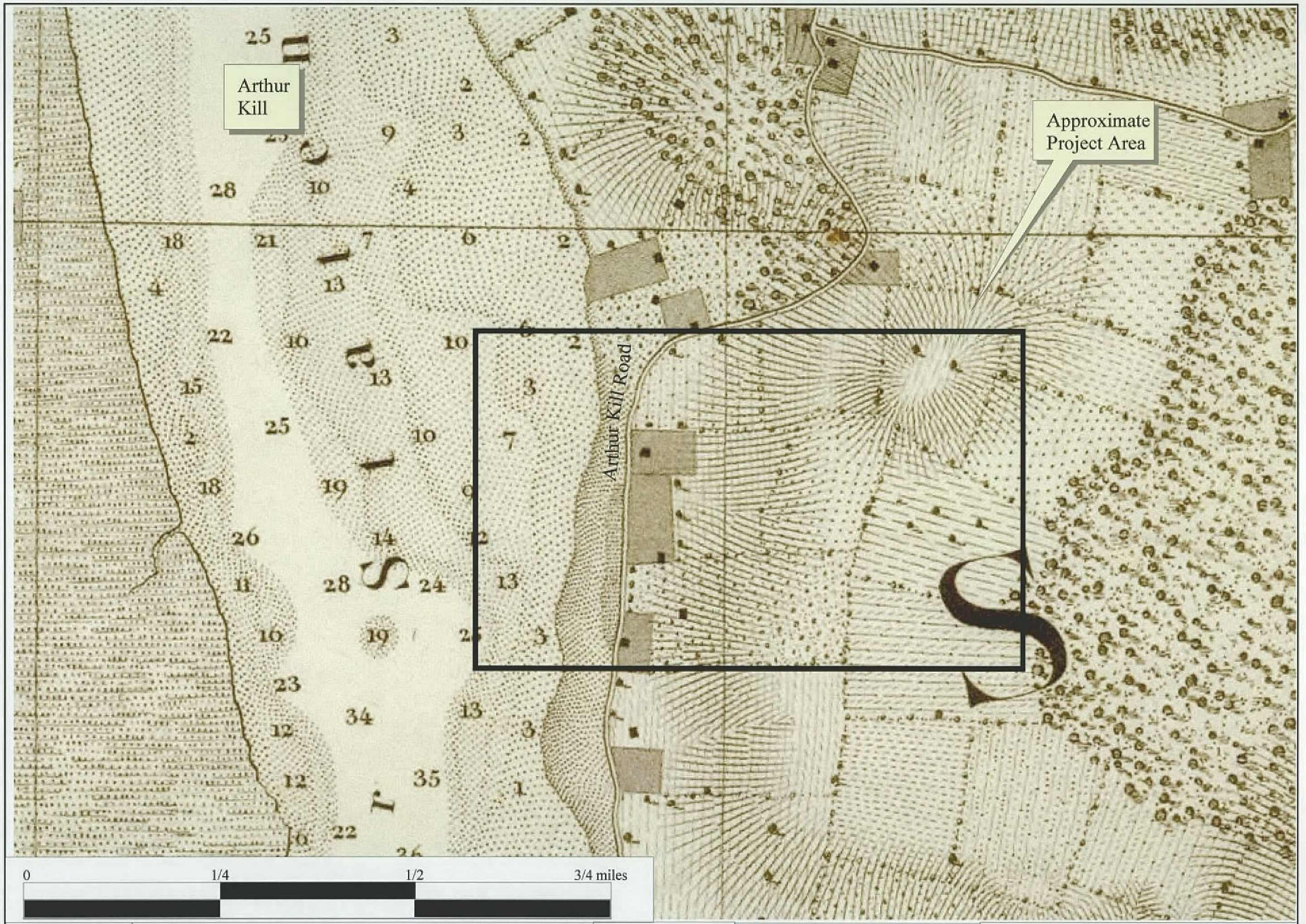
By 1720 settlement of the western Westfield region was significant enough to warrant the erection of public livestock pounds at Smoking Point and Port Richmond. Sometime prior to 1772, Dissoway's gristmill on Mill Creek, opposite Perth Amboy, was constructed. This was the only mill on record that serviced the custom of a large part of the western section of Staten Island. The mill was razed shortly after 1900 (McMillen 1951). Eighteenth-century maps of the Smoking Point area clearly show the presence of homesteads along the shoreline. Most of those owners identified with particular dwellings are descendants of original Westfield families: Wynant (Winant, one of the oldest Dutch families on Staten Island), Dusoway (Dissoway, a Huguenot family that purchased land in Richmond County as early as 1687), and Woglom (a Dutch family mentioned in Staten Island land records in 1696) (Clute 1877:375,435,437).

The nearest and most important village to the project site is Rossville. In 1722 Anthony Wright was granted a license to operate the Blazing Star Ferry across the Arthur Kill to New Jersey. Another ferry, north of Fresh Kills on the Arthur Kill, was established in the 1750s and named the New Blazing Star Ferry (now Travis). In the early nineteenth century Old Blazing Star Ferry developed into the village now known as Rossville. Winant family members built village residences on half-acre lots during the second and third decades of the nineteenth century. A dock was built in about 1822 to allow steamships to stop on their trips between New York and the New Jersey ports of Perth Amboy, Keyport, and New Brunswick. A hotel was built in 1829 to accommodate travelers and those seeking recreation. New roads were laid out to connect the dispersed farmsteads with Rossville. Governor Tompkins laid out Richmond Turnpike (Victory Boulevard) to New Blazing Star Ferry, providing a stagecoach-steamboat connection on the New York to Philadelphia route (Clute 1877:23-D).

Beginning in the 1830s, Staten Island was "discovered" by 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. Old Blazing Star Ferry attracted Colonel William E. Ross, who constructed a replica of Windsor Castle on the bluffs above the Arthur Kill just north of the project site. His mansion, known locally as Ross Castle and later as Lyons Mere, remained the preeminent residence in the Smoking Point area throughout its existence. It was demolished in about 1922 (Leng and Davis 1930:946). In 1837 Old Blazing Star changed its name to Rossville to honor its most influential citizen. During this period many descendants of the original families subdivided their large landholdings into small house lots, particularly within the village proper. In 1841 Rossville was described as having 32 dwellings, three mercantile stores, and 181 inhabitants (Gilbertson 1982:4).

In 1825 a group of free blacks established a community at Sandy Ground, just north of the project site. The original settlers were oystermen from Maryland's Eastern Shore. The proximity to markets in New York City and the abundant oyster beds provided the focus for the settlement. Sandy Ground is listed in the National Register of Historic Places.

Industrial pursuits in the Smoking Point area concentrated on oystering or shipbuilding until Balthasar Kreischer established a firebrick plant nearby in the mid-nineteenth century. At this time, the project area, known as Androvetteville, was sparsely settled (Figure 6). Kreischer chose the area of modern Charlestown,



TITLE: FIGURE 6 - VICINITY OF THE PROJECT AREA IN 1844

DATE: OCTOBER 2001

SOURCE: U. S. COAST SURVEY 1844

CLIENT: NEW YORK CITY TRANSIT

LOCATION: 4700 ARTHUR KILL ROAD, STATEN ISLAND, RICHMOND COUNTY, NEW YORK

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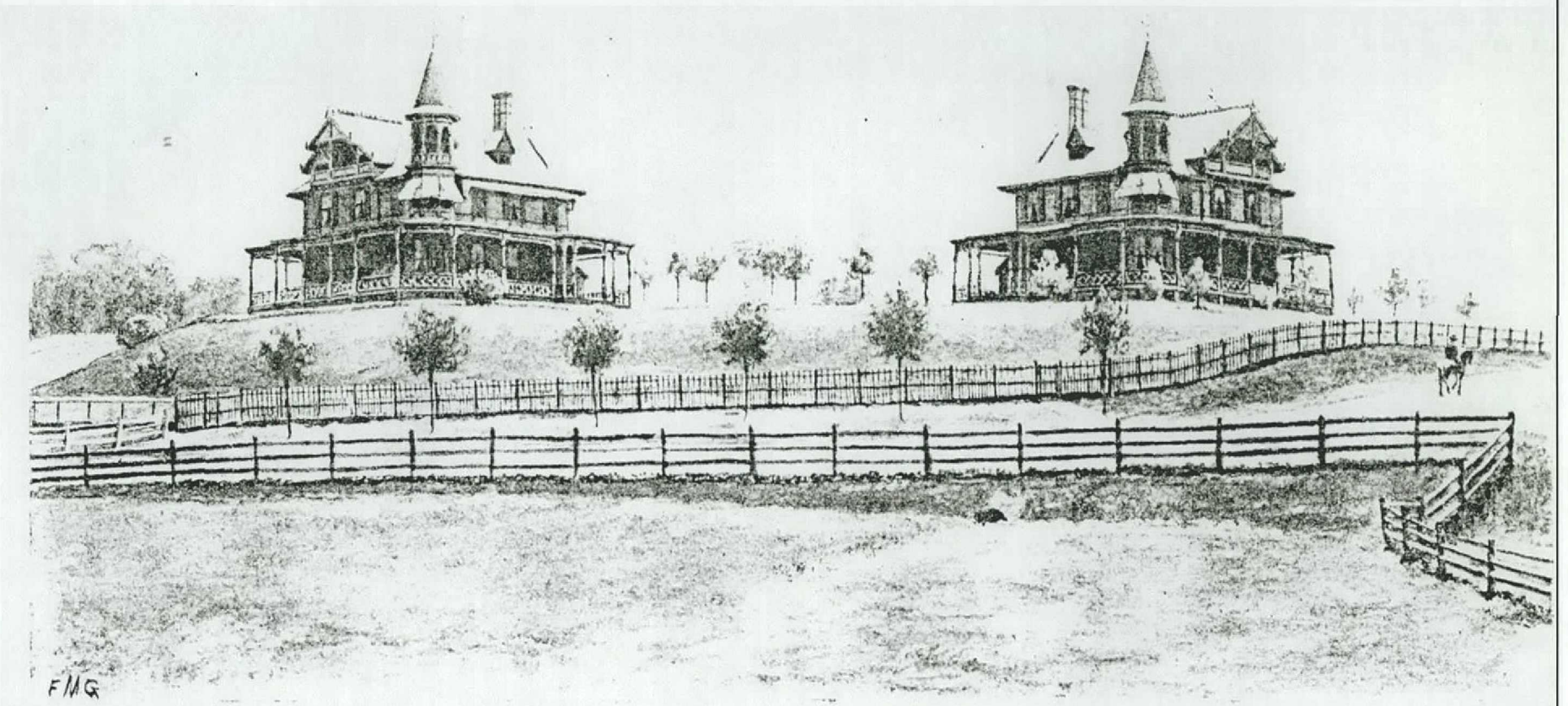
then known as Androvetteville, due to the presence of several clay bed deposits (Abbott 1949:31). These clay beds contained light colored clays well suited for firebrick manufacturing. Kreischer himself would determine if the soil contained rich clay sources as "he used to go round with his cane and stick it in the ground and pull it up and smell it, and if he smelled clay he bought the land! (Abbott 1949:34)" In 1855, Kreischer established the firebrick factory in Kreischerville and within a few years, the factory became the leading producer of firebrick in the east coast. With the factory's large firebrick production came an increase in housing for the factory's workers. Several houses were erected in Kreischerville for the factory's workers. Four of these c.1890 houses still stand and have received LPC designation (Dolkart 1998:295). Kreischer himself lived near to his factory, building a mansion overlooking the entire factory works a few years after constructing the factory. Below Kreischer's mansion were two twin two-story houses built for Balthasar Kreischer's sons, Charles and Edward (Figures 7 and 8). Constructed c.1888, the Charles Kreischer houses remains standing while Edward Kreischer's house burnt down in the early 20th century. The firebrick factory endured several devastating fires through the years, although the factory was reconstructed every time.

Kreischer's sons joined in the firm and it was known as B. Kreischer and Sons Firebrick Factory. On August 25, 1886, Balthasar Kreischer passed away at the age of 73 and the entire area was in mourning; one young girl whom had grown up in Kreischerville was overheard saying "I really though the world would come to an end (Abbott 1949:41)." Kreischer's sons continued the business and themselves endured a few more fires in the factory. The factory continued producing vast quantities of firebrick, becoming one of the leading producers in the country. The firebrick works were featured in an issue of the *Bulletin of the New York State Museum* (1900) entitled "Clays of New York." At the beginning of the 20th century, the firebrick factory passed out of the family and continued producing firebrick until 1927. At its peak, Kreischer's factory employed up to 1,000 individuals (Abbott 1949:37). The abandoned factory was engulfed in a tremendous blaze on November 5, 1936, leaving only a few walls and chimneys standing (Staten Island Advance, 1936). Today, there is no indication of the former factory as the entire area of the factory is now overgrown with weeds and vegetation.

The opening of the Outerbridge Crossing and Goethals Bridges in 1928 did not halt the decline of the Rossville area. Rezoning allowed the construction of liquid natural gas tanks, petroleum storage facilities, a marine junkyard, and a sanitary landfill along the Arthur Kill (Geismar 1985:38).

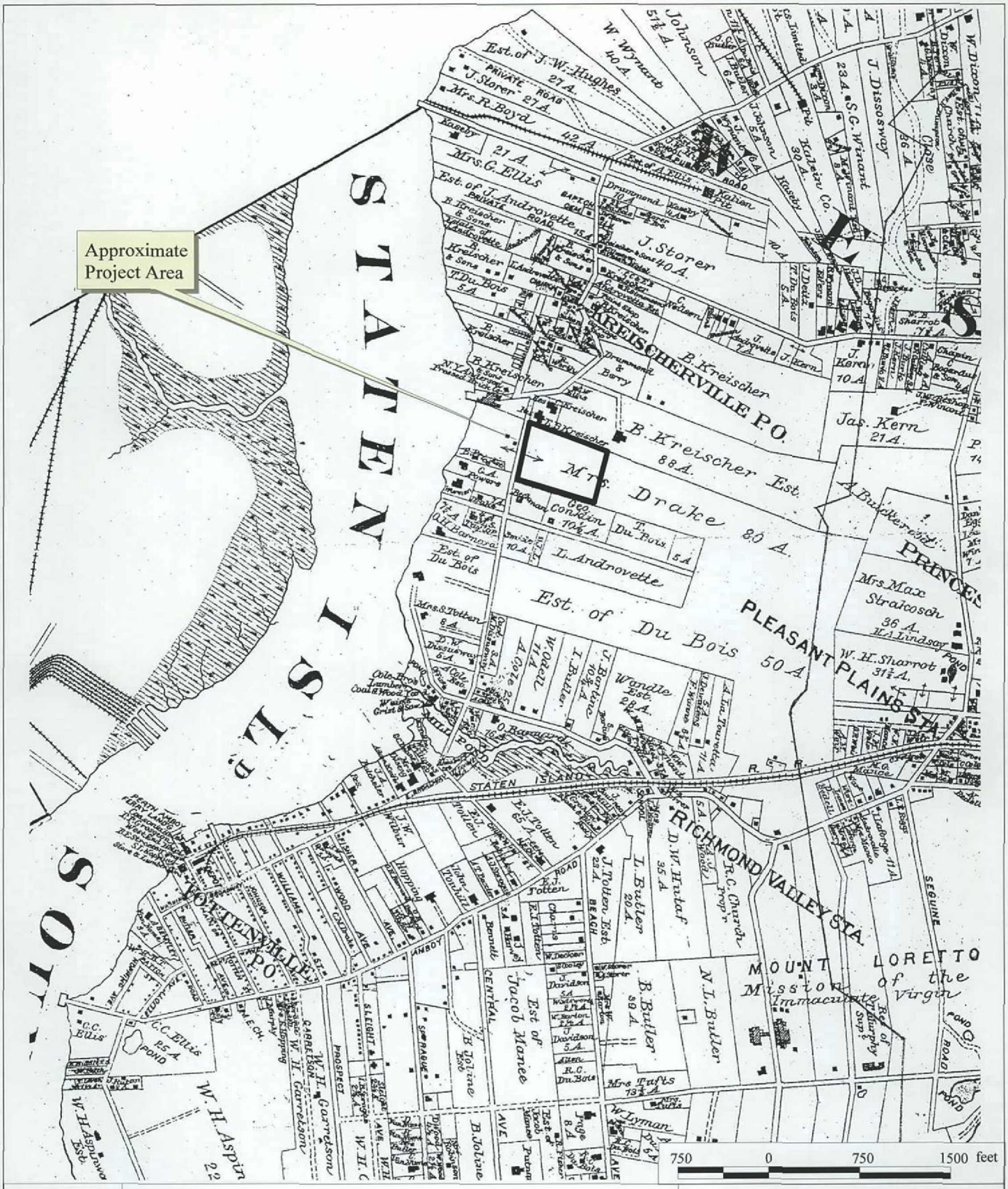


RESIDENCES OF CHARLES C. AND EDWARD B. KREISCHER.

Kreischerville, N. Y.

ARTOTYPE, E. BIERSTADT, N. Y.

TITLE: FIGURE 7 - LATE 19TH CENTURY ESTATES OF CHARLES AND EDWARD KRESICHER			LOCATION: 4700 ARTHUR KILL ROAD, STATEN ISLAND, RICHMOND COUNTY, NEW YORK	THE LOUIS BERGER GROUP, INC. 120 HALSTED STREET EAST ORANGE, NJ 07018 www.LouisBerger.com
SOURCE: BAYLES 1887	CLIENT: NEW YORK CITY TRANSIT	DATE: OCTOBER 2001		



N W E S	TITLE: FIGURE 8 - 1887 MAP OF THE PROJECT AREA		THE LOUIS BERGER GROUP, INC. 120 HALSTED STREET EAST ORANGE, NJ 07018 www.louisberger.com
	SOURCE: BEERS 1887	CLIENT: NEW YORK CITY TRANSIT	DATE: OCTOBER 2001

V. FIELD INVESTIGATIONS

A. METHODS AND FIELD RECONNAISSANCE

Archaeological testing was conducted across the entire 11-acre parcel. Prior to subsurface testing, the parcel was surveyed on foot in order to identify any exposed and/or disturbed archaeological resources. This pedestrian survey was hindered by the dense vegetative growth covering the project area (Plate 1). To expedite the subsurface survey, vegetation was cleared via hand clearing tools and with the assistance of a Caterpillar 225B LC backhoe. There were indications that portions of the parcel had been disturbed through activities such as grading and landscaping, refuse dumping, and vehicular disposal. In areas of extreme refuse dumping, subsurface testing was confined to areas lacking dumped refuse. Subsurface test excavations were confined to locations within the parcel that appeared to be relatively undisturbed. Excavations consisted of shovel test pits (STP's) and backhoe trenches.

All STP's were mapped using a Trimble Pro XR mapping-grade GPS unit. This GPS unit records spatial locations with an accuracy of ±50 centimeters (± 20 inches). Each GPS recorded point requires approximately one minute to record the spatial position of the shovel test. All GPS recorded points will be corrected using in the field real-time correction via a National Geodetic Survey (NGS) continuously operating reference system (CORS). At the end of each day, the GPS collected data will be postprocessed to reduce errors due to atmospheric interference and selective satellite availability. The GPS data points are postprocessed by comparing the field data to a known reference data point tracking the same satellites used to generate the in field data. Postprocessing typically improves the spatial precision for each position by around 50%.

Once all excavated STP's were recorded with the GPS and postprocessed, the GPS data were exported as ArcView GIS (Geographic Information Systems) data files and entered into an already existing GIS database for the NYC Transit Project. Storing all field data within the GIS database provides quick and immediate access to spatial information on artifactual distribution across the project area. For example, the GIS database can display distribution of different artifact classes over the project area in order to isolate activity specific localities. Additionally, spatial data within the GIS database can be presented graphically to illustrate artifact distribution in relation to several independent variables, such as topography, soil type, viewshed, etc. At the conclusion of the project, the GIS database can be delivered to NYC Transit along with the finished report.

A total of 191 STP's were excavated by a crew of professional field technicians over five days (Figure 9). STP's were placed along eleven transects, labeled A through K, spaced at 15-meter intervals. Each transect ran from the project area's western boundary to the eastern boundary at a bearing of roughly 115° east of magnetic north. Spacing the STP's at 15-meter intervals required eighteen STP's along each transect. It was not possible to excavate a few of the STP's due to high slope (>30°), which had eroded away all intact soils.

STP's measured approximately 1 foot in diameter and were excavated to depth where sterile subsoil, rock, or water was encountered. All excavated soil was screened through ¼-inch hardware mesh to aid in the recovery of artifacts. STP profiles were recorded for each excavation using Munsell Soil Color and standard

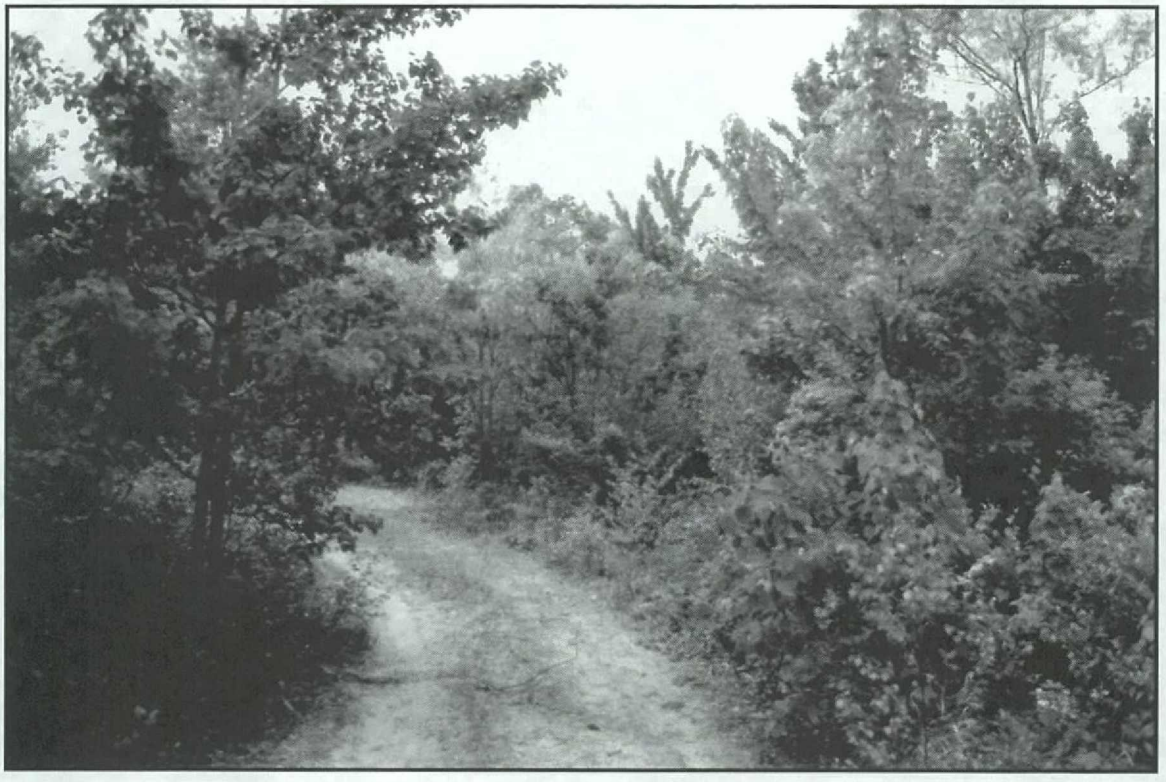


PLATE 1: View Within Project Area Illustrating Dense Overgrowth

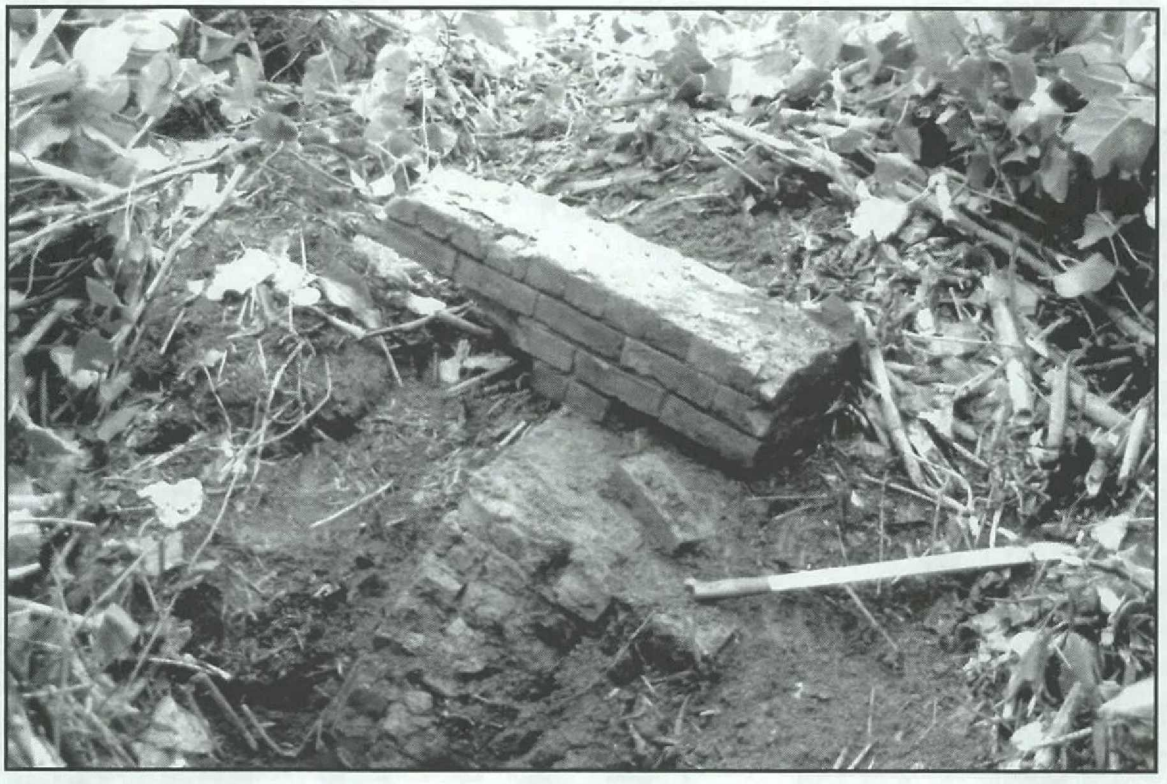
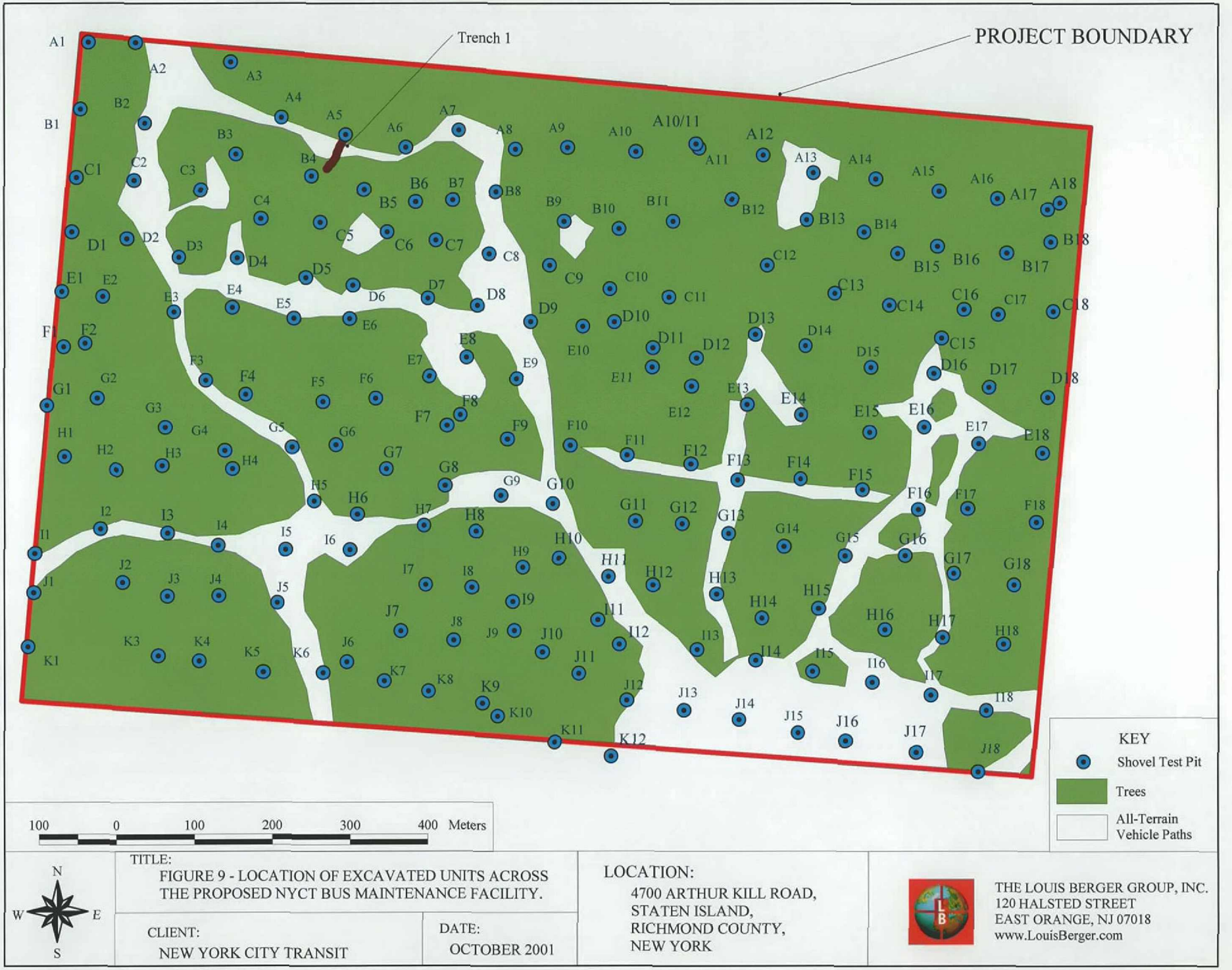


PLATE 2: Brick and Mortar Feature Found along the Northern Edge of the Project Area



TITLE:
FIGURE 9 - LOCATION OF EXCAVATED UNITS ACROSS THE PROPOSED NYCT BUS MAINTENANCE FACILITY.

CLIENT:
NEW YORK CITY TRANSIT

DATE:
OCTOBER 2001

LOCATION:
4700 ARTHUR KILL ROAD,
STATEN ISLAND,
RICHMOND COUNTY,
NEW YORK

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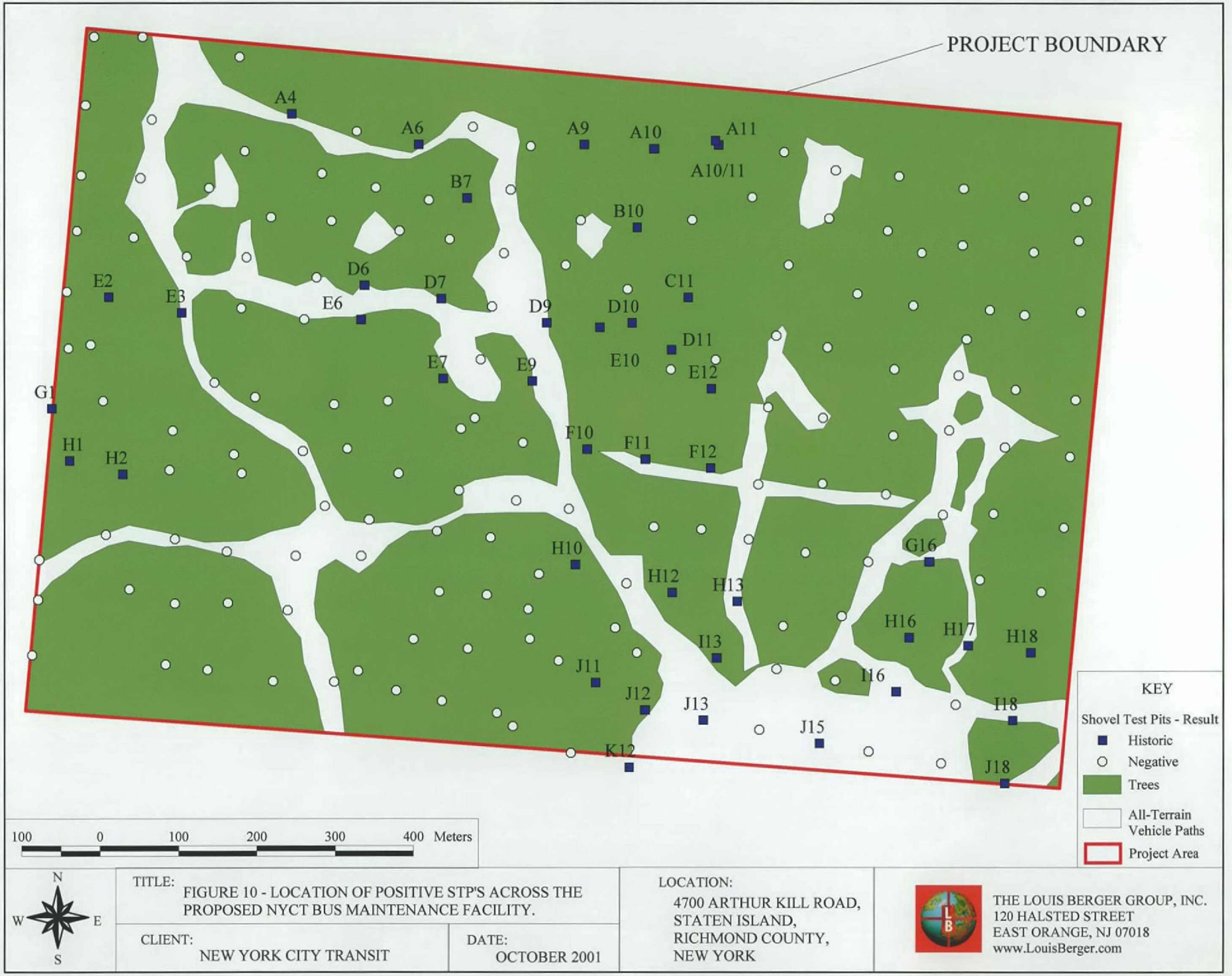
texture classifications. Following each excavation, all STP's were backfilled. Modern debris was noted in the field, but not collected. The stratigraphic profiles for all STP's are presented in Appendix A.

B. RESULTS OF SUBSURFACE TESTING

Of the 191 STP's and one trench excavated in this Phase IB archaeological survey, the majority did not reveal any archaeological material (Figure 10). A total of 147 artifacts were recovered from 43 STP's, with the remaining 148 STP's failing to produce any evidence of archaeological material dating to before 1950. The artifacts recovered from the 43 STP's are summarized in Appendix B. The majority of the artifacts are small fragments of historic ceramics, bottle glass and clam shells. The spatial distribution of the artifacts across the project area does not reveal any clustering or patterning. In fact, the low density of artifacts across the project area suggests the majority of the artifacts do not directly result from the past behaviors of people living within the project area. It is possible that the artifacts have been deposited within the project area as a direct result of large scale dumping and recent (post-1950) soil removal episodes. The later possibility is confirmed by the project area's soil stratigraphy profiles.

Throughout the Phase IB survey, soils encountered by the STP's and the one trench revealed inconsistent soil profiles, suggesting the project area has seen a high degree of surficial modification. Instead of beginning with an A-horizon or plow zone, the first soil encountered was a silty soil with pebbles. This poorly drained soil upper soil was recovered across the project area. In some parts of the project area, a soil with high kaolin-like clay content underlay the silty soil. Neither of these soils would have been deposited in areas where people in the historic or prehistoric periods were living. Poorly drained silty and clayey soils make for difficult walking and collect water following rains. The well-drained sandy soils of Southern Staten Island contain several archaeological sites (Skinner 1909); very few archaeological sites are known from poorly-drained soils. Typical stratigraphic profiles for southern Staten Island start with medium to fine-grained wind-blown silty sands deposited over more fine-grained silty soils, followed by fine clays or glacially deposited soils with large clasts. The soils encountered in the Phase IB survey reveal a consistent lack of the upper, coarser-grained sands. Instead, the exposed surface is one that was deposited thousands of years ago as the last glaciers were retreating northward, depositing meltwater off their surfaces and fine grained silts along their leading edges.

The one trench excavated in the Phase IB survey also revealed a lack of a typical soil profile. Excavated near to STP A5, the trench measured 9.5-meters long and 1-meter wide, running NNE-SSW. This trench was excavated here as STP A5 uncovered deep darker soils (10YR4/3) at a depth of 36-98 centimeters. These dark soils appeared to represent the typical A-horizon. Additionally, STP A4 through A7 were located along the edge of an old dirt road. Although this road has been overgrown by weeds and trees, two ruts in the road were still apparent. It was believed that this dirt road bed could date to the time when the Kreischer's occupied the adjacent land. As shown in Figure 7, a dirt path existed along the northern edge of the project area. Although no artifacts were recovered from STP A5, the trench was excavated to investigate the extent of the historic road and the stratigraphy underling the road. The backhoe trench exposed dark brown soils (10YR4/3) to a depth of 1.2-meters below the surface. Underneath these dark brown soils, the trench exposed the kaolin clays found elsewhere in the project area. Once these kaolin clays were exposed, the trench excavation was terminated.


PROJECT BOUNDARY
A4
A6
A9
A10
A11
A10/11
B7
B10
D6
D7
C11
E2
E3
E6
D9
D10
D11
E7
E9
E10
E12
G1
H1
H2
F10
F11
F12
H10
H12
H13
G16
H16
H17
H18
I13
I16
J11
J12
J13
J15
K12
I18
J18
100 0 100 200 300 400 Meters
KEY
Shovel Test Pits - Result
Historic
Negative
Trees
All-Terrain Vehicle Paths
Project Area
N
W
E
S
TITLE:
FIGURE 10 - LOCATION OF POSITIVE STP'S ACROSS THE PROPOSED NYCT BUS MAINTENANCE FACILITY.
CLIENT:
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DATE:
OCTOBER 2001
LOCATION:
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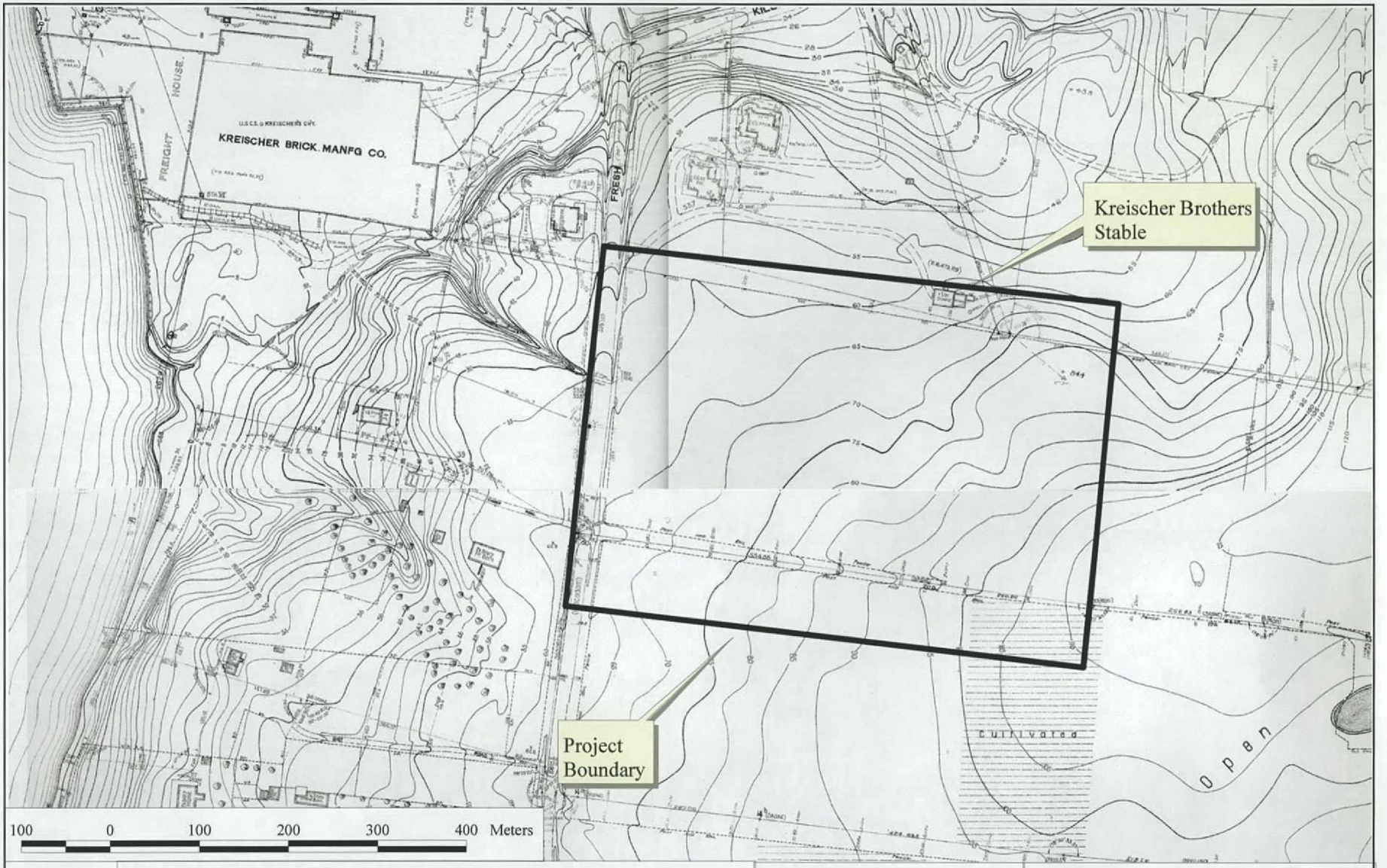
The trench and STP stratigraphy suggest the project area's landscape has been subjected to a high degree of modification over time. The presence of recent historic period ceramics and glass suggests the upper A-horizon had been striped away, either through recent erosion or by recent landscaping activities. The entire project area has seen little development over the historic period. In fact, the majority of the parcel has never even had a structure on it. It cannot be expected that the removal of the upper soils occurred in the historic period. Instead, it is most likely that the upper soils were removed in the latter portion of the 20th century as housing development began to increase in southern Staten Island. In fact, geologists studying the stratigraphy of southern Staten Island lamented the encroachment seen by landscaping firms and the commercial brick industry in New Jersey (Wasserman, *et al.* 1974:29). Several landscaping firms selling clean soil fill currently exist along Arthur Kill Road and could also account for the missing upper soils. However the project area lost its upper soils, once these soils were removed, all intact archaeological deposits were lost.

The only place where historic period archaeological material was recovered near to areas where activities took place was in the vicinity of STP's A10 through A11. At this place in the project area, a significant change in vegetation was noticed, shifting from green briar brambles and young tree saplings to almost exclusively broad leafed bamboo. The topography of this area is quite uneven and full of small holes. There are several large pieces of wood timbers lying parallel to the surface, interspersed with exposed brick and mortar (Plate 2). Underneath the timbers are empty holes lacking sediment and vegetation. Artifacts recovered from the surface include a glass milk bottle with a *terminus post quem* (earliest date of manufacture) of 1889 (Jones & Sullivan 1985:39), a brass, draft horse bit and some clam shell fragments. Also, a brick with an incomplete manufacturer's mark of "& F" was collected from the surface. The complete maker's mark (S&F) was used by the Sayre & Fisher Brick Company of Sayerville, NJ, manufacturer's of building bricks in the early 20th century (Gurcke 1987:292-293). The rest of the bricks within the exposed brick and mortar also possessed the "S & F" maker's mark. STP's excavated in this bamboo-vegetated area recovered small amounts of historic archaeological material, including window glass, building material fragments and brick fragments.

The entire collection of surface and below-ground historical archaeological resources, viewed in the context of a highly irregular surface with an invader vegetative species, points to a an area where building material had been dumped or a prior building had collapsed after falling into disrepair. The former possibility cannot be entirely ruled out, though historic period documents suggest the archaeological material recovered from this area may derive from a stable associated with the Charles and Edward Kreischer houses. The 1913 *Borough of Richmond Topographic Surveys* show a one and a half story stable near to the location of STP's A10-A11 (Figure 11). The Borough Survey also indicates a dirt path linking the stable to the Charles and Edward Kreischer houses. The stable is also depicted in the background of an 1887 lithograph of the Kreischerville area (Figure 12). The project area is indicated by the heavily wooded area, with the stable at the northern edge of the parcel. Prior to 1887, the two Kreischer son houses did not exist, setting the earliest date for the stable at 1887. The stable may have been reconstructed or repaired with bricks from the Sayer & Fischer company in the early 20th century. Because the position of the stable on two historic period documents coincides with the position of the historic period building material, it is most likely that the recovered archaeological material at STP's A10-A11 resulted from the collapse of the Charles and Edward Kreischer stable, constructed around 1887.

In summary, the areas investigated by the STP's and the backhoe excavated trench indicate the project area has been greatly modified through recent landscaping activities. The only area found to contain material



TITLE:
FIGURE 11 - 1913 TOPOGRAPHIC SURVEY OF THE PROJECT AREA

SOURCE:	CLIENT:	DATE:
BOROUGH OF RICHMOND 1913	NEW YORK CITY TRANSIT	OCTOBER 2001

LOCATION:
4700 ARTHUR KILL ROAD,
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RICHMOND COUNTY,
NEW YORK

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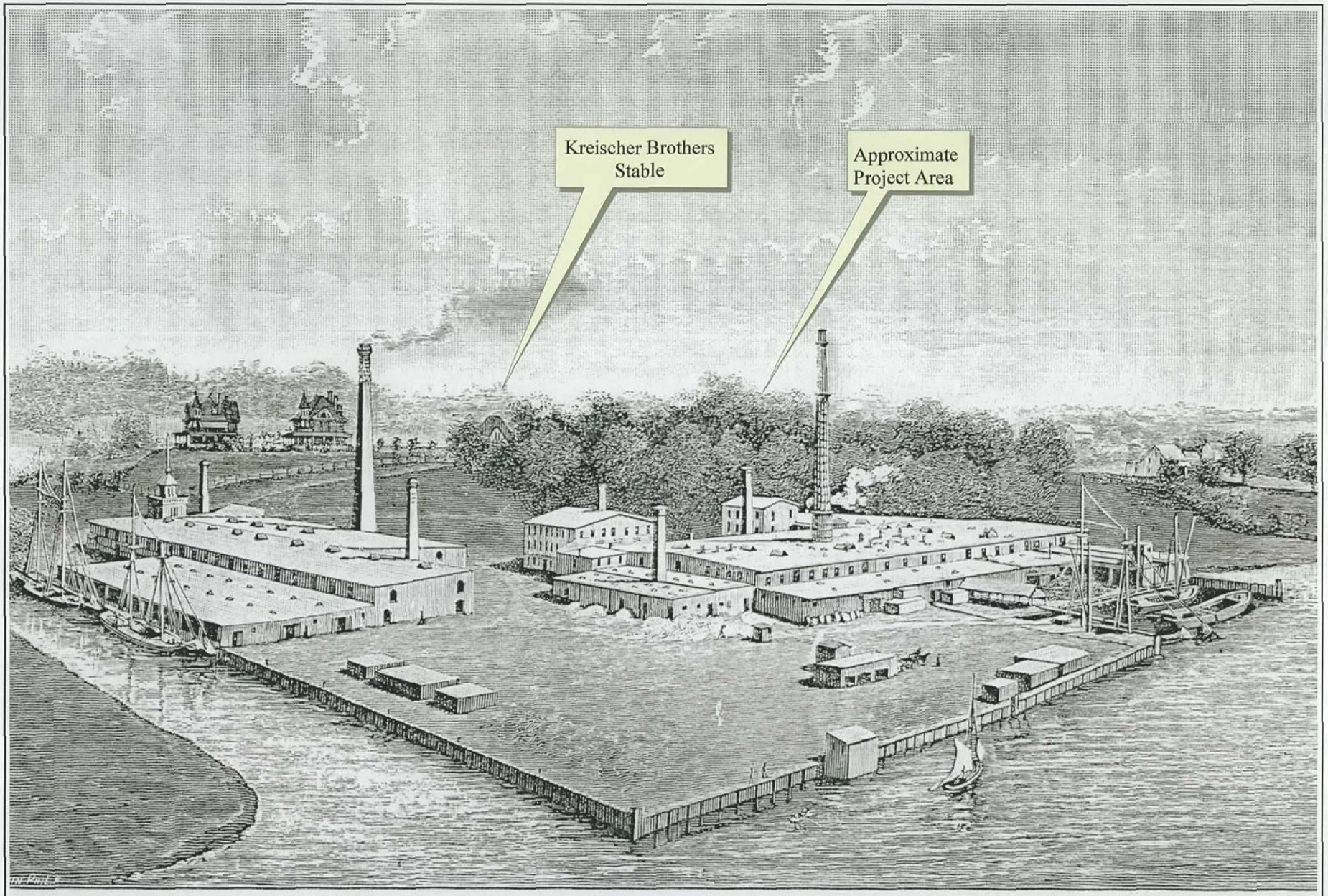

FIRE-BRICK WORKS OF B. KREISCHER & SONS,

TITLE: FIGURE 12 - KREISCHER BRICKWORKS FACTORY WITH KREISCHER BROTHER ESTATES AND STABLE IN BACKGROUND			LOCATION: 4700 ARTHUR KILL ROAD, STATEN ISLAND, RICHMOND COUNTY, NEW YORK
SOURCE: BAYLES 1887	CLIENT: NEW YORK CITY TRANSIT	DATE: OCTOBER 2001	THE LOUIS BERGER GROUP, INC. 120 HALSTED STREET EAST ORANGE, NJ 07018 www.LouisBerger.com

resulting from historic period activities was the remnants of a stable associated with the late 19th and early 20th century Kreischer brother houses. Portions of a brick and mortar wall were recovered, along with a draft horse bit. The historic period material accumulated most likely on the spot as a result of the collapse of the stable after the demise of the Kreischerville area. Except for the area of the collapsed stable, the project area was found to contain a disturbed stratigraphic sequence.

VI. RECOMMENDATIONS

A Phase IB archaeological survey has been conducted for a proposed New York City Transit Department of Buses storage and maintenance facility at 4700 Arthur Kill Road. Subsurface testing was performed across the entire 11-acre parcel. 191 STP's and 1 backhoe trench were excavated by a team of professional field technicians.

This survey revealed a high degree of disturbance across nearly the entirety of the project area. Subsurface excavations did not uncover the typical soil profiles formed through natural geological processes seen in other parts of southern Staten Island. The project area appears to have been subjected to extensive landscaping and modification over the last century, such that any intact archaeological deposits have been removed. Only one area revealed historic period artifacts in close to primary context. This area, the location of the collapsed Kreischer brother's stable, exhibited building material and historic period artifacts typical of a stable or similar structure. The fact that these artifacts were discovered close to the surface and the lack of below ground integrity to the collapsed stable deposits indicates no potential to recover intact archaeological deposits. As a result of the Phase IB survey, no further archaeological investigations are recommended for future below ground modifications to the areas tested.

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Arthur Kill Road - Shovel Test Profiles

Stp No: A-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-6	10YR3/1	humus		X			humic layer
6-33	10YR4/3	silty sand		X			
33-70	7.5YR5/6	sandy silt		X			kaolin inclusions

Stp No: A-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-30	7.5YR4/6	sandy silt		X			kaolin inclusions

Stp No: A-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-5	10YR3/1	humus		X			humic layer
5-15	10YR4/3	silty sand		X			
15-55	7.5YR4/6	sandy silt		X			kaolin inclusions

Stp No: A-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-30	10YR3/1	silty sand				X	field# 1 = 1 whiteware sherd
30-75	10YR4/3	sandy silt		X			
75-87	10YR5/1	silt loam		X			

Stp No: A-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-6	10YR3/1	not recorded		X			
6-17	10YR4/3	silt loam				X	modern glass (discarded in field)
17-36	7.5YR4/6	silt loam		X			
36-98	10YR4/3	silt loam				X	modern glass & iron (discarded in field)

Stp No: A-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-40	10YR4/4	silty clay loam				X	field# 2 historic = 9 ceramics
40-48	5YR4/4	clayey loam		X			

Stp No: A-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-34	2.5YR4/6	sand		X			no PZ
34-42	2.5YR3/6,2.5YR4/1,5YR5/8	clay		X			mottled soil

Stp No: A-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-10	5YR5/6	clayey loam		X			leaf litter/roots; no PZ
10-41	5YR4/6	clay		X			

Stp No: A-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-48	10YR4/4	silty clay loam	gravel			X	field# 3 historic = 4 ceramics; few to no gravel

Stp No: A-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-48	10YR4/4	silty clay loam	gravel			X	field# 4 historic = 2 glass, 1 brick; non-diagnostic discarded; few to no gravel

Stp No: A-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-51	10YR4/4,2.5YR4/4	silty clay loam				X	field# 7 historic(4) = glass and ceramics; mottled soil 10YR4/4 w/pocket of 2.5YR4/4

Stp No: A-10/11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-51	10YR3/2,5YR5/6	loam				X	field# 5 historic = 1 ceramic, 1 brick, & 1 shell; non-diagnostic glass discarded; mottled soil

Stp No: A-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-46	10YR4/4	sandy loam		X			

Stp No: A-13

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-11	2.5YR4/6	clay		X			
11-21	2.5YR3/4	clay		X			
21-40	2.5YR7/1,2.5YR3/6	clay		X			mottled soil

Stp No: A-14

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-17	10YR3/2	clayey loam		X			
17-26	10YR4/4	clayey loam		X			
26-48	5YR4/6	clay		X			

Stp No: A-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-9	10YR3/1	silt loam		X			
9-36	5YR4/6	sandy loam		X			
36-44	10YR3/2	clay		X			

Stp No: A-16

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-10	10YR2/1	loam		X			
10-29	10YR3/2	silty clay loam		X			
29-46	7.5YR5/6	loamy sand		X			

Stp No: A-17

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-18	10YR4/1	loamy sand		X			
18-41	10YR5/4	sandy loam		X			

Stp No: A-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-13	not recorded	loam		X			
13-24	7.5YR3/4	silt loam		X			
24-45	7.5YR5/4	sandy loam		X			iron ore deposits

Stp No: B-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-14	7.5YR2.5/1	loam		X			
14-45	7.5YR3/4	silt loam				X	modern glass (discarded)
45-62	2.5YR4/6	silty clay loam		X			

Stp No: B-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-6	5YR4/3	sandy loam		X			
6-17	5YR4/6	clayey loam		X			
17-34	7.5YR5/6	clayey loam		X			
34-46	2.5YR4/6	silty clay		X			

Stp No: B-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-15	5YR4/6	silty clay		X			

Stp No: B-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
15-45	2.5YR3/4	silty clay		X			

Stp No: B-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-17	7.5YR4/3	sandy clay		X			
17-37	7.5YR4/6	silty clay		X			
37-51	2.5YR4/6,2.5YR7/1	silty clay		X			mottled soil

Stp No: B-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-46	5YR4/4	sandy clay		X			
46-58	2.5YR4/6,2.5YR7/1	silty clay		X			mottled soil

Stp No: B-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-43	5YR4/4	clayey loam		X			
43-61	2.5YR4/4	silty clay loam		X			

Stp No: B-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-27	2.5YR4/6	silty clay loam				X	field# 8 historic = glass, whiteware, salt glz. stoneware
27-43	2.5YR4/4,2.5YR8/1	clayey loam		X			mottled soil

Stp No: B-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-41	2.5YR4/6,2.5YR7/1	silty clay loam		X			mottled soil

Stp No: B-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-29	5YR4/6	clayey loam		X			
29-45	2.5YR4/6,2.5YR6/4	silty clay loam		X			mottled soil

Stp No: B-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-41	7.5YR4/4	clay				X	field# 9 historic = redware
41-66	7.5YR4/6	silty clay		X			possible fill

Stp No: B-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-17	5YR4/6	clayey loam		X			offset 1 1/2m
17-36	2.5YR3/6	silty clay loam		X			

Stp No: B-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-26	5YR5/6	silty clay loam		X			offset 1m.; roots underlay
26-43	2.5YR3/6	silty clay loam		X			

Stp No: B-13

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-27	2.5YR5/6	silty clay		X			
27-50	2.5YR3/6,2.5YR6/1	silt loam		X			mottled soil

Stp No: B-14

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-45	10YR3/3	silt loam		X			
45-65	10YR4/4	silt loam		X			

Stp No: B-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-48	5YR4/4	sandy loam		X			
48-63	5YR3/2	silt loam		X			

Stp No: B-16

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-34	7.5YR3/4	sandy loam		X			
34-60	7.5YR4/6	silt loam		X			

Stp No: B-17

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-17	7.5YR3/2	sand		X			
17-71	7.5YR6/6	sand		X			

Stp No: B-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-23	7.5YR3/4	loam		X			
23-40	7.5YR6/4	medium sand		X			

Stp No: B-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
40-55	7.5YR6/6	fine sand		X			

Stp No: C-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-40	10YR2/2	sand				X	not true PZ; mixed w/ humus, fill; large amount of modern trash discarded in field

Stp No: C-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-5	7.5YR5/4	silt				X	modern glass - discarded
5-15	7.5YR6/6	silty clay	20% gravel	X			
15-30	7.5YR6/2, 7.5YR4/4	silty clay		X			mottled soil

Stp No: C-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-7	5YR4/4	silt	gravel	X			rocky
7-24	5YR5/6	clayey loam		X			
24-33	5YR6/4,5YR4/6,7.5YR5/8	clayey loam over loamy sand		X			mottled soil

Stp No: C-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-7	7.5YR5/2	silt loam		X			offset 3m. SE
7-24	7.5YR6/4	silty clay		X			
24-40	7.5YR6/6	silty clay		X			

Stp No: C-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-13	7.5YR3/2	loam		X			offset 1m NW; rooty humus
13-26	7.5YR5/4	silty clay		X			
26-42	7.5YR5/6	silty clay		X			sand deposits sporadic

Stp No: C-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-9	not recorded	loamy silt		X			offset 1m. SW; heavy vegetation
9-25	7.5YR5/2	silty clay		X			
25-38	7.5YR6/4	sandy clay loam		X			watertable

Stp No: C-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-24	7.5YR4/4	silty clay		X			
24-43	7.5YR6/2,7.5YR6/8,7.5YR5/4	loamy sand		X			mottled soil

Stp No: C-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-9	not recorded	sandy loam		X			very rooty 35%
9-28	7.5YR5/4,7.5YR5/2,7.5YR5/6	sandy clay loam		X			mottled soil

Stp No: C-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-25	7.5YR5/2	silt loam		X			
25-44	7.5YR6/4	silty clay		X			

Stp No: C-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-16	not recorded	loam		X			
16-33	7.5YR5/4	silty clay		X			
33-45	7.5YR5/6	sandy loam		X			

Stp No: C-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-10	7.5YR6/4	silt loam				X	field# 11 historic = 2 ceramics
10-27	7.5YR5/4	silty clay		X			
27-39	7.5YR5/6,7.5YR6/4	silty clay		X			mottled soil

Stp No: C-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-5	not recorded	silt loam		X			offset 4m. E
5-16	7.5YR5/4	silty sand		X			
16-43	7.5YR6/6	medium sand		X			

Stp No: C-13

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-4	not recorded	silt loam		X			
4-22	7.5YR5/2	medium sand		X			
22-36	7.5YR6/4	fine sand		X			

Stp No: C-14

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-10	7.5YR3/4	silt loam		X			
10-20	7.5YR4/4	sandy loam		X			
20-41	7.5YR5/6	sandy clay		X			

Stp No: C-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-17	7.5YR4/4	sandy loam		X			offset 2.5m. SE
17-30	7.5YR6/8	medium sand		X			
30-43	7.5YR7/8	fine sand	20% gravel	X			

Stp No: C-16

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-12	7.5YR3/2	silt loam					
12-26	7.5YR5/2	sandy loam					
26-51	7.5YR5/6	medium sand					

Stp No: C-17

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-12	not recorded	loamy sand		X			
12-27	7.5YR5/4	sandy clay loam		X			
27-33	7.5YR6/6	sandy clay		X			large cobble

Stp No: C-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-7	not recorded	silt loam		X			offset 2m. SE
7-30	7.5YR4/4	silty clay			X		stone flake
30-39	7.5YR3/4	sandy clay				X	non-cultural discards.

Stp No: D-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-23	not recorded	not recorded		X			fill
23-34	10YR3/4	sandy loam				X	field# 12 - 1 ceramic, modern glass(discarded)
34-50	5YR3/4,10YR3/4	sandy clay loam		X			mottled soil

Stp No: D-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-36	10YR3/3	silty clay loam				X	PZ - historic non-cultural (discarded)

Stp No: D-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
36-60	5YR4/6,5YR6/1	clayey loam	gravel	X			a true C strat; low gravel; mottled soil

Stp No: D-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-16	10YR4/4,5YR5/8	silt loam		X			mottled soil
16-47	5YR5/8	clayey loam		X			
47-65	5YR5/8,5YR7/1	clayey loam		X			mottled soil

Stp No: D-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-24	5YR5/8	clayey loam		X			
24-45	5YR5/8,5YR7/1	clayey loam		X			mottled soil

Stp No: D-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-25	5YR5/8	silty clay loam	gravel	X			low gravel
25-43	5YR4/4	clayey loam		X			

Stp No: D-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-23	2.5YR4/6	clayey loam				X	field# 13 historic = glass, prehist. (non-cultural)
23-36	2.5YR4/6	clayey loam		X			
36-50	2.5YR4/6,2.5YR6/1	clayey loam		X			mottled soil

Stp No: D-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-39	5YR3/3	clayey loam	cobble			X	field# 14 historic = 1 ceramic; true B strat; low cobble
39-57	2.5YR4/6,2.5YR6/1	clayey loam		X			true C strat; mottled soil

Stp No: D-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-30	2.5YR4/6,2.5YR6/1	clayey loam		X			mottled soil; no true PZ

Stp No: D-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-10	10YR3/4	silty clay loam				X	field# 15 historic= 4 plateware

Stp No: D-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
10-37	5YR4/6	clayey loam		X			
37-50	5YR4/6,5YR7/1	clayey loam		X			mottled soil

Stp No: D-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-28	10YR4/3	silty clay loam				X	field# 16 historic= 5 ceramics, 1 glass
28-50	5YR3/3	loamy clay				X	field# 17 = historic/arch. (4)
50-57	5YR4/4	clayey loam		X			

Stp No: D-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-13	10YR4/3	silty clay loam		X			leaf litter & roots
13-40	5YR4/6	clayey loam				X	field# 18 historic = 2 ceramics
40-47	5YR4/6,5YR7/1	clay		X			mottled soil

Stp No: D-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-12	10YR3/3	silt loam		X			
12-27	2.5YR4/6	clayey loam				X	non-cultural finds (discarded)
27-41	5YR4/4	clayey loam		X			

Stp No: D-13

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-30	2.5YR4/4	clayey loam		X			no top soil, no PZ - true B or C strat.

Stp No: D-14

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-49	10YR3/3	silty clay loam		X			

Stp No: D-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-31	10YR4/3	silt loam		X			
31-42	10YR4/4	silty clay loam		X			

Stp No: D-16

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-45	2.5YR4/6	clayey loam	gravel	X			some gravel; no PZ

Stp No: D-17

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-59	5YR5/8,5YR4/6	fine sand/coarse sand		X			mottled soil; fine sand at top over coarse sand at bottom

Stp No: D-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-24	7.5YR2.5/1	silt loam		X			
24-61	5YR3/4	silt loam		X			

Stp No: E-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-40	10YR4/6	silt loam		X			gradual boundary
40-50	5YR4/6,5YR6/4	silty clay loam				X	modern glass (discarded)

Stp No: E-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-19	10YR4/3	silt loam		X			PZ; distinct boundary
19-40	10YR4/6	silt loam	<1% gravel			X	field# 19 historic = metal; clear boundary
40-60	5YR4/6,(10%)5YR6/4	silty clay loam		X			mottled soil

Stp No: E-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-28	10YR4/3	silt loam	<1% gravel	X			clear boundary
28-53	5YR4/6,5YR6/4	silty clay loam	10% gravel & <1%cobbles			X	field# 20 historic= (4) (stoneware, glass)

Stp No: E-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-17	10YR5/4	silt loam	<2% gravel	X			rounded gravel; distinct boundary
17-40	5YR5/6,5YR6/4	silty clay loam	10% gravel	X			mottled soil; rounded gravel; low area; water seepage was extensive

Stp No: E-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-20	10YR5/4	silty clay loam	<5% pebbles	X			rounded pebbles; distinct boundary
20-40	5YR5/6	clay	10% pebbles	X			rounded pebbles; low area; water seepage was extensive

Stp No: E-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-7	10YR5/4	silty clay loam	3% gravel			X	field# 21 historic= 1 glass, 1 ceramic; rounded gravel; distinct boundary
7-30	5YR5/6	clay	10% gravel	X			rounded gravel

Stp No: E-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-10	10YR5/4	silt loam	10% pebbles	X			rounded pebbles; distinct boundary
10-40	5YR5/6,5YR6/4	clay	20% pebbles			X	field# 22 historic= 3 glass, 3 ceramics; B strat; rounded pebbles; mottled soil

Stp No: E-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-30	5YR5/6,5YR6/4	clay	20% gravel	X			heavily disturbed; C horizon, no PZ, no B strat.

Stp No: E-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
	10YR5/4	silt loam	10% pebbles			X	field# 23 historic= 2 ceramics; rounded pebbles; no PZ; distinct boundary; no depth recorded
	5YR5/6,5YR6/4	clay	<1% gravel	X			no depth recorded; C-horizon; mottled soil

Stp No: E-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-20	7.5YR5/4	silty clay			X		field# 24 = 4 pottery frags.
20-44	7.5YR6/6	silty clay		X			

Stp No: E-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-8	not recorded	loam		X			offset 3m. N
8-29	7.5YR5/4	clay		X			
29-41	7.5YR5/2,7.5YR5/4	silty clay		X			mottled soil

Stp No: E-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-21	7.5YR4/6,7.5YR3/4	clay				X	field# 25 = 1 pottery found
21-38	7.5YR4/6	silty clay		X			

Stp No: E-13

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-10	7.5YR3/4	silty clay		X			
10-45	7.5YR4/6,7.5YR4/4	silty clay		X			red clay deposits

Stp No: E-14

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-20	7.5YR4/6	clay	gravel	X			surface gravel
20-35	7.5YR3/4	sandy clay		X			

Stp No: E-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-9	not recorded	loam		X			
9-28	7.5YR4/6,7.5YR5/2	silty clay		X			mottled soil
28-51	7.5YR5/8	sandy clay		X			

Stp No: E-16

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-20	7.5YR5/4	sandy silt	gravel	X			surface gravel
20-42	7.5YR5/6	coarse sand		X			

Stp No: E-17

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-7	7.5YR3/4	silt loam		X			
7-39	7.5YR4/4	silty clay		X			
39-48	7.5YR5/4	sandy clay	10% gravel	X			

Stp No: E-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-8	7.5YR4/2	silt loam		X			offset 1m. N
8-25	7.5YR6/4	silty clay		X			large stone
25-39	not recorded	silty clay		X			soil color not recorded

Stp No: F-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-15	7.5YR2.5/1	sandy loam		X			offset 1m. from road; fill
15-37	7.5YR3/4	sand		X			

Stp No: F-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-11	not recorded	not recorded		X			
11-27	7.5YR4/2	not recorded		X			
27-46	7.5YR5/4	not recorded		X			

Stp No: F-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-12	5YR2.5/1	silt loam		X			
12-61	7.5YR4/4	clayey loam		X			

Stp No: F-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-14	7.5YR3/1	silty clay loam		X			
14-65	7.5YR3/4	silty clay loam		X			

Stp No: F-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-20	7.5YR4/3	silty clay loam		X			
20-45	7.5YR4/4	clayey loam		X			
45-61	5YR5/8	silt loam		X			

Stp No: F-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-19	7.5YR4/2	silty clay		X			
19-49	10YR4/6	clayey loam		X			
49-60	5YR4/6,5YR6/1	silty clay loam		X			mottled soil

Stp No: F-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-13	7.5YR4/4	silty clay		X			
13-32	7.5YR4/6	silty clay loam		X			
32-52	5YR4/6	silt		X			

Stp No: F-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-17	5YR4/3	silty clay loam		X			
17-35	2.5YR4/4	silty clay		X			
35-50	2.5YR5/4,2.5YR7/1	silty clay		X			mottled soil

Stp No: F-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-7	7.5YR2.5/1	loam		X			
7-44	7.5YR4/3	silty clay		X			
44-55	7.5YR5/6	silty clay		X			
55-68	5YR4/6	silty clay		X			

Stp No: F-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-15	10YR5/4	silt loam	5% pebbles			X	field# 26 historic= 3 ceramics, 3 modern glass [discarded]); rounded pebbles; distinct boundary
15-40	5YR5/6,5YR6/4	clay	10% pebbles	X			C-horizon; mottled soil; rounded pebbles

Stp No: F-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-56	10YR5/4	silt loam	< 5% pebbles			X	field# 27 historic=3 (glass); rounded pebbles; gradual boundary
56-78	10YR4/3	silt loam	2% pebbles	X			B-horizon; rounded pebbles

Stp No: F-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-5	10YR5/4	silt loam	< 5% pebbles			X	field# 28 historic=1 (ceramic); rounded pebbles; distinct boundary
5-30	5YR5/6,5YR6/4	clay	1% pebbles	X			mottled soil; rounded pebbles

Stp No: F-13

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-28	10YR5/4	silt loam	5% pebbles	X			rounded pebbles; vague boundary
28-51	5YR5/6	clayey loam	< 1% pebbles	X			rounded pebbles

Stp No: F-14

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-17	10YR5/4	silt loam	<15% pebbles	X			rounded pebbles; clear boundary
17-31	5YR5/6	silty clay loam	25% pebbles	X			rounded pebbles; C-horizon

Stp No: F-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-20	5YR4/3	loamy sand	25% gravel	X			fill; rounded gravels; clear boundary
20-45	10YR4/3	silt loam	15% pebbles	X			A-horizon; rounded pebbles; vague boundary
45-68	5YR5/6	silty clay loam	>1% pebbles	X			B-horizon; rounded pebbles; gradual boundary

Stp No: F-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
68-74	5YR4/6	clay	>1% pebbles	X			C-horizon; rounded pebbles

Stp No: F-16

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-58	5YR4/3	sand	20% gravels	X			offset 4m. E; fill; rounded gravels; distinct boundary
58-120	5YR5/8	sand	15% pebbles	X			A-horizon; rounded pebbles

Stp No: F-17

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-50	10YR4/3	silt loam	25% pebbles	X			offset 2m E; A-horizon; rounded pebbles; clear boundary
50-65	5YR4/6	clay	15% pebbles	X			C-horizon; rounded pebbles

Stp No: F-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-12	7.5YR2.5/1	loam		X			
12-27	7.5YR4/6	silt loam		X			
27-65	5YR5/6	silty clay		X			

Stp No: G-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-33	10YR4/6	silt loam				X	field# 10 historic (1 ceramic), modern glass (discarded); fill
33-63	5YR4/6,(40%)5YR6/4	silty clay loam		X			mottled soil; probably fill

Stp No: G-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-20	7.5YR4/4	silt loam		X			
20-47	7.5YR4/6	sandy clay loam		X			watertable @ 48cm.

Stp No: G-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-14	7.5YR2.5/1	silt loam		X			
14-55	7.5YR3/3	silt loam		X			
55-64	7.5YR4/6	clayey silt		X			

Stp No: G-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-12	7.5YR2.5/1	loam		X			
12-61	7.5YR4/6	clayey loam		X			

Stp No: G-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-36	7.5YR3/2	silt loam		X			
36-60	7.5YR4/4	silty clay loam		X			

Stp No: G-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-13	7.5YR2.5/1	silt		X			
13-47	7.5YR4/4	silty clay loam		X			
47-63	7.5YR5/8	silty clay		X			

Stp No: G-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-41	5YR5/6	loamy sand over loamy clay		X			no PZ

Stp No: G-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-25	2.5YR5/8	loam		X			
25-35	2.5YR4/6	loamy clay		X			

Stp No: G-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-25	2.5YR4/6	sandy loam		X			no PZ; true C ?

Stp No: G-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-25	5YR5/6	silt loam		X			no PZ
25-42	2.5YR4/6	sandy loam		X			

Stp No: G-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-17	7.5YR4/6	loamy sand		X			
17-36	5YR4/6	clayey loamy sand		X			

Stp No: G-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-27	7.5YR4/6	loam		X			
27-43	5YR4/6	loam		X			

Stp No: G-13

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-43	10YR4/4	silty clay loam	10% pebbles	X			rounded pebbles; gradual boundary
43-60	5YR4/6	clay	5% pebbles	X			rounded pebbles

Stp No: G-14

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-6	5YR4/3	loamy sand	15% pebbles	X			rounded pebbles; clear boundary
6-31	5YR4/6,5YR6/4	clay	30% pebbles	X			rounded pebbles; C-horizon

Stp No: G-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-23	5YR4/6,5YR6/4	clay	10% gravel	X			mottled soil; heavily disturbed area; C-horizon; lacking A & B horizons

Stp No: G-16

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-10	5YR4/3	loamy sand	20% gravel/pebbles	X			rounded pebbles; distinct boundary
10-31	5YR4/6,(40%)5YR6/4	clay	20% pebbles			X	field# 29 historic= 1 glass; C-horizon; mottled soil

Stp No: G-17

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-20	5YR2.5/1	loamy sand	5% gravel	X			A-horizon; clear boundary
20-30	5YR4/6,(40%)5YR6/4	clay	<5% gravel	X			C-horizon

Stp No: G-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-23	10YR3/1	silt loam		X			
23-46	10YR4/4	silt loam		X			

Stp No: H-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-29	7.5YR4/6	sandy loam				X	field# 30 historic=3

Stp No: H-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
29-50	7.5YR4/4	sandy loam		X			

Stp No: H-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-47	7.5YR4/6	loamy sand				X	field# 31 historic=4; not true PZ ?

Stp No: H-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-47	5YR4/6,5YR3/2	loamy sand		X			mottled soil

Stp No: H-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-30	5YR4/6,5YR3/2	loamy sand				X	non-cultural stone; modern glass (discarded); mottled soil
30-46	7.5YR4/6	loamy sand over clay		X			

Stp No: H-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-30	5YR4/6	loamy clay		X			no PZ

Stp No: H-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-30	5YR4/6	loam		X			no PZ

Stp No: H-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-32	2.5YR3/6,2.5YR6/1	loamy clay		X			no PZ ?; mottled soil

Stp No: H-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-35	2.5YR4/4	sandy loam		X			not true PZ

Stp No: H-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-13	10YR2/1	loamy silt		X			humic layer
13-30	5YR4/4	loam		X			

Stp No: H-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-7	10YR2/1	silt loam		X			humic layer
7-17	7.5YR5/3	loam				X	field# 32 historic = 2 finds
17-30	2.5YR4/6	loam		X			

Stp No: H-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-5	10YR2/1	loamy silt		X			humic layer; not true PZ
5-19	7.5YR4/4	loam		X			
19-38	5YR3/4	loamy sand		X			

Stp No: H-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-24	7.5YR4/4	loam				X	field# 33 historic= 4 finds
24-50	2.5YR4/6	loamy clay		X			

Stp No: H-13

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-12	5YR4/3	loamy sand	20% gravel/pebble	X			offset 2m. to the N; distinct boundary; B-horizon
12-30	5YR4/6,(5%)5YR6/4	clay	25% pebbles			X	field# 34 historic=1 ceramic; C-horizon; mottled soil; rounded pebbles

Stp No: H-14

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-11	5YR4/3	loamy sand	20% gravel/pebble	X			offset 4m. E; B-horizon; distinct boundary
11-29	5YR4/6,(5%)5YR6/4,7.5YR4/6	clay over sand	20% pebbles	X			C-horizon; mottled soil; rounded pebbles; lens at 15cm (7.5YR4/6)

Stp No: H-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-35	5YR4/3	loamy sand	20% gravel/pebble	X			B-horizon; distinct boundary
35-46	5YR4/6,(5%)5YR6/4	clay	15% pebbles	X			C-horizon; mottled soil; rounded pebbles

Stp No: H-16

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-30	5YR4/6	loamy sand	<5% pebbles			X	field# 35 historic=4 (3 glass[sampled], 1 ceramic); fill layer; rounded pebbles
30-37	5YR2.5/1	loamy sand	<5% pebbles	X			B-horizon; rounded pebbles
37-62	5YR4/6,(40%)5YR6/4	clay	<5% pebbles	X			C-horizon; rounded pebbles

Stp No: H-17

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
	5YR4/3	silt loam	10% pebbles			X	field# 36 historic=2 ceramics; B-horizon; rounded pebbles; distinct boundary'; no depth recorded
	5YR4/6	clay	5% pebbles	X			C-horizon; rounded pebbles; no depth recorded

Stp No: H-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-27	5YR3/3	loam				X	field# 37 historic=5 (4 ceramics, 1 glass)
27-53	5YR4/6	loam		X			

Stp No: I-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-27	7.5YR5/4	silt loam		X			

Stp No: I-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-7	7.5YR5/2	silty clay loam		X			
7-25	2.5YR4/4	clay		X			

Stp No: I-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-22	7.5YR3/4	silty clay loam	gravel	X			dense gravel

Stp No: I-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-12	7.5YR3/4	silt loam	gravel	X			dense gravel
12-22	7.5YR4/3	silt loam	gravel	X			dense gravel

Stp No: I-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-28	7.5YR3/4	not recorded	cobbles	X			highly disturbed rocky soil; offset 3m S

Stp No: I-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-24	7.5YR4/2	sandy clay loam		X			offset 1m. N
24-34	7.5YR5/4	sandy loam		X			watertable at 34cm.

Stp No: I-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-23	7.5YR3/4	silt loam		X			
23-50	not recorded	sand		X			water in hole; soil color not recorded completely

Stp No: I-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-20	7.5YR4/2	silt loam		X			
20-46	7.5YR5/4	sandy loam		X			

Stp No: I-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-9	7.5YR4/4	coarse sand		X			offset 1m. E
9-35	7.5YR5/4	silty clay		X			watertable at 35cm.

Stp No: I-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
	not recorded	not recorded					called off; very steep incline

Stp No: I-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-48	2.5YR4/6,2.5YR7/1	silty clay	10% cobbles	X			mottled soil

Stp No: I-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-39	5YR4/6	sandy clay	<5% pebbles	X			offset 4m. S; rounded pebbles; stp filled with water

Stp No: I-13

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-41	5YR4/6	loamy sand	10% pebbles			X	field# 38 historic= 3 glass; fill; rounded pebbles; clear boundary
41-46	5YR3/2	loamy sand		X			C-horizon; clear boundary
46-55	5YR4/6	silty clay	inclusions	X			1% siltstone & charcoal inclusions

Stp No: I-14

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-41	5YR4/6	loamy sandy silt	25% pebbles			X	fill; non-cultural faunal (crab claw) discarded; distinct, wavy boundary; rounded pebbles and 1% siltstone inclusions
41-63	10YR5/8	sandy silt	30% pebbles	X			>1% siltstone inclusions; rounded pebbles; B-horizon

Stp No: I-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-52	5YR4/6	loamy sand	15% pebbles	X			fill; round pebbles & < 1% siltstone inclusions; clear boundary
52-65	10YR5/8	sand	20% pebbles	X			rounded pebbles; B-horizon

Stp No: I-16

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-21	5YR4/6	sandy loam				X	field# 39 historic=2 (1 window gls, 1 ceramic); fill or PZ
21-42	5YR4/4	loamy sand	cobbles	X			very compact and stony C-horizon ?

Stp No: I-17

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-21	5YR4/6	sandy loam	<5% pebbles	X			fill; rounded pebbles
21-39	5YR4/4	loamy sand	10% pebbles	X			stony layer, rounded pebbles

Stp No: I-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-18	5YR4/4	sandy loam	5% pebbles			X	field# 40 historic= 1 glass, 1 ceramic, 1 shell; fill or PZ; distinct boundary; rounded pebbles
18-45	5YR4/6	loamy sand	2% rounded pebbles	X			compact layer; rounded pebbles

Stp No: J-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-18	7.5YR4/2	not recorded		X			fill
18-30	7.5YR4/4	silt loam		X			
30-41	7.5YR5/4,7.5YR7/0	silty clay loam		X			mottled soil

Stp No: J-2

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-7	7.5YR2.5/1	loam		X			
7-28	7.5YR5/8,10YR7/1	silty clay		X			mottled soil
28-49	2.5YR4/6	clay		X			hard clay pack

Stp No: J-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-15	7.5YR2.5/1	loam		X			
15-26	7.5YR3/2	silt loam		X			
26-33	5YR4/4	silty clay				X	historic=3 shell; modern cement at bottom

Stp No: J-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-17	5YR2.5/2	loam		X			
17-34	5YR4/6	clayey loam		X			
34-40	5YR5/6	clay		X			

Stp No: J-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-22	5YR5/4	sandy loam		X			
22-24	5YR4/4	silty clay		X			

Stp No: J-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-11	5YR4/3	clayey loam	gravel	X			dense gravel
11-37	5YR4/4	silt loam	gravel	X			dense gravel

Stp No: J-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-34	5YR5/6	sand		X			
34-66	7.5YR6/6	sand	20% pebbles	X			gritter; watertable

Stp No: J-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-8	2.5YR2.5/3	silt loam		X			
8-45	2.5YR4/6	sandy loam		X			
45-63	7.5YR7/1	sand		X			

Stp No: J-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-12	7.5YR3/4	loamy sand		X			offset 2m. SSE
12-32	7.5YR6/8	sand		X			
32-57	7.5YR6/8,10YR7/8	sand		X			mixed soil
57-68	7.5YR7/1	sand		X			

Stp No: J-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-10	7.5YR2.5/1	silt loam		X			offset 3m. SSE; clear boundary
10-31	5YR4/4	silt		X			clear boundary
31-48	7.5YR8/2	sand		X			clear boundary
48-55	10YR6/8	sand		X			tree root impasse

Stp No: J-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-54	7.5YR2.5/3	sandy loam				X	field# 42 historic= 4 glass, 4 ceramics; offset 3.5m. E
54-72	7.5YR6/8,7.5YR7/1	coarse sand	10% cobbles	X			

Stp No: J-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-44	7.5YR3/3	sandy loam				X	field# 43 historic= 3 ceramics, 1 glass
44-70	7.5YR5/6	silt loam		X			watertable; poss. disturbance

Stp No: J-13

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-21	5YR4/4	sandy loam				X	field# 44 historic= 3 ceramics; fill; clear boundary
21-63	7.5YR3/4	loamy sand				X	field# 45 historic= 1 ceramic, 6 shell; vague boundary
63-92	2.5YR3/4	clayey loam	5% gravel	X			

Stp No: J-14

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-19	5YR4/4	loamy sand				X	modern glass (discarded); fill (or PZ)
19-27	5YR4/6	sandy loam	gravel	X			high gravel
27-40	5YR5/6	sand	gravel	X			less gravel
40-51	5YR5/8	sand	gravel	X			high gravel

Stp No: J-15

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-35	5YR4/6	sandy loam				X	field# 46, 1 nail or wire frag., *mod. glass* (discarded); fill (or PZ)
35-53	7.5YR5/6,7.5YR4/6	sand		X			sand with lamellae (7.5YR4/6)

Stp No: J-16

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-23	5YR4/6	sandy loam		X			offset 2m. W
23-62	7.5YR5/6,7.5YR4/6	loam	high gravel & cobbles	X			sand w/lamellae (7.5YR4/6); sand appears to have been sorted; heavy gravel & cobbles

Stp No: J-17

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-15	5YR4/6	sandy loam		X			fill
15-32	5YR4/4,5YR5/8	not recorded		X			mixed soil
32-46	5YR5/8	loamy sand		X			

Stp No: J-18

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-25	7.5YR4/6	sandy loam				X	field# 47 = 1 historic ceramic; fill
25-45	7.5YR4/4,7.5YR4/2,5YR4/4	sandy loam		X			mixed soil; fill
45-57	7.5YR4/6	silt loam		X			
57-68	7.5YR5/4	sandy loam		X			

Stp No: K-1

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-12	7.5YR2.5/1	loam		X			
12-64	7.5YR3/4	sandy loam		X			watertable

Stp No: K-3

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-10	7.5YR2.5/1	loam		X			watertable

Stp No: K-4

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-15	7.5YR2.5/1	silt		X			
15-43	5YR4/4	silt loam		X			
43-61	5YR4/3	silty clay loam		X			

Stp No: K-5

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-13	7.5YR2.5/1	sandy loam		X			clear boundary
13-38	2.5YR3/6	silty clay		X			

Stp No: K-6

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-34	2.5YR3/4	silt loam	60% gravel	X			stopped due to high gravel

Stp No: K-7

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-15	7.5YR2.5/1	sand		X			
15-30	2.5YR3/6	silty clay		X			
30-42	2.5YR5/8	medium sand		X			
42-47	2.5YR3/6,2.5YR7/1	sand		X			mottled soil

Stp No: K-8

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-8	7.5YR2.5/1	sand		X			clear boundary
8-32	7.5YR4/4	sand		X			clear boundary
32-41	2.5YR3/6,2.5YR7/1	silty clay loam		X			mottled soil

Stp No: K-9

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-15	5YR4/4	sand		X			fill; clear boundary
15-46	10YR7/6	sand		X			fill; vague boundary
46-75	10YR6/8	sand		X			fill

Stp No: K-10

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-24	10YR5/6,10YR7/2	sand over silty clay		X			offset 5.5 m. W; fill; mottled soil; clear boundary
24-43	10YR6/8	sand		X			fill; clear boundary
43-62	10YR7/6	sand		X			fill; clear boundary
62-80	10YR6/8	sand		X			fill; clear boundary
80-84	10YR7/4	sand		X			fill

Stp No: K-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-30	7.5YR4/4,7.5YR3/2	sand				X	glass ware (discarded); mixed soil

Stp No: K-11

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
30-72	7.5YR4/3,2.5YR4/8	silt loam				X	plastic (discarded); mottled soil

Stp No: K-12

Depth (cm)	Munsell	Texture	Coarse	NCM	Pre	Hist	Comments
0-31	7.5YR3/2	sandy clay	2% gravel			X	field# 48 historic= 4 ceramics, glass (discarded); fill; clear boundary
31-55	7.5YR6/8	sandy clay	2% gravel				

Field #	Provenience	Description
1	STP A-4, Str. A	1pc. Handpainted polychrome pearlware, hollowware rim sherd
2	STP A-6, Str. A	5pcs. Plain whiteware body sherds 1pc. Underglaze handpainted whiteware, body sherd 1pc. Underglaze transfer-print, body sherd 1 broad window glass fragment, aquamarine, 0.6 grams
3	STP A-9, Str. A	1pc. Plain whiteware, body sherd 1pc. Gray salt-glazed stoneware, body sherd 1pc. Underglaze transfer-print whiteware, body sherd
4	STP A-10, Str. A	1 modern window glass fragment, light green, 6.4 grams 1 modern window glass fragment, aquamarine, 1.1 grams 1 earthenware architectural tile
5	STP A-10/11, Str. A	1pc. Buff salt-glazed stoneware, hollowware base sherd 1 brick fragment 1 clam shell fragment, 5.1 grams
6	Surface, Vicinity of A-10/11	1 glass jar (reinforced) straight lip fragment, machine-made, clear, 1889 TPQ (Jones & Sullivan 198:39) 1 glass bottle/jar body fragment, mold-blown, clear 1 near complete (mortared) red brick, stamped "&F" ? 1 draft horse bit, brass 1 clam shell fragment, 19.2 grams
7	STP A-11, Str. A	1 smoking pipe bowl fragment 1 modern window glass fragment, clear, 1.2 grams 2 modern window glass fragments, aquamarine, 1.2 grams
8	STP B-7, Str. A	1pc. Discolored earthenware, body sherd 1pc. Brown stoneware, discolored surface, body sherd 1 unidentified glass body fragment, clear
9	STP B-10, Str. A	1pc. Clear glaze redware, hollowware rim sherd
10	STP C-1, Str. A	1pc. Handpainted underglaze whiteware, body sherd
11	STP C-11, Str. A	1pc. Plain whiteware, body sherd 1pc Light brown stoneware, body sherd. Possibly from a bottle.
12	STP D-1, Str. B1	1pc. Burned unidentifiable earthenware, simple bands, flatware rim sherd
13	STP D-6, Str. A	1 glass bottle body fragment, olive green

14	STP D-7, Str. ?	1pc. Clear glaze redware, rim sherd
15	STP D-9, Str. A	2pcs Plain whiteware, body sherds 2pcs Handpainted underglaze whiteware, body sherds
16	STP D-10, Str. A	2pcs Plain whiteware, body sherd 1pc Plain pearlware, body sherd 1pc. Handpainted underglaze whiteware, body sherd 1pc. Underglaze transfer-print whiteware, body sherd 1 glass bottle body fragment, olive green
17	STP D-10, Str. B	1pc. Handpainted underglaze whiteware, body sherd 1pc. Underglaze transfer-print pearlware, body sherd
18	STP D-11, Str. B	1pc Whiteware, simple bands, flatware rim sherd 1pc Plain porcelain hollowware, body sherd
19	STP E-2, Str. B	1 washer
20	STP E-3, Str. B	2pcs Blue shell edged whiteware, burned, rim sherds, mendable 1pc. Plain whiteware, body sherd, burned 1 modern window glass fragment, clear, 0.2 grams
21	STP E-6, Str. A	1pc Whiteware, possible transfer print, body sherd 1 glass tumbler straight rim fragment, clear
22	STP E-7, Str. B	2pcs Plain whiteware, body sherds 1pc. Handpainted underglaze whiteware, body sherd 2 broad window glass fragments, aquamarine, 0.3 grams
23	STP E-9, Str. A	2pcs Plain whiteware, body sherds
24	STP E-10, Str. A	2pcs Plain whiteware, body sherds 2pcs Underglaze transfer-print whiteware, body sherds 1pc Plain creamware, body sherd
25	STP E-12, Str. A	1pc Buff stoneware, body sherd
26	STP F-10, Str. A	2pcs Plain whiteware, body sherds 1pc Plain creamware, body sherd
27	STP F-11, Str. A	1 glass wine/liquor bottle body fragment, olive green 2 crown/broad window glass fragments, aquamarine, 0.7 grams
28	STP F-12, Str. A	1pc Plain whiteware, body sherd
29	STP G-16, Str. B or C ?	1 glass bottle body fragment, mold-blown, clear

30	STP H-1, Str. A	1pc Plain pearlware, body sherd 1 unidentified glass body fragment, clear 1 ferrous metal fastener consisting of wire shank with d-shaped wire loop attachment.
31	STP H-2, Str. A	1pc Plain whiteware, flatware rim sherd 2 machine cut/wrought nail fragments, ferrous metal 1 complete unidentified nail, ferrous metal
32	STP H-10, Str. A	1pc Plain creamware, body sherd 1pc Plain porcelain, large handle sherd
33	STP H-12, Str. A	2pcs Plain whiteware, body sherds 1pc Plain porcelain, body sherd 1 broad window glass fragment, aquamarine, 1.8 grams
34	STP H-13, Str. B	1pc Underglaze transfer-print whiteware, body sherd
35	STP H-16, Str. A ?/Fill	1pc Plain whiteware, body sherd 3 modern window glass fragments, aquamarine, 20.0 grams
36	STP H-17, Str. B	1pc. Handpainted polychrome whiteware, hollowware rim sherd 1pc Handpainted, molded whiteware, possible handle, or finial sherd
37	STP H-18, Str. A	1pc Underglaze transfer-print whiteware, flatware rim sherd 1pc Plain porcelain, body sherd 1pc. Handpainted underglaze whiteware, body sherd 1 unidentified glass body fragment, clear
38	STP I-13, Str. A	1 glass bottle body fragment, emerald/olive green 1 unidentified glass body fragment, frosted, clear 1 modern window glass fragment, aquamarine, 0.6 grams
39	STP I-16, Str. A or Fill ?	1pc Plain whiteware, body sherd 1 modern window glass fragment, clear, 0.3 grams
40	STP I-18, Str. A or Fill?	1pc Plain whiteware, body sherd 1 crown/broad window glass fragment, aquamarine, 0.9 grams 1 oyster shell fragment, 0.1 grams
41	STP J-3, Str. C	1 smoking pipe bowl fragment 1 unidentified bone fragment 1 oyster shell fragment, 1.7 grams

42	STP J-11, Str. A/Fill	2pcs Plain whiteware, body sherds 1pc Plain creamware, body sherd 1pc Plain whiteware, flatware rim sherd 1pc. Handpainted underglaze whiteware, body sherd 2 unidentified glass body fragments, clear 2 crown/broad window glass fragments, light green, 1.4 grams
43	STP J-12, Str. A	2pcs Plain whiteware, body sherds 1pc Underglaze transfer-print whiteware, body sherd 1pc Yelloware with brown glaze, body sherd 1 modern window glass fragment, light green, 2.2 grams
44	STP J-13, Stra. Fill/A	3pcs Plain whiteware, body sherds
45	STP J-13, Str. B	1pc Plain whiteware, body sherd 6 oyster shell fragments, 8.7 grams
46	STP J-15, Str. A ?/Fill	1 machine cut/wrought nail fragment, ferrous metal
47	STP J-18, Str. Fill/A	1pc Plain whiteware, body sherd
48	STP K-12, Str. A	1pc. Clear glaze redware, rim sherd 2pcs Plain whiteware, body sherds 1 unidentified bone fragment

SUSAN D. GRZYBOWSKI
Assistant Director/Senior Archaeologist

EDUCATION

- Postgraduate study, Anthropology, State University of New York at Stony Brook, 1988-1989
- M.A., Anthropology, State University of New York at Stony Brook, 1988
- B.A., Psychology, Saint John Fisher College, 1981

PROFESSIONAL AFFILIATIONS

- Society for Industrial Archaeology (SIA)
- Vermont Archaeological Society (VAS)
- New Hampshire Archaeological Society (NHAS)

PROFESSIONAL EXPERIENCE

Ms. Grzybowski is responsible for the general management of Berger's cultural resource operations in the East Orange, New Jersey, office. She is responsible for overseeing archaeological research projects and historic preservation planning studies involving historic and prehistoric resources, as well as marketing and general business development in the Northeast and Middle Atlantic. Her regional areas of expertise include New Jersey, Pennsylvania, Vermont, New Hampshire, and southern New York State, including New York City and its surrounding boroughs, Long Island, and the lower Hudson River watershed. As project manager, her responsibilities include client and subconsultant coordination, technical oversight, financial and contractual administration, staffing and scheduling, and preparation of research proposals and cost estimates. She also plans and conducts archaeological investigations of historic and prehistoric sites, and prepares technical reports and agreement documents in compliance with Section 106 of the National Historic Preservation Act, Section 4(f) of the U.S. Department of Transportation Act, and municipal, city, and state regulations. Since joining Berger in 1989, Ms. Grzybowski's major projects have included:

- **Archaeological and Historic Architectural Investigations and Section 106 Compliance, Ridgewood Station, New Jersey.** Task Manager for the identification and evaluation of archaeological and historic architectural resources, and mitigation of adverse effects associated with the proposed improvements to the circa-1916 railroad station, which is listed in the State and National Registers of Historic Places. For New Jersey Transit.

- **Cultural Resource Screening, Historical Architectural Evaluation, and Historic Bridge Alternative Analysis, Two Bridges Road Bridge, Passaic, Morris, and Essex Counties, New Jersey.** Cultural Resource Task Manager 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 tasks involve the assessment of archaeological sensitivity, evaluation of buildings greater than 50 years of age, and assistance with the development of alternatives concerning the historically significant historic bridge structure and crossing. For the County of Passaic.

- **Cultural Resource Assessment and Phase IB Survey, Bus Storage and Maintenance Facility, Arthur Kill Road, Staten Island, New York.** Task Manager responsible for the sensitivity

assessment of historic and prehistoric resources and Phase IB survey for proposed construction of a bus depot near Arthur Kill. For New York City Transit.

- **Historic Brochure for Edison and Driscoll Bridges over Raritan River, New Jersey.** Cultural Resource Task Manager for the preparation of a historic brochure for public dissemination concerning the history, bridge design aspects, and bridge-building practices used in the construction of the 29-span continuous plate girder deck Thomas A. Edison Bridge (constructed 1939) and the 29-span Alfred E. Driscoll Bridge (constructed 1954). The Edison Bridge was one of the largest, highest, and longest span bridges of its type in the United States when completed. For the New Jersey Department of Transportation.

- **I-80 Bridges Underclearance Resolution Project, SR 0209, Section 16B and Section 017, Monroe County, Pennsylvania.** Task Manager for Phase IA archaeological assessment study and Phase I archaeological investigations associated with proposed improvements along SR 0209. For Ammann & Whitney and the Pennsylvania Department of Transportation, Engineering District 5-0.

- **Monitoring and Rehabilitation of the Colt Gun Mill Site, City of Paterson, New Jersey.** Cultural Resource Task Manager for the monitoring of debris removal activities, mapping, salvage, and rehabilitation of the 1836 Colt Gun Mill site. For the City of Paterson in conjunction with the National Park Service and New Jersey Historic Trust.

- **Cooper-Hewitt/General Electric Mercury Vapor Lamp Factory, Hudson County, New Jersey.** Project Manager for the Historic American Engineering Record documentation of the Cooper Hewitt Mercury Vapor Lamp Factory, which was associated with the manufacture of mercury vapor lamps invented by Peter Cooper Hewitt under the Cooper Hewitt Electric Company and the General Electric Vapor Lamp Company. Peter Cooper Hewitt made significant contributions in the field of electrical engineering. For Blasland, Bouck & Lee, Inc., and General Electric.

- **Archaeological and Historic Architectural Investigations, Garden State Parkway Improvements at Interchange 142, New Jersey.** Cultural Resource Task Manager for Phase I archaeological investigations and the historic architectural identification and evaluation studies of 171 resources within the designated area of potential effect. For the New Jersey Highway Authority.

- **Engineering District 4-0, Pennsylvania Department of Transportation Open-End Contract for Various Cultural, Historical, and Archaeological Services, 2000-2005.** Project Manager/ Principal Investigator. Responsibilities include design and performance of archaeological investigations and architectural evaluations in areas to be affected by bridge replacements and roadway relocation projects in a six-county region of northeastern Pennsylvania.

  Eighth Street Bridge Replacement Project, Kingston Township, Luzerne County, Pennsylvania. Project Manager/Archaeologist. Assisted in the development of an innovative research design and execution of the geoarchaeological and paleoenvironmental investigations within a 12.0-acre site adjacent to the Susquehanna River. The project was conducted in advance of PennDOT's planned replacement of the bridge and involved reconstructing the ancient landscape and environmental characteristics of a portion of the floodplain prior to and in lieu of more labor-intensive traditional archaeological excavations. Project received a *Distinguished Award for Engineering Excellence* from the Consulting

Engineers Council of New Jersey (CECNJ). For Pennsylvania Department of Transportation, Engineering District 4-0.

- **Bloomfield Avenue Bridge Replacement, Bloomfield, New Jersey.** Project Manager for Phase I cultural resource survey, including archaeological and historic architectural resources, for proposed bridge replacement over Peckman River in the Township of Verona. For County of Essex, Department of Public Works, Division of Engineering.

- **Cultural Resource Screening: Environmental Constraints Report, Proposed Interchange at U.S. Route 22 and Chimney Rock Road, Bridgewater Township, New Jersey.** Cultural Resource Task Manager for field inspection, background research, and preparation of cultural resource constraints report. For Somerset County Engineers.

- **Cultural Resource Assessment, Maintenance Yards and Facilities, Queens County, New York.** Task Manager responsible for the assessment of historic and prehistoric sensitivity for proposed improvement projects along the floodplain of Flushing River. For New York City Transit.

- **Stillwell Avenue Terminal Reconstruction, Brooklyn, New York.** Task Manager for the preparation of the Historic American Engineering Record documentation for the 1916-1919 Stillwell Terminal and 1930s Arcade Building. For New York City Transit.

- **Cultural Resource Assessment: Atlantic City Expressway, Atlantic County, New Jersey.** Project Manager for field inspection, background research, and preparation of technical report for Phase IA archaeological investigation. For the South Jersey Transportation Authority.

- **Phase I and II Archaeological Investigations, Route 47 Improvements, Glassboro, New Jersey.** Project Manager/Principal Investigator for the archaeological survey and evaluation of the Stanger Glassworks vicinity which was historically significant both in the development of the glass industry in New Jersey and the growth of the town of Glassboro. For the New Jersey Department of Transportation.

- **Archaeological Survey and Historic Architectural Assessment, Interstate 676 and Martin Luther King Boulevard, Camden, New Jersey.** Project Manager for Phase I archaeological survey and historic architectural assessment of 74 historic properties. For the New Jersey Department of Transportation.

- **New Jersey Route 21(5), City of Newark, Essex County, New Jersey.** Project Manager for completion of Phase II archaeological evaluations, Route 21(5) TSM improvements. For the New Jersey Department of Transportation.

- **Cultural Resource Screening: Environmental Constraints Study, Route 322 Corridor, Gloucester County, New Jersey**. Cultural Resource Task Manager for field inspection, background research, and preparation of cultural resource constraints report. For the New Jersey Department of Transportation.

- **Cultural Resource Sensitivity Study, Environmental Assessment of the Long Island Motor Parkway/Long Island Expressway Interchange, Village of Islandia, Suffolk County, New York.** Project Manager and Principal Investigator for the identification and assessment of cultural resources within the project area. For New York State Department of Transportation.

- **Lower Manhattan Access Study, New York.** Task Manager for the inventory of historic properties, districts, and archaeological sensitivity. For New York City Transit.

- **Cultural Resource Screening Study for Categorical Exclusion Documentation, Route 47, Sections 4D and 5E, Cape May County, New Jersey**. Project Manager for field reconnaissance, background research, and preparation of cultural resource screening report. For the New Jersey Department of Transportation.

- **Archaeological Investigations, Stewart Airport Access Connection Project, Stewart International Airport, Orange County, New York.** Project Manager and Principal Investigator responsible for survey and testing in areas of archaeological sensitivity along historic Drury Lane and locations for wetland mitigation sites. For the New York Thruway Authority, the New York State Department of Transportation, and Federal Highway Administration.

- **Vermont Agency of Transportation Agreement for Statewide Archaeological Services, 1998-2001.** Contract Administrator/Project Manager. Projects include field inspection assessments and Phase I archaeological studies in advance of bridge and roadway improvement projects, and a study of historic front yard archaeology for highway improvement projects.

- **Cultural Resource Services for the Pilgrim State Hospital Redevelopment Site, Suffolk County, New York.** Project Manager/Senior Archaeologist for archaeological survey and historic architectural assessment of more than 600 acres and 80 extant buildings and structures associated with the Pilgrim State Psychiatric Facility founded in 1931 and once the world's largest mental institution. For Reckson Associates Realty Corporation.

- **Pennsylvania Department of Transportation Statewide Open-End Agreement for Cultural Resource Services, 1994-1999.** Contract Administrator/Project Manager for 27 multidisciplinary work order assignments. Projects have included the performance of background and site file research; site-specific historical research; Phase I, II, and III archaeological investigations for both prehistoric and historic sites; geomorphological assessments; historic structure assessments; determinations of eligibility and effects; preparation of Section 4(f) or 2002 evaluations; memorandums of agreements; and Historic American Engineering Record (HAER) and Historic American Building Survey (HABS) documentation. Some major projects included:

  Proposed Wyalusing Creek Bridge Replacement, SR 0706, Rush Township, Susquehanna County, Pennsylvania. Project Manager/Senior Archaeologist for Phase I, II, and III archaeological investigations and architectural assessments of historic properties along the terraces and floodplain of Wyalusing Creek. Phase I investigations identified six previously unrecorded prehistoric sites and two historic archaeological sites. Phase II and III investigations included the Bennett Site #1 (a prehistoric camp affiliated with the Late Archaic/Lamoka occupation) and Quick Site #3 (a prehistoric camp occupied during the Late Archaic and Late Woodland periods).

Walnut Street Bridge Rehabilitation Project, Harrisburg, Pennsylvania. Project Manager for all environmental and cultural resource studies to support the emergency rehabilitation of the National Register-listed Walnut Street Bridge, East Channel Section. The pedestrian bridge across the Susquehanna River was closed following heavy damage during the January 1996 flood. All project activities were completed under an accelerated schedule and included emergency HAER recordation, measured drawings of the historic bridge, Criteria of Effect documentation, Categorical Exclusion Evaluation, and Section 2002 Findings.

- **Cultural Resource Services for the Greenville Yard Transfer Bridges No. 9-14, Jersey City, New Jersey.** Contract Administrator for the HAER documentation, motion picture film footage and video, and coordination of salvage operations associated with demolition of the last surviving example in New York Harbor of a suspended-type railroad car float transfer bridge circa 1904-1945. For the Consolidated Rail Corporation (Conrail).

- **Vermont Agency of Transportation Agreement for Statewide Archaeological Services, 1995-1998.** Contract Administrator/Project Manager for 23 archaeological studies, ranging from field inspections to Phase I, II, and III investigations, including both prehistoric and historic archaeological resources. Major project assignments included:

  Derby BRF 034-3(14), Derby, Vermont. Phase III historical and archaeological investigations of a National Register-eligible mill complex on the Clyde River, with a focus on Site VT-OI-22, a nineteenth- to twentieth-century sawmill site.

- **Kratz Road Bridge Replacement, Cultural Resource Investigations and Section 106 Compliance, Montgomery County, Pennsylvania.** Cultural Resource Task Manager for archaeological and architectural investigations and Section 106 compliance activities. Project included the evaluation of a prehistoric site and measures to mitigate impacts to a potentially eligible National Register historic district and historic stone arch bridge in Evansburg State Park. For Ammann & Whitney and the Pennsylvania Department of Transportation, Engineering District 6-0.

- **Historic American Engineering Record Documentation, Lembeck & Betz Eagle Brewery, Jersey City, New Jersey.** Project Manager for HAER documentation of the late nineteenth- and early twentieth-century industrial complex, which was once the fourth largest brewery in New Jersey. For the Jersey City Redevelopment Agency.

- **Historic American Building Survey Documentation, Veterans Memorial Home, Menlo Park, New Jersey.** Project Manager for emergency HABS documentation of the New Jersey Home for Disabled Soldiers, the third such facility built in 1931-1932 by the State of New Jersey to shelter its war veterans. For the State of New Jersey, Department of Military and Veterans Affairs.

- **Historic Architectural and Archaeological Evaluations, and Section 106 Compliance of Railroad Features in Pennsylvania.** Project Manager. Responsible for close coordination with the client, PennDOT, and PHMC/SHPO to address immediate cultural resource concerns and obtain Section 106 clearance for approximately 129 project locations across Pennsylvania. As a fast-track project with multiple tasks, developed weekly task schedules, arranged staffing requirements, maintained overall project tracking, performed cost analysis, supervised preparation of technical

reports, and prepared special exhibits and documents. For the Consolidated Rail Corporation (Conrail).

- **Vermont Agency of Transportation Agreement for Statewide Archaeological Surveys, 1990-1997.** Project Manager. Responsible for client coordination, project tracking, staffing requirements, preparation of technical documents, and task scheduling. Fourteen project assignments involving archaeological assessments, Phase I investigations, and Phase II evaluations were performed.

- **Pennsylvania Department of Transportation Statewide Open-End Contract for Cultural Resource Investigations, 1990-1995.** Project Manager. Responsible for all scope of services, proposals, deliverables, project tracking, and client coordination. Work order assignments in excess of 25 projects, including fast-track and concurrent projects involving multiple tasks, such as Phase I/II archaeological investigations and preliminary architectural assessments, through eligibility and recordation. Critical components of several projects involved the implementation of Sections 106 and 4(f) compliance activities, such as architectural documentation. Major projects included:

  Exton Bypass Wetland Replacement Project, Chester County, Pennsylvania. Project Manager/Senior Archaeologist. Responsible for Phase I archaeological and historical investigations, Section 106 compliance activities, and the coordination and successful completion of all cultural resource services for the proposed wetland replacement and stream enhancement mitigation action associated with the construction of the Exton Bypass in Chester County. Project involved identification surveys on more than 20 individual parcels, evaluation studies of nine prehistoric sites, historical research, geomorphological investigations of each parcel, historic district boundary studies for all National Register-listed or eligible properties, determination of eligibility and effect reports, visual impact analysis of National Register properties including a listed rural historic landscape, and preparation of the Memorandum of Agreement. For Engineering District 6-0.

  Western Center Interchange, SR 1009, Washington County, Pennsylvania. Project Manager. Responsible for overall design, research, scheduling, and coordination for Phase I/II archaeological and historical site investigations within the construction area for a loop interchange and for access roads connecting Interstate 79 with State Route 1009. Project involved identification and evaluation of five prehistoric sites and site-specific historical research of a possible nineteenth-century road trace. Prepared weekly summary reports and arranged weekly conference calls to provide data on the field progress, including preliminary findings and projected schedule of the work to date, to assist coordination and consultation efforts between PennDOT, PHMC/SHPO, FHWA, and other involved agencies. For the Pennsylvania Department of Transportation, Engineering District 12-0.

  Gravel Lick Bridge, SR 1001, Clarion County, Pennsylvania. Project Manager. Supervised all Phase I/II data collection and analysis of impacts to intact archaeological features and stratified deposits associated with Site 36CL89 on the north bank of the Clarion River. For Engineering District 10-0.

  Mill Creek Bridge at Haags Mill, SR 0191, Dreher Township, Wayne County, Pennsylvania. Project Manager. Supervised and coordinated all historic, archaeological, and historic architectural investigations associated with the proposed rehabilitation or

replacement of a National Register-listed stone arch bridge carrying State Route 0191 over Mill Creek. The investigations identified the historic remains of an elaborate farming and milling complex within the project area. Structural remains of two nineteenth-century milling operations along with their associated water-control networks were identified, and a potentially eligible National Register Historic District was identified and recorded. For Engineering District 4-0.

- **Engineering District 4-0, Pennsylvania Department of Transportation Open-End Contract for Archaeological Services.** Project Manager. Responsibilities involved design and performance of archaeological surveys and architectural evaluations in areas to be affected by bridge replacements and relocation projects in a six-county region of northeastern Pennsylvania. Several projects involved complex multidiscipline task coordination and techniques for the identification of previously reported archaeological sites, historical records and map searches to identify potential sites, study of environmental conditions to estimate the potential for prehistoric site locations, and surveys of the proposed project areas to identify archaeological resources. Distinctive projects included:

  Aldenville Bridge Replacement, SR 0170, Wayne County, Pennsylvania. Project Manager and Principal Investigator. Supervised and participated in all aspects of archaeological and historical site investigations, evaluation, and mapping for the nineteenth-century tannery site situated within proposed relocation of State Route 0170 in the village of Aldenville. Detailed study and consideration of the site relative to the proposed project design specifications resulted in a recommendation for no further archaeological or historical research.

  White Mills Bridge Replacement, Wayne County, Pennsylvania. Project Manager and Principal Investigator. Coordinated historical research and architectural evaluation of a twentieth-century fire station, the Delaware and Hudson Canal, and a potential National Register Historic District. Supervised archaeological fieldwork, data analysis, and report preparation.

  Preliminary Cultural Resource Evaluation and Effects Report, Brown Street Bridge Rehabilitation, Honesdale, Wayne County, Pennsylvania. Project Manager. Provided assessment of potential archaeological resources in the areas to be affected by the proposed bridge rehabilitation project. An early twentieth-century coal elevator was evaluated as eligible for the National Register under Criterion C.

  Prompton Bridge Replacement, Wayne County, Pennsylvania. Project Manager and Principal Investigator. Conducted Phase I archaeological investigations of gravity railroad lift plane, engine house, raceway, and towpath associated with Delaware & Hudson Canal Company. Synthesized historical data and architectural information regarding mid-nineteenth-century Bryant House to provide recommendation for potential National Register eligibility under Criterion C.

- **Visual Impact Analysis, Gettysburg Commons Mall Design, Adams County, Pennsylvania.** Project Manager. Supervised all Phase I/II historical research and archaeological investigations of 35-acre area to be developed. Project involved the identification and evaluation of an early

twentieth-century tile-works site and a mid-nineteenth-century farmstead. Also assisted in the evaluation of the overall visual impact of the project on the adjacent Gettysburg Historic Military Park and Historic Battlefield District in Gettysburg. All analyses and investigations for this project were conducted in coordination with the PHMC/SHPO and the National Park Service. For Mark Development Company.

- **Archaeological and Preliminary Architectural Surveys, Tunkhannock Bypass, Wyoming County, Pennsylvania.** Project Manager and Principal Investigator. Managed all archaeological and historic architectural studies for the three proposed bypass alignments in the Borough of Tunkhannock, Pennsylvania. Responsibilities included client coordination, meetings, presentations to PennDOT, FHWA, SHPO, and other involved agencies, and preparation of comprehensive cultural resource reports and information for the alternatives study. As Principal Investigator, responsibilities focused on the identification of cultural resources in the corridors, analysis of site components and cultural affiliations, and evaluation of significance. For Skelly and Loy and the Pennsylvania Department of Transportation, Engineering District 4-0.

- **County Bridge 55501, T-351, Area of Impact Alternative I; County Bridge 15313, T-620; and County Bridge 17013, T-630, Luzerne County, Pennsylvania.** Project Manager for Phase I cultural resource surveys. Responsible for project scoping, cost estimates, research, quality control, and compliance with state and federal regulations for three proposed bridge replacement projects in Luzerne County. The Project Manager was also responsible for assuring the technical quality and consistency in the documents according to PHMC/BHP guidelines. For the Luzerne County Road and Bridge Department.

- **Phase I Cultural Resource Investigation CAN DO Corporate Center, Luzerne County, Pennsylvania.** Project Manager for Phase I cultural resource investigation. Designed and directed stratified archaeological sampling of 180-acre proposed development site. Duties included client coordination, project administration services, and technical collaboration. For the Greater Hazleton Community Area New Development Organization, Inc.

- **Proposed Sanitary Sewer and Manufacturing Facility, South Lebanon Township, Lebanon County, Pennsylvania.** Project Manager and Principal Investigator. Responsible for development of study plan and implementation and coordination of research for 24-acre Phase I archaeological and historical survey. For Gehl Company.

- **New Jersey Route 92, Middlesex County, New Jersey.** Co-Principal Investigator. Phase I/II archaeological investigations. Assisted in data analysis, interpretation, and preparation of technical materials and reports for 11 prehistoric and 18 historic archaeological sites within the proposed corridor and alternative schemes. Responsibilities also included the evaluation of four historic archaeological sites according to National Register eligibility criteria. For the New Jersey Department of Transportation.

- **Harbortowne Waterfront Development, Sayreville, New Jersey.** Principal Investigator for Phase III mitigation.

- **Gateway Cathedral, Staten Island, New York.** Archaeologist for Phase I cultural resource survey.

- **Manor, Village of Irvington, Westchester County, New York.** Principal Investigator for Phase I cultural resource investigations.

- **Phase IA Cultural Resource Survey of Central Florida.** Principal Investigator. For the U.S. Department of Justice, Federal Bureau of Prisons.

- **Consolidated Fire Training School, Windsor Locks, Hartford County, Connecticut.** Principal Investigator for Phase IA cultural resource investigations.

- **Phase IA Cultural Resource Survey of Rockwood, Tennessee.** Principal Investigator. For the U.S. Department of Justice, Federal Bureau of Prisons.

PREVIOUS PROFESSIONAL EXPERIENCE

- **Historic Site Manager/Cultural Resource Analyst, Division of Environmental Protection, Town of Brookhaven, Long Island, New York.** Reviewed private and public land developments for impacts on cultural resources in accordance with New York State Environmental Quality Review Act (SEQRA). Prepared technical reports and determinations for municipal actions, including Town Master Plan, Local Waterfront Revitalization Project, Landmark Nominations, and Nature Preserve sites. Coordinated with the State Historic Preservation Officer, New York State Department of Environmental Conservation, Suffolk County Historic Trust, and Historic District Advisory Committee. 1987-1989.

- **Archaeologist, Archivist, and Manager, Institute for Long Island Regional Archaeology, State University of New York at Stony Brook.** Supervised and participated in all aspects of fieldwork, proposal and report preparation, laboratory analysis, archival research, and graphics. Involved in the excavation of ILIRA-1004, a Paleoindian site in Riverhead, and survey of multicomponent archaeological sites on eastern Long Island. 1988-1989.

- **Researcher, Department of Anthropology, State University of New York at Stony Brook.** Conducted analysis of Native American skeletal remains and investigation of prehistoric human burial sites on Long Island utilizing collection from the Museum of Natural History in New York City. 1989.

- **Archaeological and Historical Consultant.** As a private consultant, completed the evaluation and interpretation of the Hayne-Sherwood Homestead as a center of heritage education sponsored by the Society for the Preservation of Long Island Antiquities. 1988.

- **Instructor, School of Continuing Education, State University of New York at Stony Brook.** Co-instructor for Field Studies in Long Island Natural and Cultural History. Intensive graduate course designed especially for teachers and educators that focused on the exploration and discussion of unique historical, archaeological, and natural areas and sites in Nassau and Suffolk counties, Long Island. 1984-1988.

- **Project Historian and Field Crew Chief, Department of Anthropology, State University of New York at Stony Brook.** Participated in the Summer Field School in Long Island Archaeology. Survey, excavation, and interpretation of the Havens Estate and six Woodland period sites within

the proposed zone of impact for the Oak Tree Bay Development on the Great South Bay of Long Island. 1987.

PUBLICATIONS

- Contributing author, Plowed Fields and Historical Archaeology: The Petty Homestead, Middle Island, Suffolk County. *The Historical Archaeology of Long Island*: Part I - The Sites. *Readings in Long Island Archaeology and Ethnohistory*, vol. VII, edited by G. Stone and D. Ottusch-Kianka, pp. 280-291. Suffolk County Archaeological Association, New York. 1986.

ZACHARY J. DAVIS
Archaeologist

EDUCATION

- Interdepartmental Doctoral Program in Anthropological Science, State University of New York at Stony Brook
- 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 REGISTRATION

- Register of Professional Archaeologists (RPA)

TECHNICAL TRAINING

- 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
- Paleoanthropology Society of America
- Society for Archaeological Sciences

PROFESSIONAL EXPERIENCE

Mr. Davis's background includes archaeological investigations at prehistoric sites dating from the Paleoindian through Late Woodland periods and historic sites dating from the seventeenth through early twentieth centuries. As Principal Investigator, 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 multitask studies, planning and conducting surveys and excavations of historic and prehistoric sites and their resources, 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:

- **U.P.N. Pallet Co. Cell Tower, Penns Grove, New Jersey.** Principal Investigator for a Phase IB archaeological assessment of a proposed 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 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 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.

- **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 a cultural resource screening of 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 spanning 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.

- **Spencer-Pierce-Little Farm, Newbury, Massachusetts.** Excavator. Boston University archaeological field school at a late sixteenth-century homestead.

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

- 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

- 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.

- Experimental Test of Middle Paleolithic Hunting Weapons: Preliminary Results. Paper presented at the 64th Annual Meeting of the Society for American Archaeology, Chicago. 1999 (with J.J. Shea and K.S. Brown).

- The Analytical Potential of Refitting Studies: History and Synthesis of Applications. Paper presented at the 63rd Annual Meeting of the Society for American Archaeology, Seattle. 1998.

- The PS 56R Site: A Vosburg Habitation on Staten Island, New York. Paper presented at the 62nd Annual Meeting of the Society for American Archaeology, Nashville. 1997 (with A.M. Pappalardo).

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.