TECHNICAL REPORT

PHASE IB ARCHAEOLOGICAL IDENTIFICATION SURVEY
ROUTE VARIATION 50 ADDITIONAL WORKSPACE
STATEN ISLAND, RICHMOND COUNTY, NEW YORK

TEXAS EASTERN TRANSMISSION, LP
New Jersey-New York Expansion Project
FERC Docket #CP11-56-000

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MANAGEMENT ABSTRACT

SHPO Project Review Number: OPRHP File No. 09PR05949

Involved State and Federal Agencies: FERC

Phase of Survey: IB (subsurface testing)

Location Information

Location: Private Parcel in Staten Island north of Goethals Bridge Road and east of Western Avenue
Minor Civil Division: New York City – Borough of Staten Island
County: Richmond

Survey Area

Length: Staten Island – 135 meters (m) (443 feet(ft))
Depth: maximum 116 cm (3.8 ft)
Width: 80 meters (m) (263 ft)
Number of Acres Surveyed: Approximately .98 hectares (2.42 acres)
Number of Square Meters & Feet Excavated (Phase II, Phase III only): N/A
Percentage of the Site Excavated (Phase II, Phase III only): N/A

USGS 7.5 Minute Quadrangle Map: Elizabeth, NJ

Archaeological Survey Overview

Number & Interval of Shovel Tests: 64 (15m interval staggered grid; judgmental test pits; 5m interval arrays)
Number & Size of Units: Four (one 0.5-x-1m; and three 1-x-1m)
Width of Plowed Strips: N/A
Surface Survey Transect Interval: N/A

Results of Archaeological Survey

Number & name of prehistoric sites identified: One (Old Place Neck Site)
Number & name of historic sites identified: One (Old Place Neck Site)
Number & name of sites recommended for Phase II/Avoidance: One (Old Place Neck Site/prehistoric & historic)

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Date of Report: April 2011

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CHAPTER ONE

INTRODUCTION

Spectra Energy Corp (Spectra Energy) is proposing to expand its pipeline systems in the New Jersey-New York region to meet the immediate and future demand for natural gas in the largest United States metropolitan area. The New Jersey-New York Expansion Project (NJ-NY Project) will create a new transportation path for 800,000 decatherms per day (Dth/d) of natural gas from multiple receipt points on the Spectra Energy systems to new delivery points in New Jersey and New York. The Project consists of approximately 20.3 miles of multi-diameter pipeline, associated pipeline support facilities, and six new metering and regulating (M&R) stations. The proposed facilities are located in New Jersey, New York, and Connecticut (Figure 1-1).

Project Background

The Public Archaeology Laboratory, Inc. (PAL) has completed a Phase IA level archaeological overview survey for the New York portion of the Project area (Elquist et al. 2010). Subsequent to the completion and submission of the Phase IA archaeological overview survey report (Elquist et al. 2010), Spectra Energy revised plans for a portion of the Project area located in Staten Island, New York (Figure 1-2). Designated Route Variation 50, the revised Project route was also subjected to a Phase IA archaeological overview survey produced as an addendum to the December filing technical report (Elquist and Cherau 2011). Route Variation 50 consists of revised pipeline route and horizontal direction drill (HDD) entry point, and additional workspace. The additional workspace associated with Route Variation 50 is located within a vacant, wooded lot east of the existing M&R Station 058, and is the subject of this report. The assessment of the additional workspace concluded that the area contained high sensitivity for the presence of pre-contact archaeological resources and moderate sensitivity for post-contact resources (Elquist and Cherau 2011). Previous subsurface testing along the southern edge of the vacant wooded lot revealed intact sediments with no overburden of fill or other disturbed deposits (Berger 2007). Therefore, it was recommended that a Phase IB survey consisting of shovel test pits be conducted in this area.

Soil borings were recommended for the remaining archaeologically sensitive areas of Route Variation 50 (Elquist and Cherau 2011). However, since the completion of the addendum for this Project change, construction and grading plans for the existing M&R Station 058 have been made available. These plans demonstrate that the portion of the existing M&R Station traversed by the proposed Project route has undergone previous construction disturbances related to cutting and filling, and the installation of various facilities including below ground utility lines, a microwave building and tower, an electrical generator and compressor, and an earthen fill firewall the footprint of which contains a liquid storage tank. In consideration of these disturbances, PAL has revised the archaeological sensitivity of the area contained within the fenced-in compound of the existing M&R Station to a low potential for pre- and post-contact archaeological resources. Therefore, PAL recommends that no additional archaeological investigations are warranted within the fenced-in footprint of existing M&R Station 058. Geoarchaeological soil borings have been completed for the remaining archaeologically sensitive areas along Route Variation 50, and the results of the soil borings analysis and proposed Phase IB testing methodology are provided in a separate document (PAL 2011).

Description of the Phase IB Investigated Project Area

The portion of Route Variation 50 that underwent Phase IB archaeological hand testing in March-April 2011 is located immediately east of existing M&R Station 058 facilities along the north side of Goethals Road North (Figure 1-3). The investigated area consists of additional workspace that measures approximately 300-x-300-feet (ft) in maximum dimension. Proposed impacts to this area include the site of the HDD entry point, the installation of new pipeline and tree clearing.

Scope and Authority

The Spectra Energy NJ-NY Project requires approvals and permits from federal, state, and local entities. One of the primary Project approval requirements at the federal level is a Certificate of Public Convenience and Necessity under Section 7(c) of the Natural Gas Act issued by the Federal Energy Regulatory Commission (FERC). Consequently, the Project is being reviewed under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. Prior to authorizing an undertaking (e.g., the issuance of a FERC approval or Certificate), Section 106 of the NHPA requires federal agencies, including the FERC, to take into account the effect of that undertaking on cultural resources listed or eligible for listing in the National Register of Historic Places (36 CFR §60). The agency must also afford the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on the undertaking. The Section 106 process is coordinated at the state level by the State Historic Preservation Officer (SHPO), represented in New York by the Office of Parks, Recreation, and Historic Preservation (OPRHP). The issuance of a federal agency certificate or approval depends, in part, on obtaining comments from the New York SHPO. In accordance with Section 106, FERC, as the lead federal agency for the Project, must consult with the SHPO regarding the effects of the Project on historic properties.

The primary goals of cultural resource investigations conducted as part of the Section 106 review process are to:

- locate, document, and evaluate buildings, structures, objects, landscapes, and archaeological sites that are listed, or eligible for listing, in the National Register of Historic Places (National Register);
- assess potential impacts of the Project on those resources; and
- provide recommendations for subsequent treatment, if necessary, to assist with compliance with Section 106.

In addition to Section 106, the additional cultural resources investigation will be conducted for this portion of the Project in accordance with FERC's Office of Energy Project's *Guidelines for Reporting on Cultural Resources Investigations* (2002); the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (NPS, 48 Fed. Reg. 44716-42, Sept. 29, 1983); the standards and guidelines set forth in *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (New York Archaeological Council [NYAC] 1994) adopted by the OPRHP; and the standards and guidelines set forth in *Landmarks Preservation Commission Guidelines for Archaeological Work in New York City* (LPC 2002). Because of the sensitive nature of some of the material contained in this proposal, the covers and any applicable pages are labeled "CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE" in accordance with FERC guidelines and 36 CFR 800.11(c)(1).

Project Personnel

PAL personnel involved in the Phase IB investigations of the Route Variation 50 additional workspace include Deborah C. Cox and Gregory R. Dubell (project managers), and Suzanne Cherau (principal investigator). Ora Elquist (project archaeologist) supervised the field investigations. Kristen Jeremiah, Erin Timms, Linn Gunnarsson, Michael Duffin, and Robert Sheldon (archaeologists) assisted with archaeological field investigations. All PAL Project personnel meet the qualifications set by the National Park Service (36 CFR Part 66, Appendix C).

Disposition of Project Materials

All Project materials (e.g. artifacts, field notes, maps, photographs and copies of the report) are currently on file at PAL, 210 Lonsdale Avenue, Pawtucket, Rhode Island. PAL will consult with the New York SHPO and the New York City Landmarks Preservation Commission (LPC) to determine a final location for disposition of Project materials.

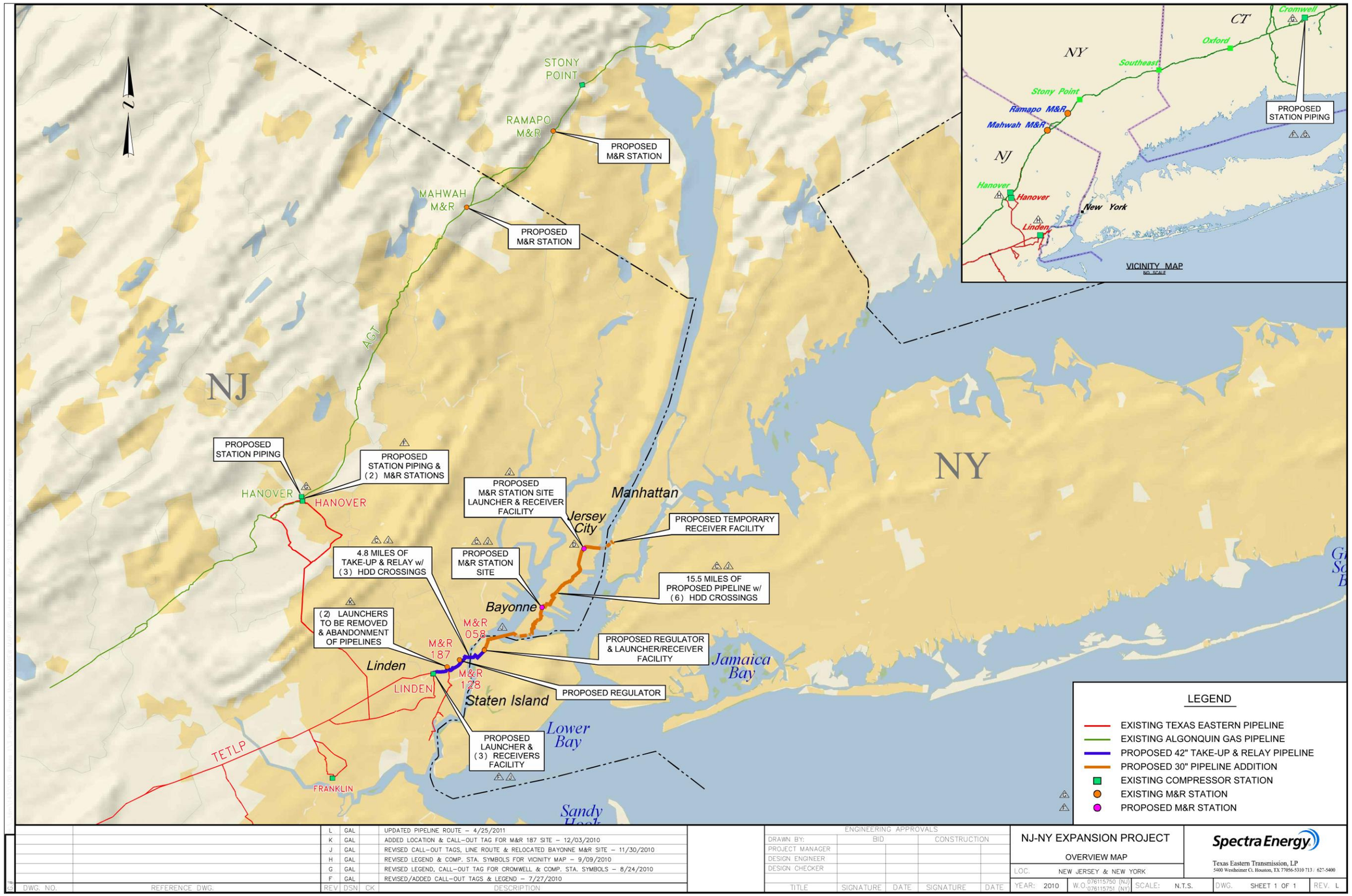

Figure 1-1. Overview map showing the various locations of the NJ-NY Project.

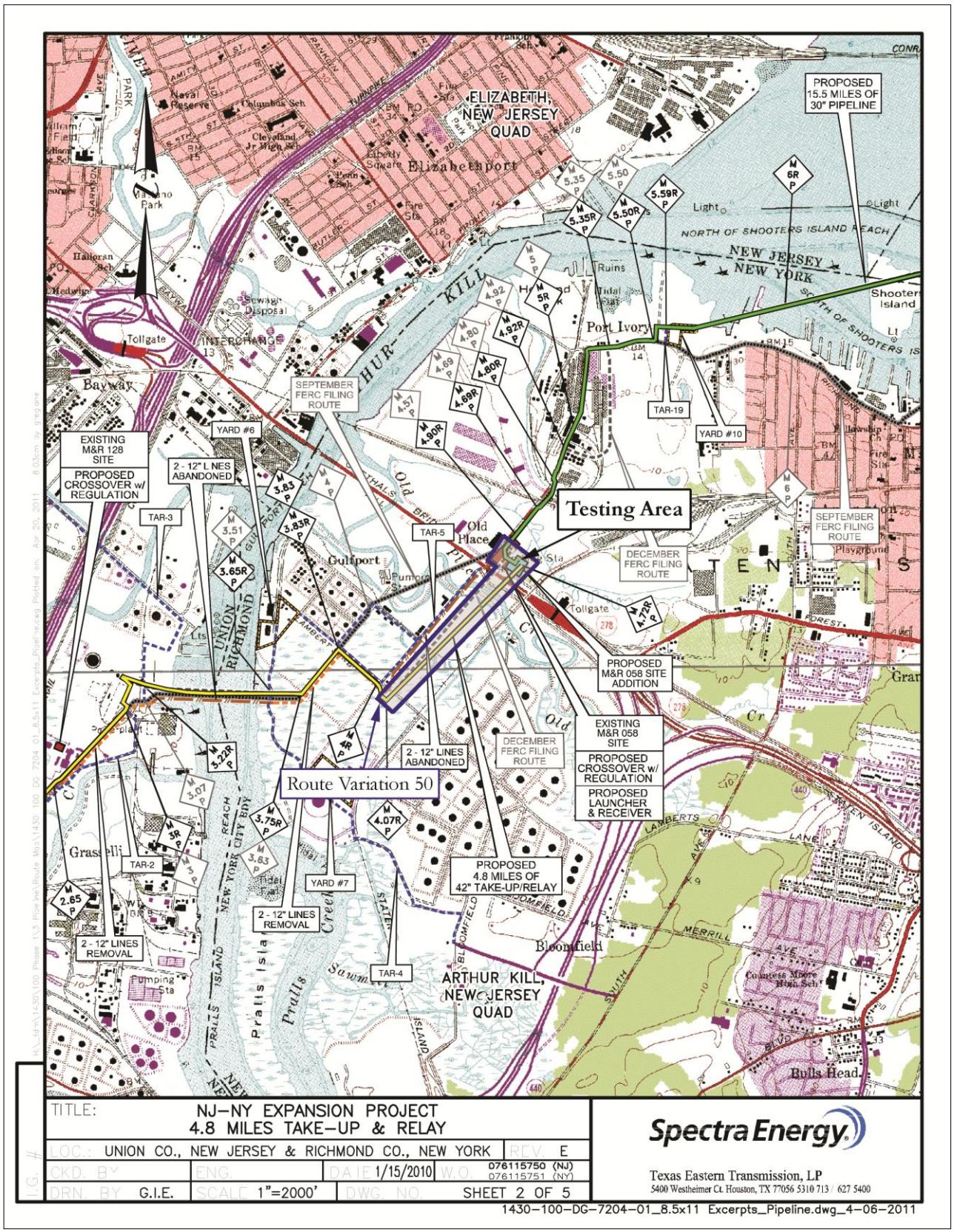

Figure 1-2. NJ-NY Project area, showing the location of Route Variation 50 on the Elizabeth and Arthur Kill, NJ, USGS topographic quadrangles, 7.5 minute series.

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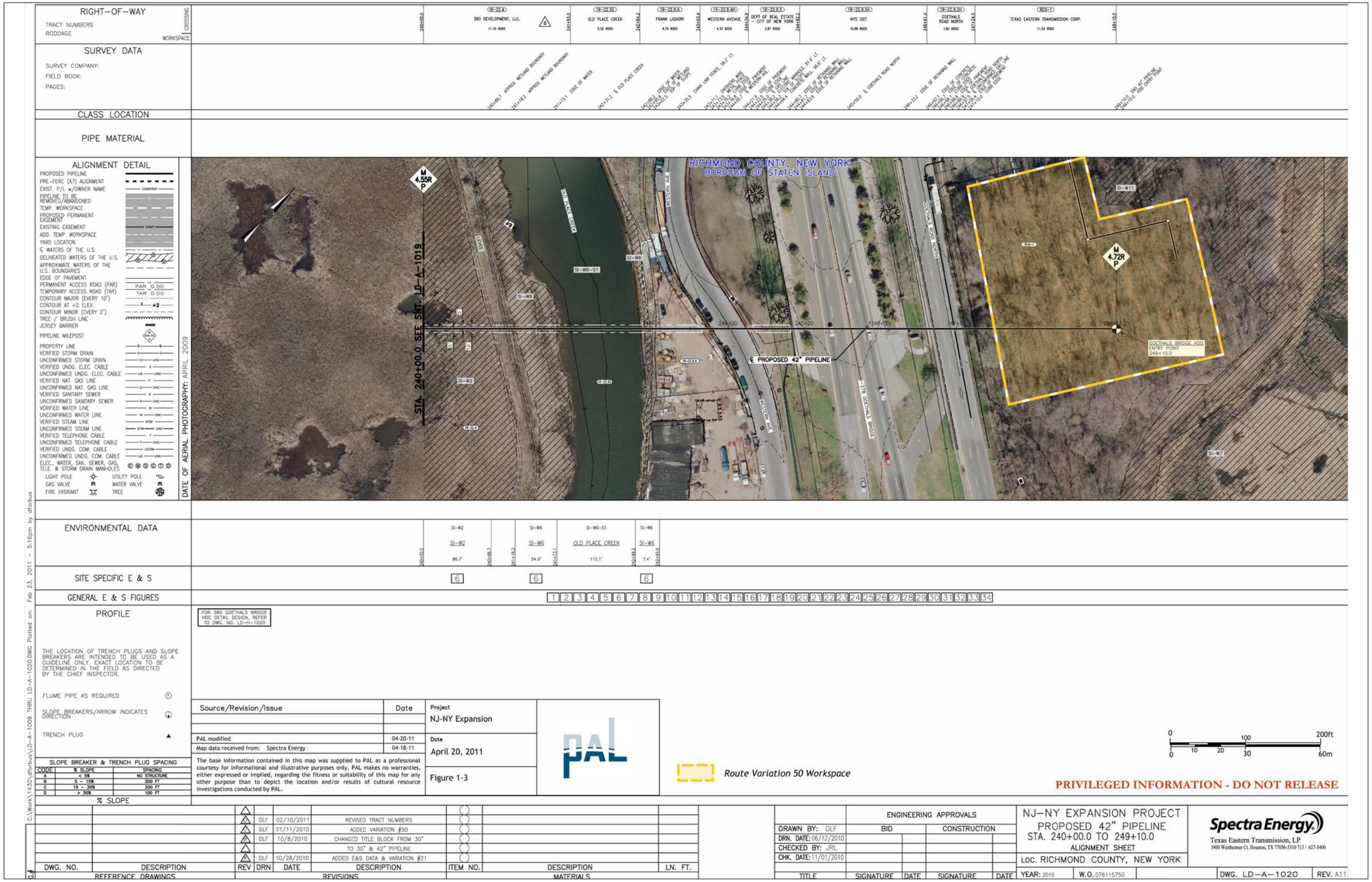


Figure 1-3. Map of the Route Variation 50 workspace, Staten Island, New York.

CHAPTER TWO

METHODOLOGY

The goal of the Phase IB archaeological survey of the Route Variation 50 additional workspace was to locate and identify any Native American and/or post-contact cultural resources potentially eligible for listing in the State or National Registers of Historic Places (National Register). The archival research and field inspection performed during the Phase IA level archaeological overview survey provided the information necessary to develop environmental and historic contexts for the project area and develop a predictive model for archaeological sensitivity of this portion of the Project area. Archaeological sensitivity is defined as the likelihood for belowground cultural resources to be present and is based on various categories of information. These categories include:

- locational, functional, and temporal characteristics of previously identified cultural resources in the project area or vicinity; and

- local and regional environmental data reviewed in conjunction with existing project area conditions documented during the walkover survey, and archival research about the project area's land use history.

This chapter describes the methods used during each of the archival research and field activities. The results, interpretations, and recommendations are discussed and evaluated in Chapters 5 and 6.

Evaluating Significance and Historic Contexts

The different phases of archaeological investigation reflect preservation planning standards for the identification, evaluation, registration, and treatment of cultural resources (National Park Service [NPS] 1983). The 1994 NYAC's publication of *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* as adopted by the NY SHPO, reflect the NPS planning recommendations. This planning structure is based on the eligibility of cultural resources for inclusion in the National Register. The National Register is the official federal list of properties that meet the criteria for historic significance. The results of a Phase IB survey and Phase II site examination are used to make recommendations about the significance and National Register eligibility of any resource.

The standards used to determine the significance of cultural resources, a task required of federal agencies, have been the guidelines provided by the NPS (36 CFR 60): the National Register Criteria for Evaluation. Four criteria are listed by which the "quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association:

A. that are associated with events that have made a significant contribution to the broad patterns of our history;

B. that are associated with the lives of persons significant in our past;

C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. that have yielded, or may be likely to yield, information important to prehistory or history (36 CFR 60.4).

Most archaeological sites listed in the National Register have been determined eligible under criterion A or D. For eligibility under these criteria, a number of issues must be addressed including the kind of data contained in the site, the relative importance of research topics that can be addressed by the data, whether these data are unique or redundant, and the current state of knowledge relating to the research topic(s) (McManamon 1990:14–15). A

defensible argument must establish that a site "has important legitimate associations and/or information value based upon existing knowledge and interpretations that have been made, evaluated, and accepted" (McManamon 1990:15).

The criteria used to evaluate the significance of cultural resources are applied in relation to the historical contexts of the resources. A historical context is defined as follows:

> A historic context is a body of thematically, geographically, and temporally linked information. For an archaeological property, the historic context is the analytical framework within which the property's importance can be understood and to which an archaeological study is likely to contribute important information (Little et al. 2000).

Historical contexts provide an organizational format that groups information about related historical properties, based on a theme, geographic limits, and chronological period. A historical context may be developed for Native American, historic, and/or modern cultural resources. Each historical context is related to the developmental history of an area, region, or theme (e.g., agriculture, transportation, waterpower), and it identifies the significant patterns that particular resource can represent.

Historical contexts are developed by:

- identifying the concept, time period, and geographic limits for the context;
- collecting and assessing existing information about these limits;
- identifying locational patterns and current conditions of the associated property types;
- synthesizing the information in a written narrative; and
- identifying information needs.

"Property types" are groupings of individual sites or properties based on common physical and associative characteristics; they serve to link the concepts presented in the historical contexts with properties illustrating those ideas (NPS 1983:44719).

A summary of an area's history can be developed by a set of historical contexts. This formulation of contexts is a logical first step in the design of any archaeological survey. It is also crucial to the evaluation of individual properties in the absence of a comprehensive survey of a region (NPS 1983:9). The result is an approach that structures information collection and analyses. This approach further ties work tasks to the types and levels of information required to identify and evaluate potentially important cultural resources.

The following research contexts were developed to organize the data relating to the pre- and post-contact period cultural resources identified within the proposed Project area in Staten Island, New York:

1. Pre-contact land use and settlement within the Lower Hudson River valley and New York Bay area, circa (ca.) 12,500 to 300 years before present (B.P.); and

2. Historic land use and settlement patterns in Staten Island, ca. A.D. 1650 to present.

The historic contexts are discussed in detail in Chapter 4. The potential research value of the known and expected archaeological resources identified within the Project APE is evaluated in terms of these historic contexts. The evaluation, along with management recommendations, is presented in Chapter 5.

Archival Research

The development of a historic context and a predictive model of expected archaeological resources within Route Variation 50 began with archival research, consisting of an examination of primary and secondary documentary sources. These sources include written and cartographic documents relating both to past and present environmental

conditions as well as documented/recorded sites in the general project vicinity. The information contained in archival sources formed the basis of the predictive model developed for the Project APE, and was an integral part of the sensitivity assessment conducted for the previous archaeological overview survey (Elquist et al. 2011).

Specific sources reviewed as part of the archival research for Route Variation 50 include:

State Site Files, Cultural Resource Management Reports and Archaeological Studies

The state site files at the New York SHPO were reviewed to locate any recorded archaeological sites in or close to the Project APE. The New York SHPO inventory includes sites listed in the inventories maintained by the New York State Museum and the American Museum of Natural History as well as resources listed in or eligible for listing in the National Register of Historic Places (National Register). The New York SHPO inventories were also reviewed to identify any previous archaeological surveys in, or in proximity to the Project, and reports documenting cultural resource management (CRM) investigations conducted in the project vicinity were reviewed for information salient to the current Project work areas and sensitivity assessments. Reviewed reports for CRM investigations conducted in proximity to the Route Variation 50 Project area are summarized in Table 2-1.

Table 2-1. Cultural Resource Management Reports Reviewed for Route Variation 50 of the NJ-NY Expansion Project.

SHPO # or other Designation	Author/Year	Title
LPC 665	Boesch 1994	Archaeological Evaluation and Sensitivity Assessment of Staten Island, New York
LPC 684	Geoarcheology Research Associates 1997	Staten Island Bridges Program- Modernization and Capacity Enhancement Project, Goethals Bridge Phase 1B/3 Geomorphological Analysis Report on Coring and Additional Radiocarbon Dating
LPC 721	Hartgen Archeological Associates, Inc 1995	Goethals Bridge Expansion, Staten Island Bridges Program, Richmond County, New York and Union County, New Jersey
LPC 722	Hartgen Archeological Associates, Inc. 2002	Phase IA Literature Review and Archeological Sensitivity Assessment, Cross Harbor Freight Movement Project, Port Ivory Yard, Arlington Yard, Eleven Railroad Crossings and Proposed Tunnel, Staten Island, Richmond County, New York
LPC 728	Kardas and Larrabee 1982	Archaeological Field Survey of the Foreign Trade Zone Project at Howland Hook, Staten Island, New York
Goethals Bridge EIS	The Louis Berger Group 2007, and others	Goethals Bridge Replacement, Richmond County, New York and The City of Elizabeth, Union County, New Jersey.
Cross Harbor EIS	New York City Economic Development Corporations (NYCEDC) 2004	Cross Harbor Freight Movement Project, Draft Environmental Impact Statement
MAAR 1986	Payne and Baumgardt 1986	Howland Hook Marine Terminal Expansion Cultural Resources Reconnaissance

Histories and Maps

Primary and secondary histories and historical maps and atlases of Staten Island were examined to assess changes in land use, to locate any documented structures, and to trace the development of transportation networks and industries, important variables in the location of post-contact period archaeological sites. Documentary historic resources included: *History of the State of New York, First Period, 1609-1664* (Brodhead 1853); *Morris's Memorial History of Staten Island, New York, vols. I and II* (Morris 1898 and 1900); *The Memorial History of the City of New*

York, From its Earliest Settlement to the Year 1892, Vol IV (Wilson 1893); and *Annals of Staten Island, From its Discovery to the Present Time* (Clute 1877). Table 2-2 provides a list of cartographic sources reviewed for the Route Variation 50 additional workspace.

Table 2-2. Cartographic Sources Reviewed for Route Variation 50 of the NJ-NY Expansion Project.

Year	Author	Title	Publisher
1776-1783	McMillen, Loring	A Map of Staten Island During the Revolution	Unknown, published 1933
1845	Hassler, F.R.	Map of New York Bay and Harbor and the environs	U.S. Coast Survey, Washington, DC
1860	Walling, H.F.	Map of the City of New-York and its Environs	S.D. Tilden, New York
1872	Dripps, M.	Map of Staten Island (Richmond County), New York	M. Dripps, New York
1874	Beers, F.W.	Map of Staten Island, Richmond County, New York	J.B. Beers & Co., New York
1891	United States Geological Survey	Staten Island, New York quadrangle sheet	United States Geological Survey, Washington, D.C.
1917	Bromley, G.W.	Atlas of Richmond County, New York	G.W. Bromley & Co., New York
1937	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1950	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1962	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1977	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1981	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1983	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1986	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1987	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1988	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1989	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1990	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1992	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1993	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York
1995	Sanborn Insurance Co.	Insurance Maps of New York, Richmond Boro, Vol. 2	Sanborn Map Co., New York

Environmental Studies

Bedrock and surficial geological studies provided information about the region's physical structure and about geological resources near the project area. The United States Department of Agriculture (USDA) Soil Conservation Service soil survey for New York City (Natural Resources Conservation Services [NRCS] 2005) supplied information about soil types and surficial deposits within the Staten Island Project area and the general categories of

flora and fauna that these soil types support. In addition, studies of past environmental settings of the regional northeast and Lower Hudson River valley were consulted.

Walkover Survey

Prior to Phase IB subsurface hand testing, a walkover survey was conducted to document and assess present conditions. Field notes and digital photographs were taken of the area. Environmental information documented on project maps during the walkover included the presence, types, and extent of fresh water; and natural features of the terrain such as hills, ridges and terraces, as well as any areas of disturbance.

Typically encountered disturbances within a given project area may include those resulting from agricultural plowing, gravel or soil mining, or previous construction, grading, development and infilling activities. Experience indicates that such disturbances can reduce the probability for encountering contextually intact archaeological sites. Although infilling and other types of visible development is likely the most common type of disturbance in a given area and can remove artifacts from their primary context, visual evidence of development and infilling on the surface does not necessarily mean subsurface cultural deposits are compromised. For example, it is possible that the creation of made land by infilling could cap and preserve intact Holocene land surfaces that could contain archaeological resources.

Another purpose of the walkover survey was to document surface indications of archaeological sites. While pre-contact sites are most frequently found below ground, artifact scatters are sometimes exposed on the surface. Post-contact archaeological site types that are typically visible include foundations or other building remnants, features associated with former transportation networks, and trash deposits.

Archaeological Sensitivity

Information collected during the previous archaeological overview survey (Elquist and Cherau 2011) was used to develop a predictive model to assess the potential for the presence of cultural resources, the types of sites that might be found, and their possible temporal and cultural affiliation. Route Variation 50 as a whole was characterized as having high, moderate, low or no potential for archaeological resources to be present. Areas with low to no potential to contain sites are those that can be excluded from further field investigations primarily because of extensive disturbances. Table 2-3 summarizes the different factors used to develop the archaeological sensitivity rankings for the Project APE. The Route Variation 50 additional workspace was characterized as having high sensitivity for pre-contact resources and moderate sensitivity for post-contact resources in the previous archaeological overview assessment (Elquist and Cherau 2011), the results of which are further detailed in Chapter 5. Subsurface testing was conducting in and beyond the northern and eastern limits of the additional workspace in all archaeologically sensitive areas.

Subsurface Testing

The Phase IB fieldwork was completed between March 29 and April 8, 2011. The goal of the survey for the Route Variation 50 additional workspace was to locate and identify any archaeological resources that may be impacted by proposed construction activities, and to provide a preliminary assessment of the potential significance of any resources identified. PAL's Phase IB archaeological survey methodology was formulated according to the standards and guidelines set forth in *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (New York Archaeological Council [NYAC] 1994) adopted by the OPRHP; and the standards and guidelines set forth in *Landmarks Preservation Commission Guidelines for Archaeological Work in New York City* (LPC 2002).

It was originally estimated that 34 to 42 test pits would be needed to adequately test the workspace APE. Additional Phase IB testing in the form of test pits placed beyond the workspace limits to the north and east, and as larger excavation units (EUs) was also conducted to collect additional information on the spatial distribution, density, and complexity of the cultural deposits. This additional testing was conducted following consultation with the NY SHPO and LPC (see Appendix A). As a result, a total of 64, 50-centimeter (cm) diameter test pits were excavated along linear transects arranged as a 15-meter (m) staggered grid (Transects A thru H), as judgmental test pits (JTPs 1 thru 13), testing arrays (A01 thru A03), and as four larger EUs measuring 0.5-x-1-meter (m) (EU 01) and 1-x-1-m

Table 2-3. Archaeological Sensitivity Rankings Used for the NJ-NY Expansion Project.

Presence of Sites		Proximity to Favorable Cultural/Environmental Characteristics			Degree of Disturbance			Sensitivity Ranking
Known	Unknown	< 150 m	≥ 150 ≤ 500 m	> 500 m	None/Minimal	Moderate	Extensive	
•		•			•			High
•		•				•		High
•		•					•	Low
•			•		•			High
•			•			•		High
•			•				•	Low
•				•	•			High
•				•		•		High
•				•			•	Low
	•	•			•			High
	•	•				•		Moderate
	•	•					•	No
	•		•		•			Moderate
	•		•			•		Moderate
	•		•				•	No
	•			•	•			Moderate
	•			•		•		Low
	•			•			•	No
							•	No

(EUs 02 thru 04) in size. The JTPs were placed to supplement the grid testing, and in areas too small to accommodate grid testing. The arrays test pits were placed at 5-m intervals in each of the cardinal directions around certain test pits in an effort to better assess the nature and extent of the deposits at those locations. The EUs were placed adjacent to test pits that yielded potentially diagnostic materials or tools in order to further assess the nature of the deposits at these locations.

All testing units were hand excavated by shovel in arbitrary 10-cm levels to sterile subsoils unless impeded by rocks, large roots, water table or other obstructions, and excavated soils were screened through ¼-inch hardware cloth. Any cultural materials remaining in the screen were collected and their provenience recorded. Soil profiles, including the horizons and/or strata, colors and textures were recorded for each unit on standardized PAL field forms. Upon completion, test units were backfilled and restored to their original ground contour surface. Digital photographs were taken of the general site and testing locations, and of representative unit profiles. Each test unit was plotted on a sketch map and coordinates were taken using a Trimble GeoXT sub-meter GPS unit.

Laboratory Processing and Analysis

Processing

All cultural materials recovered during the archaeological investigations were returned to the laboratory facilities at PAL on a weekly basis where they were organized by site and provenience and recorded and logged in. Cultural materials were sorted by type and either dry brushed or cleaned with tap water depending on the material or artifact type and condition.

Cataloging and Analyses

All cultural materials were cataloged using a customized computer program designed in Microsoft Access 2007. The program is a relational database, which provides the flexibility that is needed when cataloging archaeological collections that often contain disparate cultural materials such as stone, ceramics, and/or glass. Artifacts with similar morphological attributes are grouped into lots, which allows for faster and more efficient cataloging. The artifacts are stored in 2-millimeter thick polyethylene resealable bags with acid-free tags containing provenience identification information. The artifacts are placed in acid-free boxes that are labeled and temporarily stored in PAL's curatorial facility in accordance with current NPS standards.

Culturally modified lithic materials, such as stone tools and chipping debris, were identified in terms of material, size (0–1 cm, 1–3 cm, 3–5 cm, etc.), and color. A lithic-type collection, maintained at PAL and containing materials from various source areas in New York and Pennsylvania and nearby regions such as New England, was utilized in the identification of all lithic materials. Chipping debris was classified as either flakes or shatter. Pieces of debitage showing evidence of a striking platform, bulbs of percussion, or identifiable dorsal or ventral surfaces were called flakes. Debitage without these attributes, and exhibiting angular or blocky forms, were classified as shatter. Lithic debris was examined for edges that had been modified by use wear or intentional retouch.

Non-lithic artifacts were cataloged by material (e.g., ceramic, glass, coal, synthetic) and functional (e.g., plate, bowl, bottle, building material) categories. Artifacts having known dates of manufacture such as ceramics were also identified in terms of type (e.g., redware, pearlware, whiteware) when possible. In addition, ceramic sherds and bottle glass were examined for distinguishing attributes that provide more precise date ranges of manufacture and use. These included maker's marks, decorative patterns, and embossed or raised lettering. Tentative dating of post-contact archaeological resources was performed using ceramic indices according to Hume (1969), Miller (1990, 1991), Miller and Hurry (1983), and South (1977). An analysis of the different nail and bottle types was also used to refine the tentative date ranges of historic occupation generated by the ceramic assemblages. Analyses of the cultural materials recovered during the archaeological investigations also included mapping the density and horizontal and vertical distribution of these materials within the project area.

Curation

Recovered cultural materials and related documentation (e.g., field forms and notes, maps, photographs, report) are organized and stored in acid-free Hollinger boxes with box content lists and labels printed on acid-free paper. These boxes are temporarily stored at PAL according to curation guidelines established by the Secretary of Interior standards 36 CFR 79, as well as in accordance with *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (NYAC 1994) and LPC guidelines (2002) until such time as permanent repository can be determined in consultation with the NY SHPO and the New York City Landmarks Preservation Commission.

CHAPTER THREE

ENVIRONMENTAL CONTEXT

The environmental context of a given area, including its geology, topography, hydrology, and natural resources, played an important role in influencing the settlement and land use of human populations in the past. This chapter presents an overview of the environmental setting of the lower Hudson Valley and New York Bay, with specific reference to the Staten Island study area. The overview focuses on local physiography, bedrock and surficial geology, soils, and hydrology.

Geology and Geomorphology

The Project area is situated in the northwest part of Staten Island within the Piedmont Lowland physiographic province, just west of the Atlantic Coastal Plain province (Figure 3-1). The area also lies along the eastern edge of the broad lowland known as the Newark basin that extends from Watchung Mountain on the west to the Hudson River on the east. The final Pleistocene glaciation, known as the Wisconsin Stage, occurred about 22,000 years ago. The glacier was largely confined to Canada and northern New York, but one lobe (the Hudson-Champlain Lobe of the Woodfordian ice sheet) expanded to New York Harbor at its maximum (Sirken and Bokuniewicz 2006). Over the next several thousand years, the slow advancing and rapid melting of the ice sheets depressed and shaped the land while scouring its surface and depositing debris. The most recent glacial advance scoured the Hudson valley to

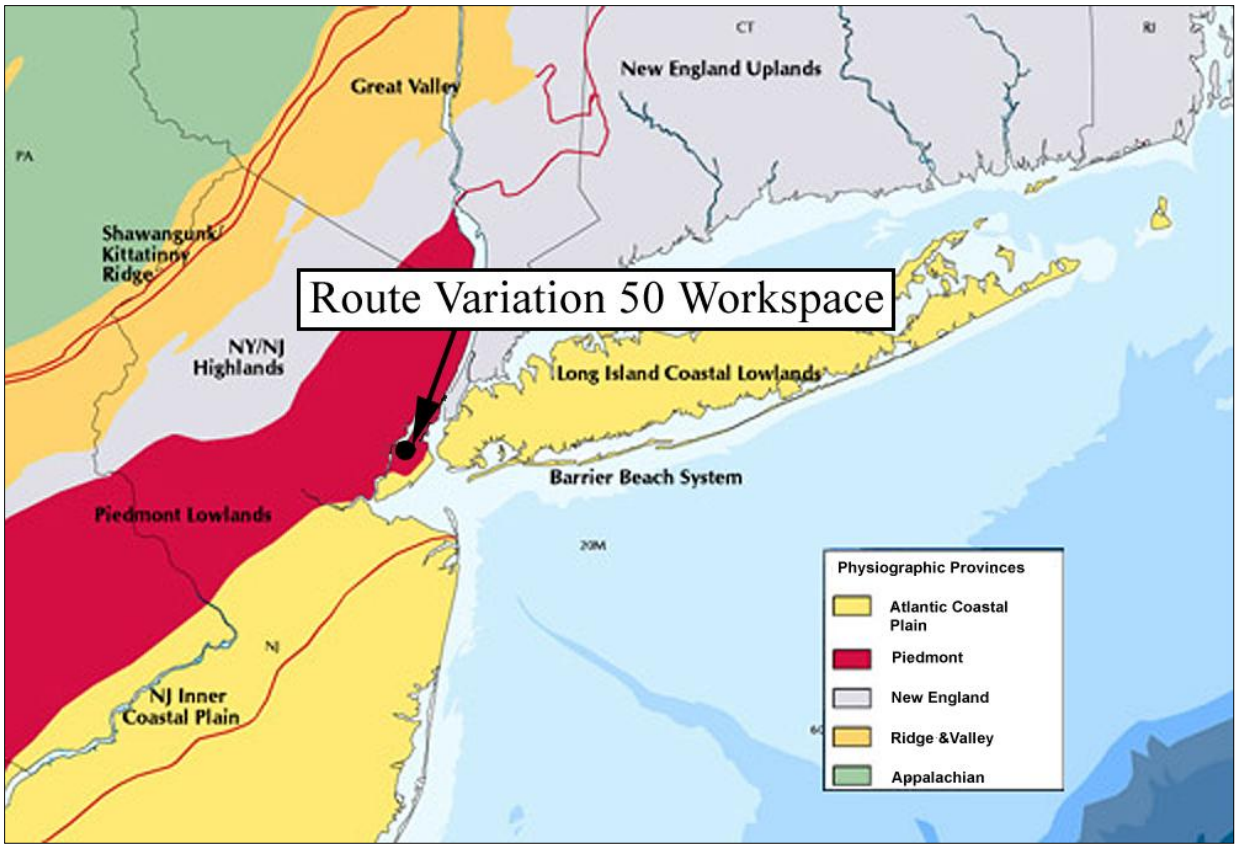


Figure 3-1. Map of physiographic provinces with the Project area (source: U.S. Fish and Wildlife Service [USFWS] 1997).

a depth of approximately 488–650 feet and glacial retreat yielded the deep U-shape trough characteristic of the Hudson River valley (Levinton and Waldman 2006).

The maximum extent of the Hudson-Champlain Lobe is marked by the Harbor Hill terminal moraine, which traversed from near Perth Amboy across the New York Harbor area/Staten Island to the northern portion of western Long Island. By around 19,000 years ago, glacial meltwater lakes began to form behind the natural dams created by the Watchung Mountains, the Palisades, and the terminal moraines. The principal proglacial lakes in the region include the Hudson, Passaic, Hackensack, and Bayonne. The freshwater lakes covered much of the area for a period of approximately 2,500 years and deposited varved clay layers (Sanders 1974:24–25). The lakes appear to have rapidly drained toward the end of the glaciation. Catastrophic drainage of Lake Hackensack, which occupied the Hackensack Valley west of the Project area, breached the Harbor Hill moraine and established the Arthur Kill fluvial valley along the west side of Staten Island.

With the retreat of the massive ice sheet, land formerly covered by ice began to undergo isostatic rebound, accompanied by a rising sea level (Lewis 1997). It is estimated that at the glacial maximum, about 19,000 years ago, the world sea level was 400 to 460 ft lower than at present and the shoreline was about 100 to 120 miles from the Lower Hudson Harbor. As the glaciers melted, sea levels rose faster than the rate of glacial rebound, resulting in a marine transgression over time of the Hudson River valley.

The bedrock formation underlying the Staten Island portion of the Project area consists of Early Jurassic period Palisades Diabase Sill (Trp) comprised of plagioclase feldspar, augite, and quartz (Pagano 1994). It occurs in a belt that stretches northeast to southwest in the northwest portion of western Staten Island, NY, adjacent to a belt of Lockatong Formation (Figure 3-2). Surficial geologic outcrops of limestone and other formations (e.g., Jacksonburg, Kittatinny, and Onandaga) located some 25 miles west of Staten Island are potential local sources of chert materials utilized by the former Native American inhabitants of the region. Glacial moraine deposits in the form of cobbles and pebbles are also possible sources of lithic raw materials (Marshall 1982).

Hydrology

Staten Island is located along New York Bay, a tidal estuary at the mouth of the Hudson River. The Hudson River is a 315 mile river that flows from its headwaters in the Adirondack Mountains to its mouth in Upper New York Bay. The Hudson River is fed by 25 tributary rivers and creeks, its principal tributary being the Mohawk River. The lower half (more than 150 miles) of the river, south of Troy NY, is a tidally influenced estuary. The lower half of the river flows through the Hudson Highlands, the Hudson lowlands, and the terminal moraine of the last glaciation at the narrows before reaching the Atlantic Ocean (Sirken and Bokuniewicz 2006).

The Hudson has been known by many names including *Muh-he-kun-ne-tuk*, (meaning “great waters in constant motion” or "the river that flows both ways") by the Iroquois, *Muhheakantuck* by the Lenape, the *Manhatees* by Henry Hudson, and officially *the River of Prince Mauritius* (of Nassau) by the Dutch (NYDEC 2009). The Hudson River was also named the North River by the Dutch in the 1700s, a name that continued to be used by inhabitants of New York until the early 1900s, and continues to be used by mariners. In 1664, the English applied the name Hudson, after the Englishman who explored the river in 1609 for the Dutch East India Company.

Geologically, the Hudson is sometimes referred to as a drowned river. During maximum draw-down at around 16,000 years ago, sea level was approximately 400 feet lower than present day and the mouth of the Hudson River was about 120 miles east of its present site extending to near the edge of the continental shelf (Boyle 1979). As the glaciers melted, waters filled the valley trough, dammed by glacial moraines (Geyer and Chant 2006). Rising sea levels that followed moraine collapse resulted in a marine incursion that drowned the coastal plain, including portions that contained the Hudson River channel. Estuarine conditions began to develop in the Hudson by approximately 12,000 years ago, reaching Manhattan by approximately 10,000 years ago (Sirken and Bokuniewicz 2006). At that time, currently submerged shoreline areas along Staten Island and the oyster ridge along the eastern coast of New Jersey would have been exposed land. By about 5,000–4,000 years ago, rising sea levels would have reached the edges of the shallow shoreline ridges and small salt marshes would have gradually formed in lowland areas. As rising sea levels gradually inundated the bay, between approximately 2,000 and 4,000 years ago, these ridges became first meadow and then marsh. This sequence was followed by the development of oyster bay habitat

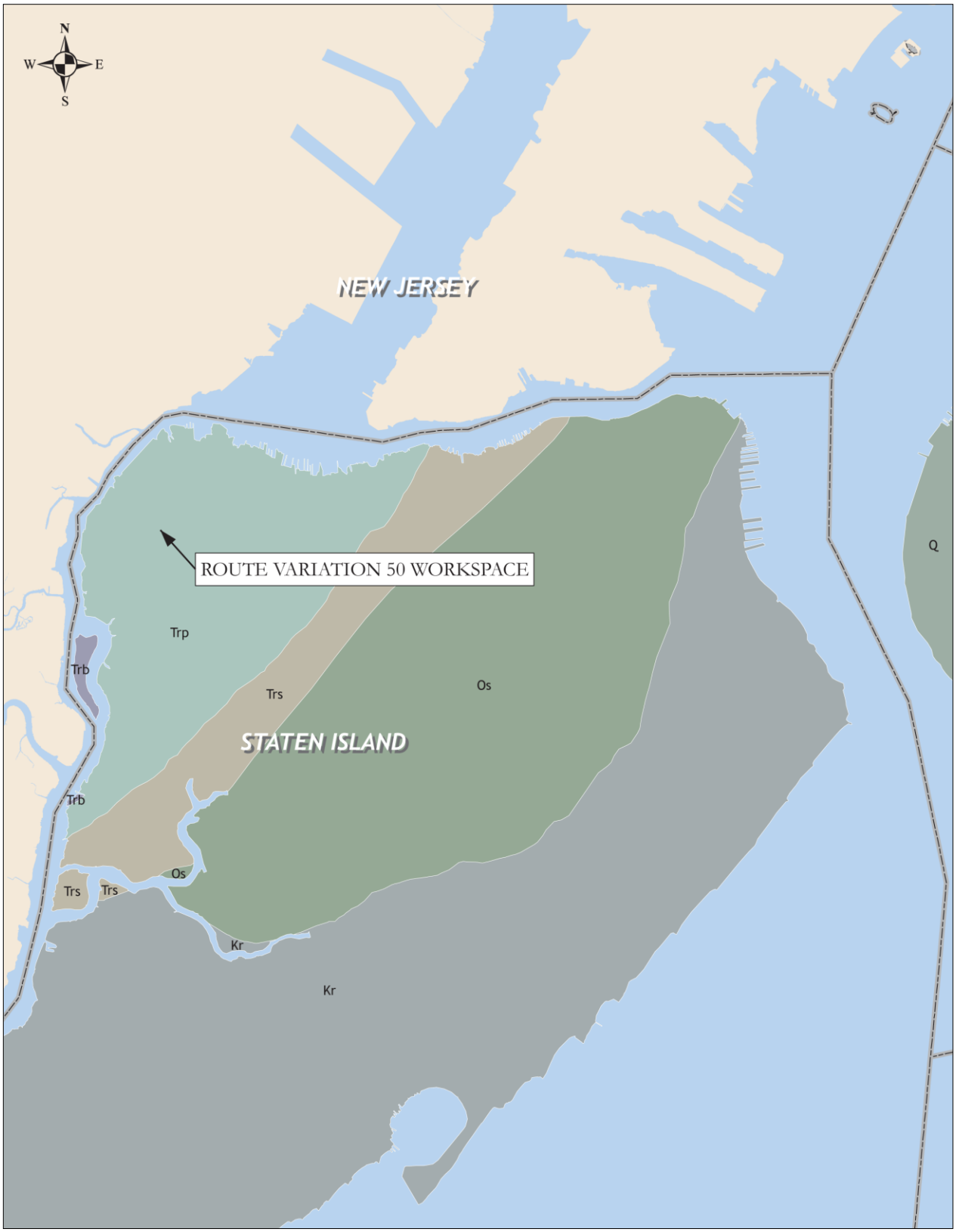


Figure 3-2. Bedrock geology map of Staten Island with the Project area (source: Dicken et al. 2008).

that typified the area in the early post-contact period. These oyster beds likely formed within the past 2,000 to 2,500 years (HRI 1993; Kardas and Larrabee 1976; Pousson 1986; Wolfe 1977).

Staten Island is bounded to the north and west by major stream channels (Arthur Kill and Kill Van Kull). Historically, the major stream channels of Upper New York Bay, including the Hudson have played an important role in New York City area commerce and transportation. The Kill Van Kull and the Arthur Kill are tidal straights. The name *kill* comes from the Dutch word *kille*, meaning riverbed or water channel. The Arthur Kill channel is approximately 10 miles long and connects Raritan Bay on its south end with Newark Bay at its north end. The Staten Island shoreline along Arthur Kill is lined with salt marshes. The Arthur Kill channel was created when glacial Lake Hackensack breached the terminal moraine and catastrophically drained. The channel may have been the primary drainage in the region for a short period, during a time when the main channel of the Hudson was still blocked at the narrows by the moraine. The Kill Van Kull is an approximately 3-mile long channel that separates Staten Island from Bayonne, New Jersey. The channel connects Newark Bay with Upper New York Bay and, as passage for marine traffic between Manhattan and the industrial towns of New Jersey, is historically one of the most important channels for commerce in the region.

The additional workspace lies on a raised linear promontory historically known as Old Place Neck between Old Place Creek to the south and Bridge Creek to the north. Both Old Place and Bridge creeks are tidally influenced and associated with wetlands. Old Place Creek drains west into the Arthur Kill, and Bridge Creek drains to the northwest into the Kill Van Kull near its juncture with the Arthur Kill.

Soils

Soils at the Route Variation 50 additional workspace are mapped as Pavement and buildings, wet substratum-Laguardia-Ebbets complex (Figure 3-3). This soils complex (Map unit 101) is typically found on 0-8 percent slopes and consists of a mixture of natural soils materials and construction debris over swamp, tidal marsh, or water. This soil unit is anthropogenic in origin, varies in coarse content, and up to 80 percent of its mapped surface area is covered with impervious pavement and buildings (NRCS 2005).

Vegetation and Fauna

Climate and vegetation in the northeast United States has exhibited significant variability since the last glacial maximum. Prior to 9,000 years ago, vegetation regimes are difficult to reconstruct as no modern analogs exist. However, based on the persistence of an abundance of sedges and grasses in paleoenvironmental records dating to between ca. 14,000 and 11,600 with tree pollen assemblages dominated by boreal species, the environment is interpreted as reflecting more open spruce-dominated parkland than that seen in modern, closed boreal forests (Davis 1969; Overpeck et al. 1992). Following the retreat of glaciers and attendant warming, pine began to increase at the expense of more cold tolerant species like spruce in the region, though the warming trend was temporarily reversed during two cooling periods between 13,000 and 8,000 years ago known as the Younger Dryas and "8.2kyr" events (Broecker et al. 1985, Shuman et al. 2002).

In southeastern New York, pine, spruce and sedges dominated an open landscape ca. 12,600 years ago after which a mixed boreal-temperate forest developed containing pine and spruce mixed with oak, ash, hornbeam and fir moving into the area (Maenza-Gmelch 1997). Pine and oak became increasingly abundant in the general region after 11,600 years ago and an aridity maximum was reached by 9,000 years ago (Shuman et al. 2004; Webb et al. 1993). Over time as conditions become warmer, vegetation changes on a regional scale reflect less abundant pine and increases in oak, beech, and hemlock, though pine likely remains abundant on well-drained soils. Vegetation development after this time reflects the establishment of oak-dominated woods mixed with hickory, chestnut, beech and other deciduous trees that moved into the region from the south in successive expansions until forest composition resembled that of today ca. 2,000 years ago (Davis 1969; Webb et al. 1993). Subsequent climate and vegetation changes include the Medieval Warm period characterized by warm drought-like conditions in southeast New York where pollen records indicate an increase in pine and hickory at the expense of oak (Pederson et al. 2005). This was followed by a return to cooler and moister conditions known as the Little Ice Age reflected in the regional pollen data by increases in spruce and hemlock (Pederson et al. 2005). Fossil pollen records indicate declines in tree pollen throughout the region after European settlement due to impacts from logging, wood cutting, and agriculture.

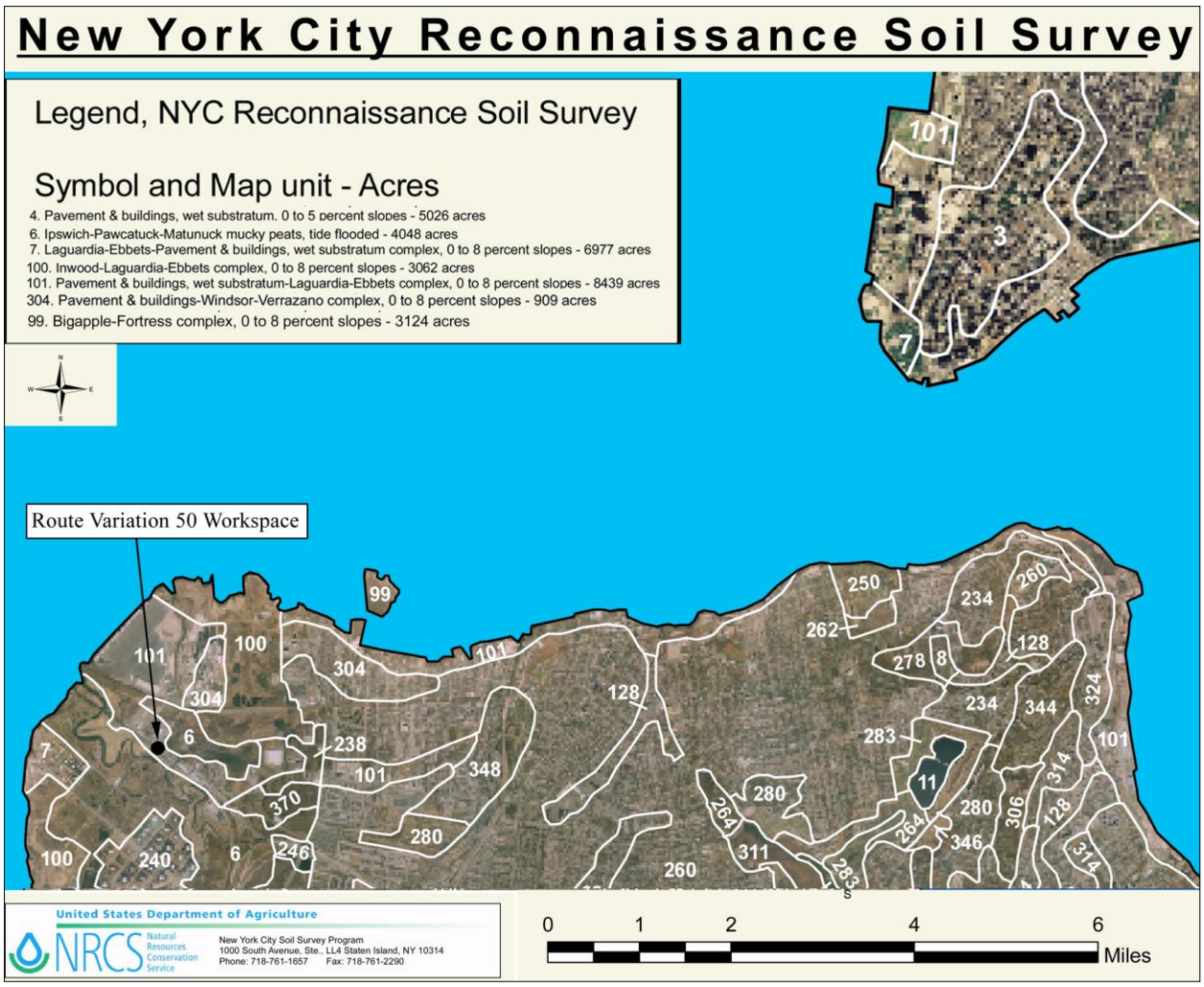


Figure 3-3. Soils map of Staten Island with the Project area (source: NRCS 2005).

Terrestrial faunal resources available for exploitation by pre-contact inhabitants of the region prior to the Holocene could have included big game such as caribou and elk, and megafauna species such as giant beaver, mammoth, and mastodon. Remains of both of these latter megafauna have been found on both Staten Island and nearby New Jersey (Boesch 1994). Finds from the Shawnee-Minisink Site in Pennsylvania suggest that people during this time could also have been utilizing other types of resources other than big game, such as waterfowl, fish, and plants (Kauffman and Dent 1982). Following the onset of warming after the glacial period, the "modern" suite of Holocene fauna was present in the area including deer, elk, bear, and turkey.

Habitats within the Hudson estuary, including mudflats and tidal marshes, support an enormous diversity of resources including waterfowl, fish, and shellfish (NYCDEC 2009). Salt marshes were also an important source of salt hay collected by early Euro-American settlers for animal fodder. More than 200 species of fish are found in the Hudson River and its tributaries including striped bass, largemouth bass, sea sturgeon, bluefish, white perch, shad, and blue crab (Boyle 1979). Historically, the river supported immense populations of herring and sturgeon. Natural resources in the river and estuary were negatively affected by pollution; however, preservation efforts beginning in the late nineteenth century have helped to restore and protect the estuaries natural resources. Today, the Hudson River estuary is reportedly one of the healthiest in the world (NYCDEC 2009).

The large underwater reef on the Jersey side of the Harbor was historically one of the largest oyster beds in the world and was a staple of Native American diet as well as the Dutch and other European groups that followed, until the end of the nineteenth century. The area was called Oyster Bay in the early post-contact period because of the

large population of oysters (*Crassostrea virginica*) that grew in the waters of the shallow bay. Hard clams, blue mussel and other mollusks were also likely to be present in the area (Pousson 1986:10). The oyster beds were finally closed in the early twentieth century due to over-harvesting and pollution (Kardas and Larabee 1978).

Existing Conditions

The Route Variation 50 additional workspace lies within a vacant wooded area consisting of mature and second-growth trees dominated by oak with an understory of sparse brush, green briar, and poison ivy (Figure 3-4; Photograph 3-1). The landform containing the workspace, historically known as Old Place or Tunissen's Neck, consists of a level, elevated area overlooking tidal marsh wetlands located north and east associated with Bridge Creek (Photograph 3-2). The existing M&R 058 Station facilities lie along the west side of the workspace (Photograph 3-3), and the Goethal's Bridge roadways to the south (Figure 3-4). Observed disturbance within or adjacent to the workspace includes an approximately 5m wide graded area along the fence-line of the existing M&R 058 facilities where subsoil was observed on the surface, the roadbank on the north side of Goethal's Bridge Road North, and a possible excavated depression along the northwest side of the workspace that contained piles of dirt and debris including part of a modern concrete and cinder block structure and utility poles (Photograph 3-5). The depression is currently delineated as a wetland (see Figure 3-4).

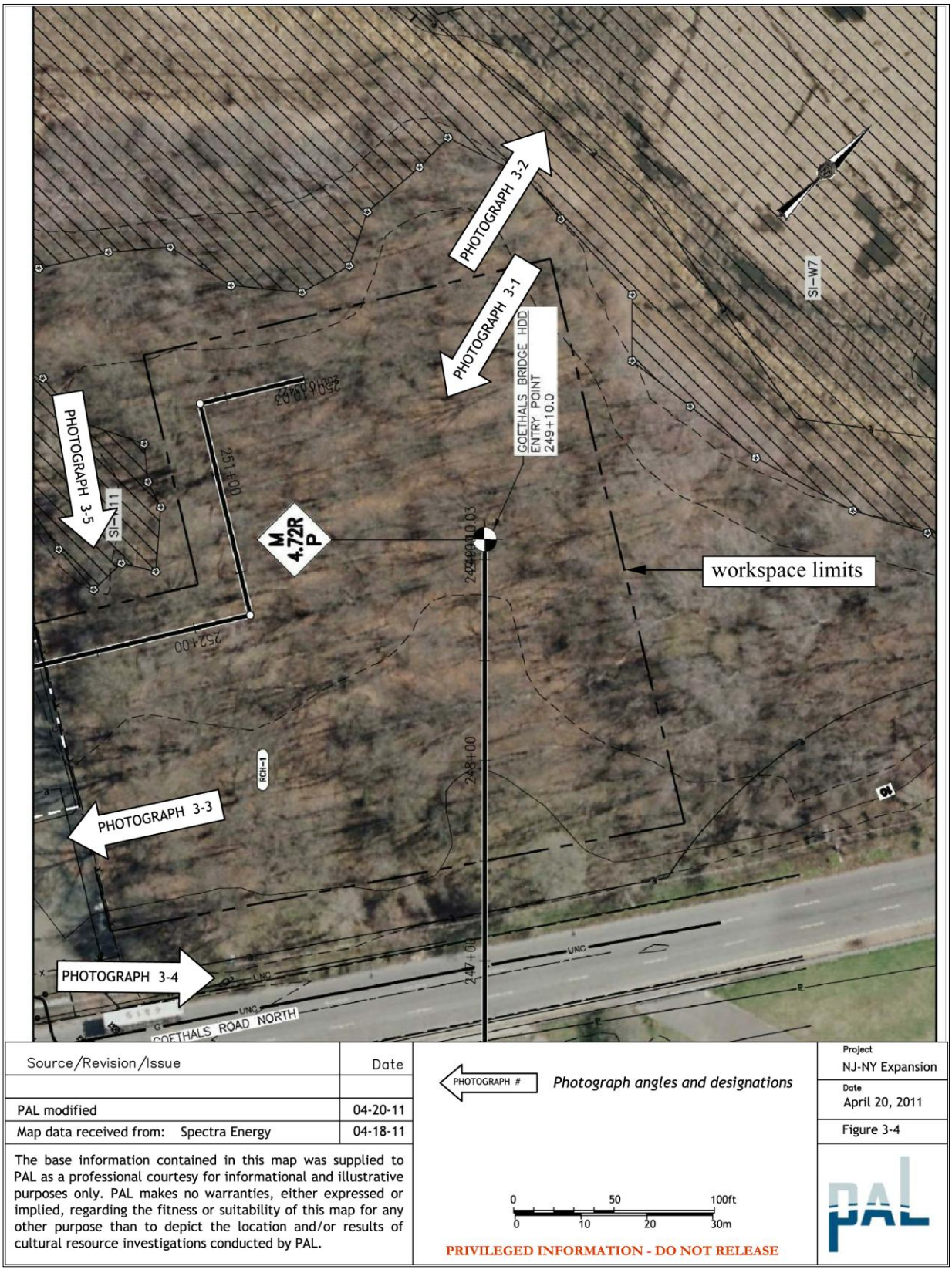


Figure 3-4. Map of Route Variation 50 workspace showing the location and orientation of Project area photographs.

Photograph 3-1. Overview of the wooded Route Variation 50 workspace, view looking southwest.

Photograph 3-2. Tidal marsh wetlands north and east of the Route Variation 50 workspace, view northeast.

Photograph 3-3. Existing M&R 058 facilities west of the Route Variation 50 workspace, view northwest.

Photograph 3-4. Goethal's Road North south of the Route Variation 50 workspace, view southeast.

Photograph 3-5. Modern debris dump and dirt piles in irregular depression/wetland to northwest of Route Variation 50 workspace, view southwest.

CHAPTER FOUR

CULTURAL CONTEXT

In order to gain an understanding of the history of human occupation of the Project area it is necessary to have an understanding about the general history, and settlement and subsistence patterns, and other historical developments of the northeast region, with a particular focus on the territory encompassed by the lower Hudson River valley and New York Bay, and on Staten Island in particular. The following review is by no means exhaustive, but provides a framework within which to predict and interpret archaeological resources identified within the Project area. The information for this context has been drawn from the results of professional CRM surveys, pre-contact and post-contact period culture histories, and site-specific histories.

Pre-Contact Period

Most of the pre-contact and contact period sites reported in the vicinity of the study area were noted by early settlers or identified by amateur archaeologists over the course of the last century. While urban development has obscured the archaeological record of the Project area and though few of these sites were clearly mapped and identified, their general locations combined with the fairly large number of sites reported indicates a general level of sensitivity for pre-contact period sites in the area. Several general surveys for archaeological sites were conducted in the early 1900s in the greater New York City area (Skinner 1909a, 1909b; Skinner and Schrabisch 1913; Finch 1909; Parker 1920). These surveys included interviews with local collectors at a time when collectors were still active and finding Native American artifacts (Griswold 2002).

Several village sites (9), camp sites (2), and cemeteries (2) have been reported on the northern (Kill Van Kull) and northwestern (Arthur Kill) shorelines of Staten Island, New York from Mariner's Harbor west and south to the mouth of the Fresh Kills (Skinner 1909a; Skinner and Schrabisch 1913). Many sites span the Archaic through the contact periods (Kardas and Larabee 1980) and include a series of village and camp sites from Mariner's Harbor west to the shore of Howland Hook, including the large, multi-component Bowman's Brook Site (Ritchie 1980; Skinner 1909a; Smith 1950), the Goodrich Site (Anderson 1970; Eisenberg 1982; Ottesen and Williams 1969; Skinner 1909a), the Old Place Neck Village Site (Anderson 1964, 1967; Skinner 1909a; Skinner and Schrabisch 1913), the Arlington Place Site, the Arlington Station Site, the Arlington Avenue Site, and Gerties Knoll (Skinner 1909a). Several campsites and a village site with burials (Ascension Church Site) are also reported in the Port Richmond and Harbor Hills (West New Brighton) areas of Staten Island (Skinner 1909a).

A number of archaeological sites were also reported in shoreline areas in the lower Hudson in neighboring areas of New Jersey including a large village site with shell pits and a camp site on Constable Hook; an important Indian village and trading station at Communipaw, campsites along the western shore and near the Bergen Point shoreline in Bayonne, at Greenville Point below Jersey City, and at Paulus Hook in Jersey City. Additionally, Finch (1909) and Parker (1920) reported 10 archaeological sites on Manhattan Island (including village sites, shell middens, camp sites, and find spots), though nearly all of the sites were located in the northern part of Manhattan. Several pre-contact sites were also identified in the New York City area during CRM projects conducted in the 1980s (Lenik 1992). These include four sites on Manhattan Island, seven sites on Staten Island, and two sites in the Bronx.

Many of the sites these previously identified sites have not been subject to professional archeological excavation, however, and detailed research information about the sites is lacking (e.g., site size, function, temporal information). It is possible that many, if not most, of these previously reported sites have been disturbed or destroyed through extensive development for railroads, the shipping industry (e.g., dock and wharf expansion along the waterfront, dredging), roads, urban residential communities, and industry. Accordingly, there are special challenges to identifying, delineating, or evaluating sites in these contexts, and any newly identified sites within this type of urban area has the potential to be significant.

PaleoIndian Period (12,500-10,000 B.P.)

The earliest evidence for human occupation of the Northeast region dates from the PaleoIndian Period, which is closely associated with the northward retreat of the final Wisconsin glaciers and the moderation of climatic conditions. By 12,000 B.P., the spruce forest vegetation and glacial lakes of the postglacial environment supported emergent floral and faunal resources, which may have attracted pre-contact groups (Nicholas 1988). Sea levels were much lower during this period, and the study area was located well-inland from the Atlantic coastline.

The PaleoIndian Period is not well understood due to the scarcity of sites dating to this time period. Traditional interpretations of PaleoIndian subsistence patterns include a primary reliance on hunting large game. More recent investigations have determined that a broader subsistence base that incorporated large and small mammals, birds, and plants, is a more likely possibility. In New York, it is thought that these people did exploit a wider array of resources, such as smaller game and seasonal plant foods (Ritchie and Funk 1973), and may have operated within a restricted territory (Eisenberg 1978). High, well-drained areas near streams or wetlands were preferred locations in the Northeast for highly mobile PaleoIndian groups, though rock shelters near lithic sources and lower river terraces were also subject to occupation and use (Funk 1976; Marshall 1982; Moeller 1980; Ritchie 1980).

PaleoIndian Period sites are typified by the presence of fluted, lanceolate projectile points in an isolated context. Occasionally, large flake scrapers, bifaces, unifaces, and fragments of esquilles and knives are also found (Funk 1978; Ritchie and Funk 1973). These stone tools were often fashioned from non-local cherts originating in eastern New York and jasper from Pennsylvania and New Jersey.

A number of PaleoIndian sites are known from the southern portion of Staten Island. The Port Mobil Site on the southwestern shore of Staten Island yielded more than 100 tools that included fluted points, drills, gravers, spokeshaves, knives, scrapers, and cores, indicating a more extensive occupation (Kraft 1977; Ritchie 1980). Additional fluted points and tools were recovered nearby along the tidal beach of the Arthur Kill. Isolated finds of fluted points have also been found on the southwest part of Staten Island (Wagner and Siegel 1996). Fluted points were also recovered from the Cutting Site and at Kreischerville, and lithics thought to be PaleoIndian in age were found at Smoking Point and Charleston beach (Boesch 1994). Lastly, a possible fluted biface resembling a PaleoIndian point was also reportedly recovered from the Old Place Site in close proximity to the project area (Payne and Baumgardt 1986:II-13).

Archaic Period (10,000-3000 B.P.)

The Archaic Period in the Northeast is characterized by more generalized hunter-gatherer strategies than the PaleoIndian Period. It is subdivided into Early, Middle, and Late periods on the basis of changes in environment, projectile point styles, and settlement patterning (Lavin and Mozzi 1996; McBride 1984; Snow 1980).

Early Archaic Period (10,000-8000 B.P.)

The Early Archaic Period was characterized by a gradually warming climate following the cold period associated with the Younger Dryas. By the end of the period the environment was dominated by a mixed pine-hardwood forest, and megafauna populations were replaced by smaller game such as deer and bear. The lithic technology of the Early Archaic reflects a more diversified subsistence strategy, including beaked unifacial edge tools, cores, flakes, hammerstones, milling slabs, and notched pebble sinkers, indicating an increased utilization of plant and fish resources (Robinson 1992). Diagnostic projectile points consist of bifurcate-base (e.g., Kanawha, LeCroy, MacCorckle), Kirk variant and Palmer point types, among others. Characteristic of assemblages is the predominance of expedient tools made from local lithic sources.

Early Archaic settlement remains somewhat speculative in the Northeast, but evidence indicates that a complex multisite settlement system may have been established, with different site locations indicating exploitation of varied resources and environmental settings (Johnson 1993; Ritchie 1984). The nearly exclusive use of local stone for tool production also suggests a less mobile lifestyle. Site locations include tidal inlets, coves, and bays, and on freshwater ponds (Ritchie 1980), and some finds have been associated with shell middens in the Lower Hudson region (Kraft and Mounier 1982a). On Staten Island, Early Archaic components have been identified from several sites including

the Hollowell, Old Place, Charleston Beach, Wards Point, Travis, and Richmond Hill sites (Boesch 1994; Platt 1997).

Middle Archaic Period (8000-5000 B.P.)

Middle Archaic Period activity in southern New York State reflects adaptations to more diversified subsistence strategies, particularly along major rivers and streams, in response to changing environments. Pine dominated forest was eventually replaced by mixed hardwoods dominated by oak and hickory as well as mast trees like beech. This was part of an ideal environment for wild game, birds, and edible roots, berries, and nuts. Groups tended to operate within a system of planned seasonal movement with a multi-site settlement system firmly established by that time. The types of subsistence activities employed included hunting along with the regular harvesting of anadromous fish and plant resources. Shellfishing stations also begin to appear in the lower Hudson estuary during this period (Brennan 1981).

Typical Middle Archaic point types in the Northeast include Neville/Stanly, Stark/Morrow Mountain, Otter Creek, and Guilford varieties, as well as points similar to Vosburg and Brewerton types (Custer 1996; Snow 1980). Ground-stone technology introduced a variety of tool types into the lithic assemblage including net sinkers, plummets, grooved adzes, axes, gouges, and atlatl weights (Dincauze 1976). On Staten Island, sites with Middle Archaic components have been identified at the Wards Point and Old Place sites, and possible Middle Archaic components have been identified at Chemical Lane and Harik's Sand Ground.

Late and Transitional Archaic Period (5000-2700 B.P.)

The cultural traditions of the Late Archaic Period are better documented and understood than earlier periods. The period is traditionally considered to be a time of cultural fluorescence, as reflected in burial ceremonialism, population increases, and evidence for the establishment of long-distance exchange networks (Ritchie 1980; Snow 1980).

The period was marked by a climatic shift to drier and warmer conditions. Oak, pine, and beech trees reached their full extent, and wetlands became more abundant along river margins. Wetland and estuarine areas appear to have been used extensively based on site distribution. The increase in density of sites and artifacts from this period coincides with this climatic warming (Funk 1972). The archaeological evidence demonstrates an increased use of shellfish, nuts, and plant resources. Perhaps in response to an increasingly resource-rich natural environment, Late Archaic populations expanded and diversified. Sites in general appear to be larger than the preceding periods, and group territories may have become established. Ritchie (1980) and others have postulated that river valleys provided abundant resource bases for pre-contact populations, who in turn heavily utilized these areas for habitation as well as special purpose activities. This shift from mixed forest uplands to riverine lowlands may help to explain the abundance of sites dating to this period in proximity to the major river drainages of eastern New York. Intensification of coastal-oriented economies is represented by vast shell middens in the lower Hudson Valley as well as the coasts of Long Island, Cape Cod, and Connecticut (Brennan 1974).

The Late Archaic Period has been divided into three major cultural traditions (Laurentian, Narrow-stemmed, Susquehanna), all of which are represented to some degree at sites in southern New York State. The Laurentian tradition (6000–4200 B.P.) was first identified in New York (Ritchie 1980). The earliest site assigned to this tradition in the Northeast is the Schafer Site, located in the Mohawk Valley of upstate New York. This site yielded cultural deposits radiocarbon dated to 6290 ± 100 B.P. (Wellman 1975). The tradition is characterized by an artifact complex containing wide-bladed points with side or corner notches such as Otter Creek, Vosburg, and a variety of Brewerton subtypes. These points often are manufactured from cherts found in parts of New York and New Jersey.

The Narrow-Stemmed tradition (4300–3500 B.P.), analogous to contracting-stemmed Piedmont tradition points, is characterized by small, thick, narrow-bladed, stemmed or notched projectile points such as Sylvan Lake, Wading River, Bare Island, Poplar Island, Lackawaxen and Taconic Stemmed, and Lamoka points. They are usually produced from locally available shale, argillite, quartz, quartzite, and rhyolite. Sites from this tradition also often contain gouges, plummets, scrapers, drills, adzes, paint stones, and pitted stones. Settlement patterns differ from the Laurentian tradition in the Northeast with larger, seasonally occupied base camps situated along major rivers, and smaller special-purpose camps located in a variety of environmental zones including terraces and uplands (McBride

1984). The nature and distribution of sites suggest a less-mobile population with communities gathering during summer months and dispersing into smaller groups during the cold weather (McBride 1984; McBride and Soulsby 1989).

At the terminal end of the Late Archaic, the Transitional Archaic Susquehanna tradition (3800–2700 B.P.) is characterized by broad spear points such as Susquehanna, Snook Kill, Koens-Crispin, and Perkiomen varieties. Narrower Orient Fishtail points are present in the latter part of the Transitional Archaic Period and their use may extend into the subsequent Early Woodland Period. Other Susquehanna assemblage artifacts consist of steatite vessels, ground axes and adzes, wing-shaped atlatl weights, and toward the end of the period, occasional steatite- or grit-tempered ceramics. Another characteristic of the Susquehanna tradition consists of increasingly complex burial ceremonialism the hallmark of which are cremation burials containing "killed" artifacts. The composition and chronological distinction of these assemblages, as well as the variety of settlement types, vary throughout the Northeast. Susquehanna tradition settlement patterns differ with those of the preceding Narrow Stemmed tradition. The pattern is similar to the Laurentian tradition, in that there are more temporary camps and specialized use of the uplands consisting of temporary occupations established near streams and swamps. Less frequent group movements and more specialized procurement strategies are inferred. In the Northeast, it is thought that communities came together near major rivers during certain parts of the year, possibly coinciding with either burial ceremonies or the harvesting of floodplain plant resources (Pagoulatos 1986).

In general, sites dating to this period are often very large and contain dense quantities and diverse materials. The Bare Island point has been identified as a major component of Late Archaic sites in the vicinity, while the Orient Phase is perhaps the most common component recognized in the Transitional Archaic (Snow 1980). Artifacts and features associated with the Orient Phase of the Transitional Archaic include Orient Fishtail projectile points, knives and drills, ground-stone tools and ornaments, soapstone vessels, ceremonial grave goods, and shell middens. Sites with Late or Transitional Archaic components on Staten Island include the Pottery Farm, Bowman's Brook, Smoking Point, Goodrich, Sandy Brook, Wort Farm, Arlington Avenue, Wards Point, Old Place, and Travis sites (Boesch 1994).

Woodland Period (3000-450 B.P.)

The Woodland Period in the Northeast is characterized by a major shift in subsistence and habitation strategies including the introduction of cultigens (maize, beans, and squash) and the use of ceramic vessels. However, evidence of horticulture has not been clearly documented in the immediate region surrounding the Project area, and it is likely that native peoples would have continued to rely heavily on coastal resources (shellfish and marine species), as well as terrestrial game and gathered foods (Gray and Pape Inc. 2005). Site size and complexity also increased, suggesting increased sedentism and social complexity (Dragoo 1976). The Woodland Period is usually subdivided into Early, Middle, and Late periods on the basis of ceramic types and political and social developments (Lavin and Mozzi 1996; Ritchie 1980; Snow 1980).

Woodland Period characteristics of the lower Hudson region appear to have increasingly shifted settlement to riverine, and sheltered bay and estuary locations, included burial traditions that included both cremations and inhumations, and the establishment or elaboration of long-distance trade or exchange networks (Ritchie 1980; Snow 1980). The shift to coastal resources has been observed elsewhere in the Northeast including most of New England (Snow 1980). Settlement became more sedentary, and larger groups of individuals aggregated at preferred coastal/major riverine village sites.

Early Woodland Period (3000-1600 B.P.)

The identification of Early Woodland Period sites usually relies on the presence of diagnostic stemmed and side-notched Adena, Lagoon, Rossville, and Meadowood projectile points. Tools like net sinkers, bone awls, anvil stones and abraders are also artifacts characteristic of the period. The Early Woodland Period is also marked by the clear emergence of ceramic technology, replacing the soapstone vessels that had been used during the Late/Transitional Archaic periods. These ceramics consist of coarse grit-tempered (and occasionally shell-tempered), conoidal, and cord-wrapped vessels known as Vinette I. In coastal areas, Vinette I pottery has often been associated with Orient Fishtail and Susquehanna broad points. A more sophisticated ceramic type known as Vinette 2 developed slightly later. Artifact assemblages for this period comprise a high percentage of exotic lithic materials and speak to an

expansion and elaboration of long-distance trade networks. Evidence of Early Woodland occupation on Staten Island includes several multicomponent sites on the north shore of Staten Island such as the Old Place, Arlington Avenue, Arlington Place, and Bowman's Brook sites (Boesch 1994).

Middle Woodland Period (1600-1000 B.P.)

The Middle Woodland Period in the Northeast is characterized by increased diversity in ceramic style and form, the use of tropical cultigens (though evidence for this is scarce), and long-distance exchange networks (Dragoo 1976; Snow 1980). Much of our knowledge of this period is extrapolated from work done by Ritchie (1980) in New York State. Ritchie noted an increased use of plant foods such as goosefoot (*Chenopodium sp*.) in the Canoe Phase in New York, which he suggests had a substantial impact upon social and settlement patterns. Ritchie further noted an increase in the frequency and size of storage facilities (Ritchie 1980; Snow 1980). The changes in subsistence strategies led to an increasing sedentism manifested by larger and more diverse sites created through semipermanent village settlement. Year-round access to resources brought about increased settlement in coastal areas and around marshlands (Lavin 1988).

Increased sedentism led to augmented horticulture and harvested nuts, grains, and seeds became more important to the daily diet. The Middle Woodland Period is also documented by an increased diversification in ceramic vessel production as forms began to adapt for increased efficiency in cooking the changing diet (Lavin 1988). Pottery also becomes more stylistically diverse, including grit-tempered coil built vessels with stamped, incised, and dentate decoration of varying quality. Fox Creek stemmed and lanceolate points and Jack's Reef points are additionally diagnostic of the Middle Woodland Period in the area. Several Middle Woodland Period occupations have also been identified on Staten Island at the Huguenot Site, the Cutting Site, Pottery Farm, Page Avenue North, and at the Van Deventer/Fountain House (Boesch 1994).

Late Woodland Period (1000-450 B.P.)

The Late Woodland Period in the Northeast is characterized by intensification of horticulture; changes in ceramic technology, form, style, and function; and an increase in the use of exotic (non-local) lithic materials. This period is also associated with the emergence of year-round village-type sedentism; villages tended to be situated along major rivers, estuaries, and tidal marshes, while smaller temporary camps utilized by smaller, domestic units and organized task groups were situated along upland streams and inland wetlands. Overall, people appear to have aggregated in villages during much of the year.

Settlement patterns suggest a trend toward fewer and larger villages reflecting a continued reduction in residential mobility and increased sedentism. It has been hypothesized that these changes can be attributed to the introduction of maize, beans, and squash, but it is unclear how important cultigens were in the aboriginal diet in much of the northeast including the lower Hudson area (Ceci 1980; Chilton 1996; McBride 1984; Ritchie 1980). Preserved subsistence remains from Late Woodland occupations have included white-tailed deer, woodchuck, fish, birds, and small mammals. Plant remains include berries, hickory nuts, lambs-quarters, hazelnuts, and acorns. Domesticated plants have included maize, beans, and sunflower (Bendremer and Dewar 1993; McBride 1984).

Late Woodland Period artifact assemblages are characterized by Levanna projectile points and finely made collared and collarless vessels with geometric designs, and brushed, stamped, incised, and cord-marked ceramics (Lavin and Mozzi 1996; Ritchie 1980; Snow 1980). Defined territories may have been firmly established in the region by the onset of the Late Woodland. For example, during the later contact period, the area of New Jersey north of the Raritan River was considered the "territory" of Munsee speaking Lenape groups. This territorial division may be reflected in the Late Woodland Period archaeological record by differing ceramic types and burial orientations (Kraft and Mounier 1982b).

On Staten Island, Levanna points and ceramics diagnostic to the period have been recovered from the Old Place Site. In addition, the Bowman's Brook Site is located nearby and is the type site for the Bowman's Brook phase of the period. Initially reported by Skinner, his descriptions and field notes indicate that Bowman's Brook consists of a village site that contained 50 to 100 pit features, burials, clay pipes, pottery, charred hickory nuts, artifacts of antler and bone, and fragments of shell, turtle remains and sting ray spines (Skinner 1898-1909, 1909a).

Contact Period

The contact period represents an era of cataclysmic socioeconomic, political, and cultural change in the face of Native American and European interaction. Euro-American utilization of the study area could have begun as early as the sixteenth-century, when European explorers reached the eastern coast and began to interact with the Native inhabitants. The earliest accounts date to 1524, when Giovanni da Verrazano, commissioned by King Francis I of France and a silk merchant syndicate, passed through New York Bay in his navigation of the Eastern Seaboard in an attempt to find a passage to the "Indies" (Burrows and Wallace 1999:11). Sixteenth century European exploration did not result in trade or extensive contact with the native inhabitants, and though mariners, fisherman, and merchants visited the East Coast sporadically over the next century or so, there was no permanent settlement in the region.

In 1609, Henry Hudson was hired by the Dutch East India Company to locate the elusive Northeast Passage. Although he did not locate the passage, he did travel up the river that bears his name and had several contacts with the Native populations (Brasser 1978). The Dutch began trading with the native groups in the area in 1610. Although there was a fair amount of trade early on, Hudson's accounts of the Native population in the Hudson Valley region indicate that relations between the two groups were not always peaceful. At the time of European contact, native groups were referred to by numerous names, including the Delaware, by European colonists, though they generally referred to themselves as Lenape. The local indigenous peoples spoke a dialect of an Eastern Algonquian language called Munsee (Goddard 1978; Salwen 1978). The Lenape maintained autonomous, loosely structured bands that resided in small dispersed settlements (Kraft 1975).

Politically, the Munsee-speaking Lenape groups were divided into a number of main groups, who were further divided into numerous smaller political and dialectic subgroups (Ruttenber 1872). Subgroups in the project vicinity include the Hackensacks in the present Newark and Jersey City areas, Monatons, or Raritans, and Tappans, who traditionally occupied Staten Island; the Nayacks who sold their homeland in Brooklyn and later moved to Staten Island; the Wickquaesgecks or Wiechquaesgeck who occupied upper Manhattan Island; the Reckgawawanck who occupied lower Manhattan Island; and the Canarse who occupied present-day Brooklyn and Queens. The exact territories of these bands are somewhat elusive, due in part to the lack of fixed tribal boundaries (Boesch 1994; Skinner and Schrabisch 1913).

Dutch traders benefitted greatly from the fur trade and their prosperity did not go unnoticed. In 1613 or 1614, the English sent a military compliment to expel the Dutch from Manhattan and the Hudson River (PanAmerican 2003). Several repeated efforts by both the English and French failed, with the Dutch steadfastly holding their claim to the land. Realizing their tenure was under scrutiny, Dutch colonization was seen as a way to hold onto control. In 1621, the States General of the United Netherlands granted a 21-year charter for the establishment of the Dutch West India Company, with exclusive rights to trade and settlement in what they termed New Netherlands. The West India Company charter allowed qualifying individuals (usually wealthy merchants or company officials) to purchase tracts of land from the Native Americans, and Dutch settlements in Albany and New Amsterdam (New York) became established communities by 1623 (Whitcomb 1904). Trading posts were established and merchants were encouraged to begin long-term trade for furs and animal skins in the new territory. Within 10 years, European competition was so intense that Native inhabitants were offered up to three times the usual trade for a pelt by Dutch traders.

Epidemic disease, competition for trade between Native American groups, and hostilities between Natives and Europeans had substantial impacts almost immediately after the Dutch became a sustained presence in the area. In response to European aggression and increasing intratribal hostilities over trade privileges, palisaded villages began to emerge along the New York coast. A series of major and minor skirmishes among the various competing interests eventually led to local Native Americans suing the Dutch for peace in 1644. Despite this accommodation, friction persisted between the Dutch and Native Americans culminating in two more major armed conflicts over the next 20 years. The incessant violence coupled with "virgin soil" epidemics effectively decimated the native groups living in the present New York City area. On the island of Manhattan for example, the once thriving population of its original Lenape, or "Manhatan" inhabitants were reduced to 200–300 individuals by 1628 due to death by disease, or having been driven out by a competing group (Burrows and Wallace 1999:23).

Unfortunately, records dating to the early contact period are vague and Native settlements and encampments were not clearly mapped or identified, and professionally identified and documented sites are exceedingly rare. Nonetheless, it appears there were a number of important settlements on the north shore of Staten Island that were connected by a path that paralleled the Kill van Kull between West New Brighton and Howlands Hook (Bolton 1922). Archaeological deposits dating to the contact period have been identified at a number of sites on Staten Island including Ward's Point, Old Place, Corsons's Brook, Travis, New Springfield, and the Walton-Stillwell House (Boesch 1994).

Post-Contact Period

European Colonization and Settlement (ca. A.D. 1610-1800)

The earliest documented presence of Europeans on Staten Island consisted of a Dutch trading post established in 1614 (Morris 1900:35). The first attempt at permanent settlement was made in 1624 by a few Dutch Walloons and their families (Morris 1898:25–26). The attempt was unsuccessful and they retreated to New Amsterdam on present-day Manhattan (Wilson 1893). Then Director General Peter Minuit and five others subsequently purchased Staten Island from local sachems in 1626 (Burrows and Wallace 1999:24). It was subsequently part of a large grant of land made to Michael Pauw extending south from Hoboken, New Jersey and including Staten Island in 1630, though he does not appear to have made any effort to establish a settlement on the island portion of the grant, and later sold his land rights to the West India Company in 1637 (Brodhead 1853; Burrows and Wallace 1999:28; Morris 1898). Six years later, after arranging with then Director General Twiller to establish a colony on Staten Island, it was purchased again in part by David Pietersen de Vries from Native Americans (Brodhead 1853:265). A few settlers were brought by de Vries to the island by the end of 1638 (Morris 1898:28–29). Cabins were built at what later became known as Oude Dorp (or Old Town), and the settlers apparently prospered as tobacco planters until destroyed by Native Americans referred to as the Raritans in 1641. This destruction of the settlement was in retaliation for the murder and torture of Raritans ordered by Kieft who had wrongly assumed they were responsible for stealing pigs from de Vries "bouwerie" or plantation (Brodhead 1853). Kieft was blamed for angering the Raritans, and the incident, known as the "Pig War" set the stage for later widespread hostilities (Burrows and Wallace 1999).

An attempt was made to resettle at Old Town, but it was short lived as new hostilities between the Dutch and Native Americans broke out in 1642 (Morris 1898). The following year saw the start of the first of the Dutch-Indian Wars (1643–1645), which resulted in the widespread destruction and abandonment of Dutch settlements throughout most of New Netherland. After a decade or so of peace, a second war (the "Peach War") broke out between the Dutch and Natives of the area in 1655, and Old Town was destroyed for a third time. No attempt was made to resettle Staten Island following this war until 1658 when a village known as Niuew Dorp (New Town) or Stony Brook was established. Other early settlements included Cucklestown, which later became known as Richmond in 1710 (Morris 1900:439).

One of the few settlements in New Netherland that may have weathered the early hostilities was on Staten Island under the patroonship of Cornelius Melyn, a Dutch merchant (Morris 1898:37). Despite de Vries claims, Melyn had been authorized to take control of all of Staten Island and establish a colony in 1640, though he only brought a handful of settlers. He once again purchased Staten Island from the Native Americans in 1641 and obtained a letter patent (excepting deVries bouwerie), appointing him patroon of the territory (Brodhead 1853:314; Morris 1898). A decade later he was accused in court documents of smuggling contraband onto Staten Island and of tricking or bribing local Native Americans into trying to kill the then Director of New Netherland, Peter Stuysevant who was widely considered too authoritarian (Fernow 1883:159–161). Despite these and other accusations and a later arrest, Melyn kept the favor of the States General back in Holland and continued to be a thorn in Stuyvesant's side, even going so far as to independently grant land on the island for colonial settlement, and set up his own government and judiciary. Correspondence between Stuysevant and the Directors in Holland dating to 1660 indicate that Melyn had maintained his position as patroon of Staten Island, much to Stuysevant's dismay (Fernow 1883:468). Melyn's patroonship only ended when he opted to sell his holdings to the West India Company in 1661.

Settlers of Staten Island during this period included the Dutch, French Huguenots and a few British colonists. Prior to the construction of the first church at Stony Brook in 1665, worshippers on Staten Island had to content themselves with services provided on a monthly basis by ministers from New Amsterdam. Congregants gathered for

services in private homes or barns, or even outdoors (Clute 1877). Many churches for decades after the first ones were built still had their pastors supplied to them from New Jersey, New York, and Long Island. Prior to the Revolutionary War, the area known as Old Place was reportedly where a house along a road (approximating the present-day Goethals Bridge roadways) was used for religious services. The house was built around 1680 by John Tunissen, a Dutch settler near the intersection of present day Washington and Western avenues (Payne and Baumgardt 1986:35). When the building became dilapidated, a new place was selected for worship, but due to its inconvenience, the previous building was repaired and religious services resumed at the "Old Place" (Morris 1898:409). The area of Old Place was also reportedly a place of safe retreat for the Native American inhabitants and the location of the last known Indian settlement on the island (Morris 1900:162).

In 1664, Charles II determined to take control of Dutch holdings in the New World granted the territory of New Netherland including Staten Island to his brother James, the Duke of York. Soon after British ships set sail to New Netherland. The Dutch quickly capitulated to the British and land on Staten Island was immediately granted by the new British Governor, Richard Nichols to several of the officers and crew of one of the ships that had set forth to take control of the area from the Dutch (Morris 1898:64). These grantees all returned to England and never attempted to establish settlements. It was just as well, because independent of Nichols, the Duke of York had granted territory west of the Hudson River, including Staten Island to George Carteret and William Berkley. This in fact may be why settlements were not established by Nichols' grantees. Much confusion over the conflicting grants ensued. Ultimately, Carteret made no formal claim for Staten Island, but did accept a conveyance for a tract of land there from Governor Nichols (Morris 1898:136).

Staten Island was once again and for the final time purchased from Native Americans by the British in 1670 under the direction of Governor Lovelace (Morris 1898:30; Wilson 1893). There were around 100 families living on Staten Island by 1676, of predominantly Dutch and French origin. Though there were seven houses at Old Town, most people on Staten Island lived in dispersed farmsteads (Morris 1898).

Richmond County (or "shire"), which contained all of Staten Island, was established in 1683 and the central settlement of Stony Brook became the County seat (Morris 1898:93). By 1688, Staten Island had been divided into the four towns of Westfield, Southfield, Castletown, and Northfield, the latter of which contains the present-day Project area. The county seat of Richmond was transferred to the village of Richmond in 1729 (Morris 1898). Transportation links at this time consisted of roads that largely followed Native American trails, and ferries connecting Staten Island to New Jersey and New York. For example, the Old Shore Road (present-day Richmond Terrace) laid out ca. 1705 followed the course of a Native trail along the North Shore of Staten Island that ran between Howland Hook and Tompkinsville Landing. Early Euro-American settlers were known to use ferries maintained by Native Americans at various points along the Staten Island shoreline, but the earliest documented Euro-American ferry connecting the island to New York City was present by 1681 (Morris 1900:260). Several other ferry crossings were present along the north shore by the eighteenth century including Decker's, Dacostas' and Hillecker's ferries at and around Port Richmond, and Schuyler's ferry crossing at what is now Howland Hook that connected Staten Island to Elizabethtown. Additionally, important ferry crossings at Tompkinsville and Billop's Ferry to Perth Amboy were located at each end of one of the Staten Island stage routes between New York and Philadelphia during this period. Other stage route connections included the ferry between Bergen Point in New Jersey and Port Richmond established in 1764 and the Blazing Star ferry at Rossville.

The economy of the earliest settlers was largely agricultural, though a tannery and a distillery had been established on the island by the 1640s (Brodhead 1853:313). The distillery was the first in New Netherland established by then Director General William Kieft who no doubt sought to benefit from the lucrative local market for alcohol. At that time one in four houses at New Amsterdam were "grog-shops," or only sold tobacco and beer, and profits from liquor sales for company officials back in the Netherlands were second only to those from the fur trade (Burrows and Wallace 1999:33). Additionally, correspondence between directors in Holland and New Netherland indicate that by the time Peter Stuyvesant was governing New Netherland in 1647, an iron mine had been established somewhere on Staten Island (Fernow 1883:77).

By 1720, a significant portion of commerce in New York City was driven by the sugar trade with the West Indies. Carribean plantations devoted as much land as possible to sugar cane, and thus did not grow much of their own food. This resulted in a substantial increase in commercial farming on Staten Island, and in other rural communities

surrounding Manhattan who supplied foodstuffs for the Caribbean market (Burrows and Wallace 1999:122). African slaves were the source of labor that fueled the increasingly commercial nature of farming.

At the onset of the Revolutionary War, the occupants of Staten Island were divided in their loyalties (Morris 1898). The divisions fell largely along ethnic lines with English colonists loyal to British rule, while the Dutch and French preferred independence. The British closed or burned all but one English church during the War (Clute 1877), and one could expect these actions did not endear the Dutch and French inhabitants to the loyalist cause. Nevertheless, Staten Island was generally viewed as a bastion of British support by the American Congress. In June 1776, a British fleet of over a hundred vessels containing 9,000 troops led by General Howe landed at Staten Island, as New York and Long Island were heavily fortified by American defenders (Burrows and Wallace 1999:231; Morris 1898:204). The British were reportedly warmly received and they immediately established headquarters at New Dorp, while they waited for reinforcements from General Clifton and England that included Hessian as well as English troops. An additional 9,000 Hessian mercenaries had arrived by August (Burrows and Wallace 1999:234). Defensive redoubts were immediately built by British troops at Holland's (now Howland) Hook near the ferry crossing there. These were the first of many defensive works built by the British along the Staten Island shoreline (Morris 1898:206). Several other fortifications were built during the occupation including one at Old Place.

The large numbers of British regular and Hessian troops occupying Staten Island during the initial period of the War caused the more outspoken proponents of the American opposition to flee the island. The British used the island as a staging area for raiding expeditions into New Jersey and for launching attacks on New York and Long Island. Prior to the fall of New York, General Howe met with a congressional delegation consisting of Benjamin Franklin, John Adams and Edmund Rutledge at Tottenville to persuade the Americans to surrender and revoke the Declaration of Independence in exchange for all being pardoned for taking up arms against the king (Burrows and Wallace 1999:240). The meeting was brief and Howe's terms were briskly refused. Once Manhattan was taken, many of the British troops were removed from Staten Island to maintain their gains while Skinner's Brigade of American Loyalists and a large contingency of Hessian troops remained under the command of General Knyphausen (Morris 1898).

A number of raids were undertaken and attempts made by the Americans to recapture Staten Island across the kills from New Jersey. A series of skirmishes between the Americans and British were known to have occurred at British fortifications set up at Old Place in 1777 (Payne and Baumgardt 1986:35), and burials of the casualties of these clashes were later discovered in the early twentieth century on the former Reverend James Kinney property along what is now Western Avenue (Skinner 1909a). In all, the raids were largely unsuccessful, though they did manage to continuously harass the British occupiers. American military efforts were more successful elsewhere however, resulting ultimately in the surrender of Cornwallis and end of the war in 1782. By 1783, British troops had departed from New York and Staten Island. However, a number of British and Hessian soldiers, many deserters from the army, remained and settled in Staten Island (Morris 1900:2). By the end of the eighteenth century, the population had grown to more than 4,000 inhabitants (Morris 1898:120).

Industrial and Urban Development Period (A.D. 1800-1920)

As in earlier times, the predominant economic pursuits on Staten Island were agriculture and oystering. The portion of Staten Island containing the Project area known as Old Place continued to reflect a rural agricultural character with farmsteads lining Old Place Road (Figure 4-1). Unlike Manhattan, the economy would not be driven by other large-scale industries until well into the nineteenth-century. Flax regained importance as an agricultural crop into the early half of the nineteenth century, and shipbuilding continued to be important. Other early-nineteenth-century industries included various mills, including grist and carding mills. One mill of note was a gristmill constructed at Old Place south of the Project area (Figure 4-2). It was built at the former location of a small colonial tidal mill (Payne and Baumgardt 1986:135). The mill, or Old Place Mill was constructed in 1803 by John Hillecker, and Native Americans and African slaves were employed to build the mill and work in it. The mill was apparently the site of a dispute between the Native American and slave workers resulting in the use of the mill by the slaves as a "fort" in siege by Native Americans (Morris 1900:163). The ultimate result was the arrest and punishment of all parties in the dispute. By 1870, the mill had been added onto and converted into a mineral paint factory. It subsequently became a feed mill until it fell into disuse and was destroyed by fire in 1898.

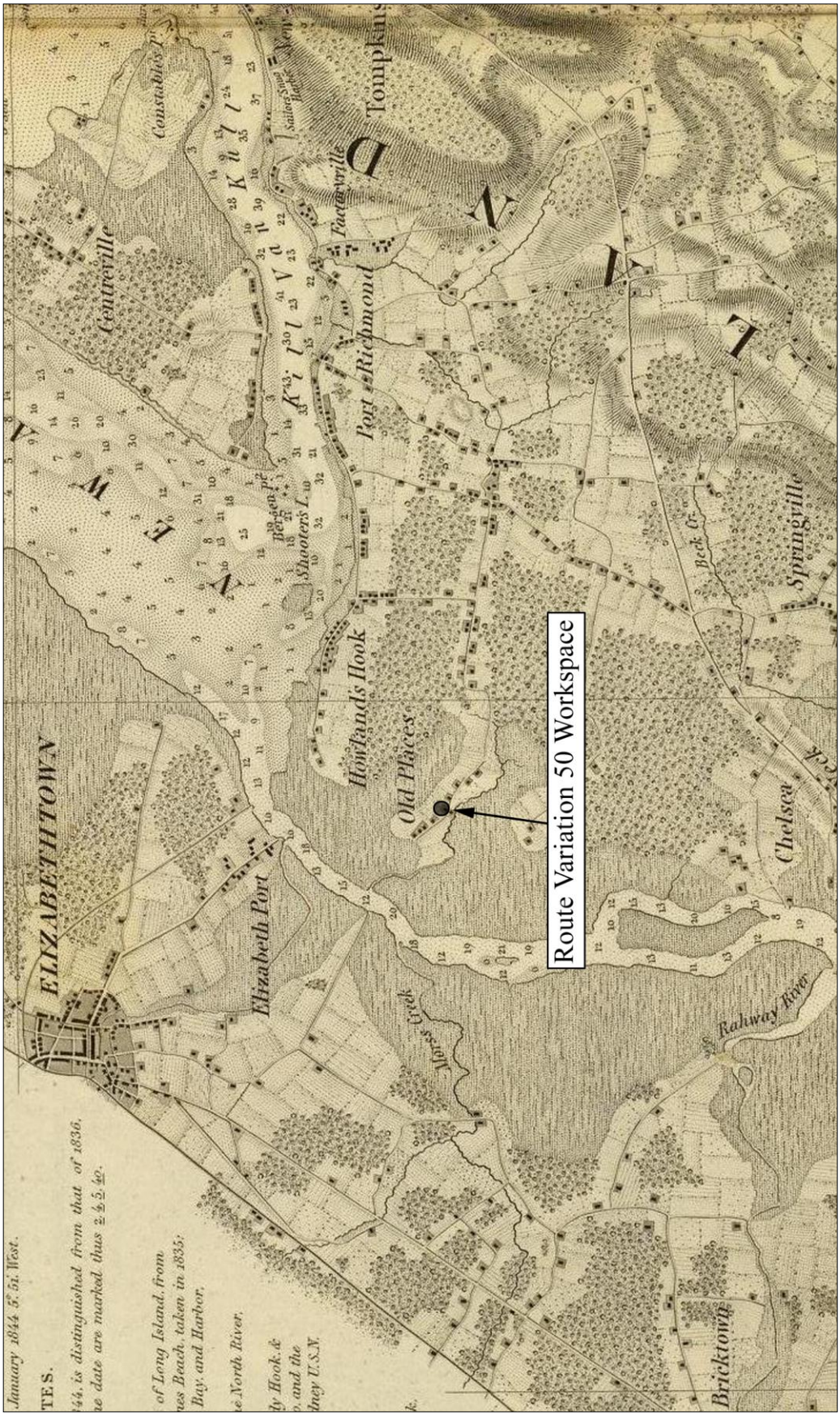


Figure 4-1. 1845 map of New York Bay and Harbor and the environs with the approximate location of the Route Variation 50 workspace (source: Hassler 1845).

Figure 4-2. 1872 map of Staten Island with the approximate location of the Route Variation 50 workspace (source: Dripps 1872).

Fears of a British landing at Staten Island during the War of 1812 resulted in the repair of remaining Revolutionary War period British forts and the construction of two new stone forts at the Narrows (Morris 1900:31). In spite of these preparations, Staten Island saw very little action during the war, and the construction of forts became a financial embarrassment for the then-governor of New York, Daniel Tompkins.

Significant population growth did not begin until relatively late in the nineteenth-century. Then, the establishment of numerous factories and mills fueled the immigration of predominantly Irish immigrants (Morris 1900). One of the larger employers of these immigrants was the Crabtree and Wilkinson silk factory at New Brighton. Other notable nineteenth-century industries included dye works at West New Brighton and Castleton, granite and trap rock quarries near Port Richmond, brick manufacturing at Elm Park, the Consolidated Fire Works Company of America at Graniteville, shipbuilding at Port Richmond, West New Brighton, Tottenville and Mariner's Harbor, the Jewett white lead mills and linseed oil factory at Port Richmond, and various breweries mainly concentrated in Stapleton. The success of breweries was due to Staten Island's reputation for having numerous spring sources of excellent water (Clute 1877:332). Oystering also continued to be an important economic mainstay for Staten Island into the nineteenth century. Ships from Staten Island would transport seed oysters north from sources as far away as Virginia to the metropolitan market, and transfer them to planting beds mainly concentrated at Mariner's Harbor (Clute 1877:330).

One dye works, the New York Dyeing and Printing Company, was the largest manufacturer of dyed and printed silk and other goods of its kind in the United States by the 1870s (Clute 1877). Another important manufacturer was the New York Fire-Brick, and Staten Island Clay Retort Works located at Kreischerville, which was founded in 1845 after the discovery of high quality kaolin clay deposits between Tottenville and Rossville (Clute 1877:326). Additionally, the S.S. White Dental Manufacturing Company at Prince's Bay was the first to commercially produce liquid nitrous oxide, and the first linoleum manufacturer in the country, the American Linoleum Manufacturing Company, was established at Linoleumville in the 1870s (Clute 1877; Morris 1900).

Transportation networks expanded on Staten Island after the turn of the century that improved connections between New York and Philadelphia. The Richmond Turnpike was laid out by 1816 which followed the old post and stage route to Philadelphia (Morris 1898:396-397). Other nineteenth-century roadways laid down in the area included the Port Richmond and Fresh Kills plank roads at Port Richmond, Western Road connecting present-day Washington Avenue and Richmond Terrace, Harbor Road, and Thompson's or South Avenue. Despite these improvements, roads in general on Staten Island were universally viewed as awful, and no serious efforts were made to improve them until the passage of a "Road Bill" in 1890 and the incorporation of Staten Island into the greater municipality of the City of New York (Morris 1900). It was generally felt that the lack of proper roads had been a serious impediment to Staten Island's fair share of the commercial and industrial development that had been taking place in other neighboring areas during the nineteenth century.

The first steamboat ferry, the "Nautilus" began service between Staten Island and New York City in 1817, and within a decade a second steamboat was in service (Morris 1900:264; Wilson 1893:34). By the 1860s the Huguenot Line was providing ferry service between Manhattan and Mariner's Harbor, and the North Shore Ferry Company had been established. The expansion in transportation and industry in the early half of the nineteenth century resulted in new residential development and even the establishment of new villages, such as that of Tompkinsville in 1815.

The question of whether Staten Island was under the jurisdiction of New Jersey or New York had been a point of contention for over a century. The dispute was finally resolved in 1833 when New York formally obtained rights to Staten Island (Morris 1898:90). Shortly thereafter, the village of Richmond became the social and economic center of the island. In 1896, after several years of formal inquiry, debate, public hearings and a series of votes, Staten Island was consolidated into the greater City of New York (Morris 1900:490).

A village was established at Howland Hook (formerly Holland's Hook) by the early nineteenth century (Morris 1898:409) (see Figure 4-1). Howland Hook was likely named for Lieutenant Henry Holland of the Staten Island militia who owned land in this part of Northfield during the early 1700s (Morris 1900:15). In 1833, Sailor's Snug Harbor, the United States first hospital for retired mariners was established along the north shore of Staten Island. Subsequently, numerous sailors retired to and built homes on Staten Island along Richmond Terrace. Other plans for developing the area were made in 1828 to establish a summer resort known as Jacksonville at Howland Hook, but

the development never happened due to the financial panic of the 1830s (Morris 1898:409). But the plans generally mirrored the increasing use of Staten Island as a summer getaway by the wealthy.

The presence of railroads transformed or expanded the commercial and residential importance of several communities, including those at Richmond, Tottenville, Rossville, Concord, and Garretsons (Morris 1900). At the prompting of prominent farmers, construction of the first railroad in Staten Island commenced in 1851 connecting Tottenville to Vanderbilt's Landing east of Stapleton (Clute 1877:331; Morris 1900:461). Construction was completed in 1860 and the Staten Island Railroad came under the control of William Vanderbilt. The holdings of the Staten Island Railroad company were later expanded with the acquisition of the East Shore ferries and Jacob Vanderbilt became president of the consolidated company. After a series of ownership changes, the company eventually took the name of Staten Island Railway. In 1863, the Staten Island Shore Railroad proposed the construction of a horse rail line between Fort Wadsworth on the Narrows and Howland Hook. Opposition was fierce literally resulting in the laying of tracks in the middle of the night. The route was completed as far west as Port Richmond, though cars never ran past West New Brighton (Morris 1900:465). About the same time, similar though unsuccessful efforts were undertaken by a banker to start a railway connecting West New Brighton and Tottenville. Though construction of the railbed started, it was never completed.

Despite the false starts at developing rail lines in previous decades, railways were expanded along the northern and eastern shores of Staten Island in the 1880s and 1890s. These included rail lines operated by the Staten Island Rapid Transit Company, the Richmond County Railroad (later the Midland Railroad), the Midland Railroad Company and New York and Staten Island Electric Railroad. Efforts to consolidate the railways and ferries with connections to Manhattan resulted in the establishment of the Staten Island Rapid Transit Railroad Company in 1884 (Morris 1900:463). The Staten Island Shore Railroad was quickly subsumed by the success of the Rapid Transit Company, and its holdings were eventually taken over by the Staten Island Electric Railroad Company. To accommodate the increase in commercial and passenger traffic, terminal facilities including ferry slips and piers were constructed at St. George on several acres of made land extending beyond the original shoreline. By 1895, trolleys were in service competing with the Rapid Transit Company for passenger traffic, and by 1899, the Baltimore and Ohio (B&O) Railroad Company had bought the Rapid Transit Company (Morris 1900:464). The B&O Railroad had by then already invested heavily in Staten Island railroad interests as witnessed by their financing the construction of a rail bridge across the Arthur Kill at Howland Hook completed in 1884. Rail expansion along the north shore continued in the 1890s with a charter granted to the New York and Staten Island Electric Railroad Company to connect South Beach to Howland Hook via St. George. The result was the expansion of company holdings by acquisition of the Electric Power Company, the Port Richmond Electric Light Company, the old Belt Line Railroad and the reopening the ferry at Howland Hook (Morris 1900:466–467).

Inevitably, railroads brought additional industrial development to Staten Island. The New York Terminal and Transit Company owned large tracts of land at Howland Hook portions of which were bought and developed by the Milliken Bros. Steel Corporation and Proctor and Gamble after the turn of the century (Payne and Baumgardt 1986:27). A steel and rolling mill was constructed by the Milliken Bros. Corporation south of Richmond Terrace in what is now Mariners Marsh Park. By the end of the nineteenth-century, the population of Staten Island was nearly 52,000 people, and improvements in rail and ferry transportation by the end of the century had allowed Staten Island to become a "bedroom" community for New York businessmen (Wilson 1893).

Modern Period (1920-Present)

The introduction of the automobile in particular had a widespread effect on transportation throughout the United States, and Staten Island was no exception. Road networks were extensively improved and expanded during the twentieth century at the expense of railways and ferries in the area as trucks, buses and cars became the predominant means of personal and commercial transport.

One innovative example of a new roadway brought about by the presence of the automobile was the Bayonne Bridge, one of three related bridges planned by the Port Authority of New York (later the Port Authority of New York and New Jersey) to create a circumferential highway system for the greater New York metropolitan region (PANYNJ 2010). Construction of the bridge spanning the Kill Van Kull between Staten Island and Bayonne began in 1928 and was completed ahead of schedule and under budget in 1931. As the Kill Van Kull is a major shipping channel, constructing the bridge created special challenges. The bridge needed to be a continuous arch constructed

without temporary supports in the channel, be able to support rail lines, and be elevated 150 feet over the water level to allow clearance for the U.S. Navy's tallest ships of the 1930s. This also required the construction of extensive elevated roadway viaducts at the bridge's landing points. The resulting construction consisted of what would become the world's longest single arch, steel truss bridge for the next 45 years. The two other planned bridges constructed were the Outerbridge Crossing and Goethal's Bridge. The presence of these bridges expanded commercial transportation, attracted industry and spurred the development of bedroom communities on Staten Island whose residents commuted to Manhattan and New Jersey for work.

Staten Island at present is an industrial center for New York City and suburban outlier of Manhattan and neighboring New Jersey communities. The area of Staten Island occupied by the Project area currently contains vacant land formerly used as petroleum industry facilities to the south, Port Authority of New York and New Jersey facilities and other commercial facilities to the west, residential neighborhoods toward the east, and commercial yards and port terminals along the northern shore.

CHAPTER FIVE

RESULTS

The following discussion summarizes the results of the previous archaeological overview assessment, and details the results of the Phase IB archaeological investigations of the Route Variation 50 additional workspace. Interpretations and management recommendations based on the results of the subsurface investigations are provided in Chapter 6.

Summary of the Results of the Archaeological Overview Survey and Archival Research

Archival research conducted as part of the archaeological overview survey for Route Variation 50 indicated that one pre-contact site, the Old Place Site (A085-01-0134 and A085-01-2366), was likely within or in immediate proximity to the Route Variation 50 workspace (Elquist and Cherau 2011). The Old Place Site has yielded definitive evidence of Archaic, Woodland and Contact period components (HAA 2002; Payne and Baumgardt 1986; Ritchie and Funk 1971; Skinner 1909a). Exact boundaries of the site are uncertain, but it is reportedly located along a large area on a strip of dry land bounded by marsh in the vicinity of Western Avenue between Old Place Creek to the south and the Staten Island rail line to the north. Available documents suggest that finds definitively from the site to date have all been recovered west of Western Avenue, although a previous archaeological assessment depicts the bounds of the Old Place Site as extending well east of Western Avenue as indicated by a Skinner map (HAA 1995), and Skinner's artifact collection notes variably refer to finds in the area as being from "Old Place," "Old Place Neck," or "Tunissen's Neck" (Skinner 1898–1909), and the "Neck" landform does continue east of Western Avenue.

Several post-contact sites (A0815-01-2371, A085-01-2372, A085-01-2373, A085-01-2374, A085-01-2367, A085-01-2368, and A085-01-2369) ranging in date from the seventeenth through the twentieth centuries were recorded to the west of the Route Variation 50 workspace during the 1986 Howland Hook Marine Terminal survey (Payne and Baumgardt 1986). These sites include several loci consisting of domestic and other associated structures. The nearest post-contact site to the workspace consists of Tunissen's 1680 Domestic Structure Site (A085-01-2374) situated near the northwest corner of Western Avenue and what is now Goethals Road North approximately 300 feet west of the workspace area according to Payne and Baumgardt's map (1986). The general area is documented as being part of a colonial land patent belonging to John Tunissen, a Dutch settler who settled the area ca. 1680 (Skene 1907). Given their location to the west of the workspace, Route Variation 50 is not expected to impact these sites (Elquist and Cherau 2011).

Review of historical maps revealed that the first structure depicted in the vicinity of the workspace consists of the Tunissen house on maps dating to the Revolutionary War period, after which numerous farmsteads were present along Old Place Road up to the late nineteenth or early twentieth centuries (Beers 1874; Bromley 1917; Dripps 1872; Hassler 1845; McMillen 1933 [1776-1783]; Walling 1860). The Beers (1874) and Dripps (1872) maps (see Figure 4-2) show that the workspace occupies a lot owned by J. Carpenter that includes a residential structure. The structure no longer appears on the 1917 Bromley map, and by this time the land was owned by Thos. E. Greacen. A colonial tidal mill was also reportedly constructed in the vicinity along Old Place Creek on the south side of Old Place Road. The later Old Place Mill was constructed in 1803 at the site of the former tidal mill. By 1872 it was being used as a "Flouring Mill" under the operation of J. Carpenter whose residence was on the other side of the road (Beers 1874; Dripps 1872) (see Figure 4-2). The mill is not present on the 1917 (Bromley) atlas map, and had reportedly burned down in the late 1890s (Morris 1900). The J. Carpenter house was considered potentially within or in immediate proximity to the Route Variation 50 workspace (see Figure 4-2) (Elquist and Cherau 2011). Other than the construction of the existing natural gas facility (M&R 058) present by 1950 to the west of the workspace, and the Goethal's Bridge roadways to the south, there are no documented twentieth-century developments at or in the vicinity of the workspace other than paper streets (Haverstraw Avenue and Onslow place) that appear to never have been built (Sanborn 1937, 1950, 1962, 1977, 1981, 1983, 1986, 1987, 1988, 1989, 1990, 1992, 1993, 1995).

Previous subsurface archaeological investigations for the Goethals Bridge Replacement Project located on the north side of Goethal's Road North overlap the southern edge of the Route Variation 50 workspace (Figure 5-1). Testing

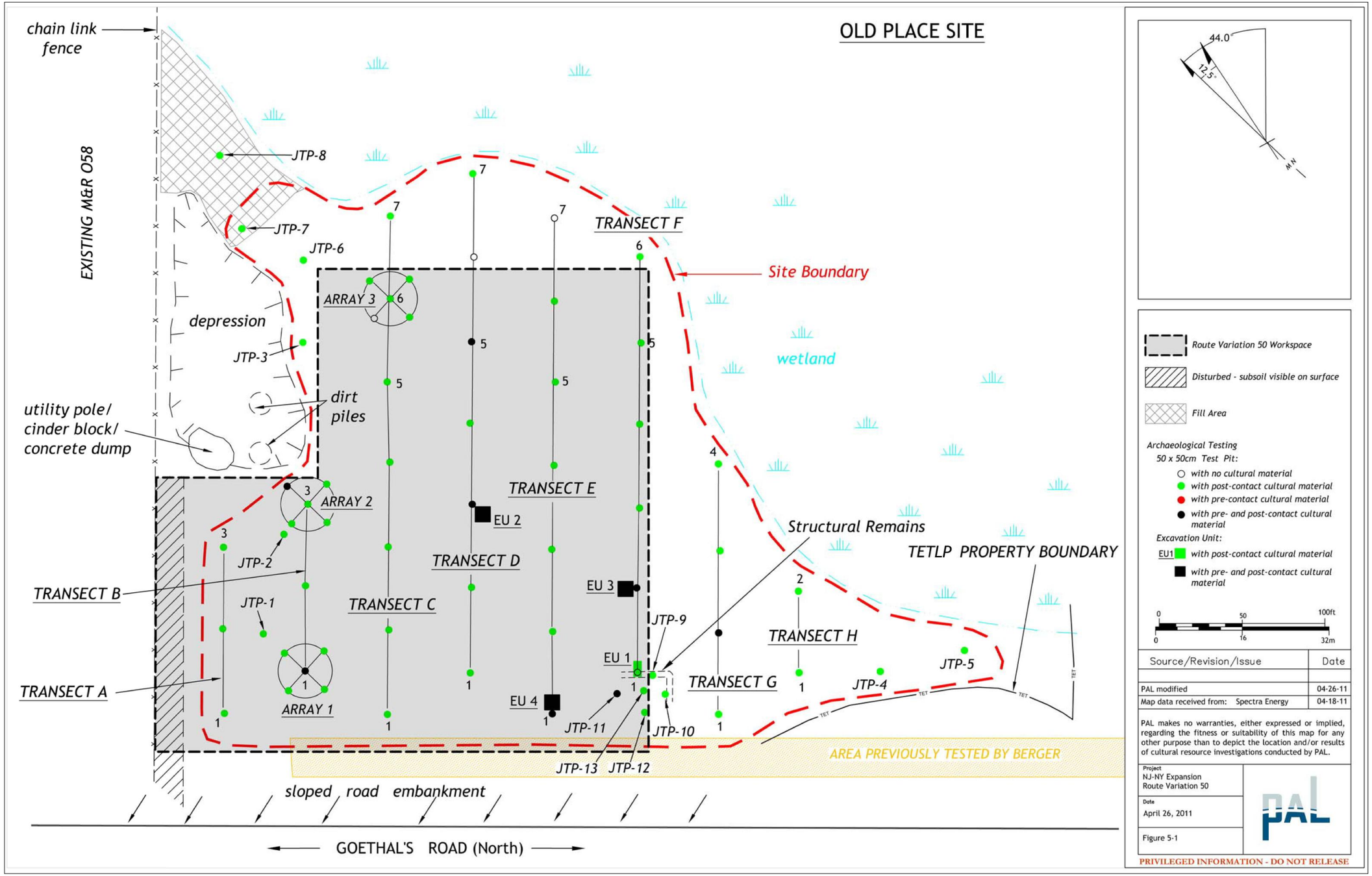


Figure 5-1. Location of archaeological testing along the Route Variation 50 workspace.

at this location consisted of a single transect of test pits located parallel to and approximately 50 feet north of Goethals Road North. Isolated deposits of jasper, chert, argillite chipping debris were recovered along this transect some 200 feet east of the southeast corner of the workspace, and were considered as likely associated with the Old Place Site (Berger 2007:83). This transect also overlaps with the area of the J. Carpenter property depicted on historic maps (Beers 1874; Dripps 1872; see Figure 4-2). Test pits in the immediate vicinity of the workspace and J. Carpenter house produced eighteenth through early twentieth century post-contact domestic materials including whiteware, redware, bottle glass, nails and broad/crown glass (Berger 2007:Appendix CC). None of the above described finds were considered significant archaeological resources, though the author's indicate that the finds of pre-contact materials could indicate the presence of more substantial deposits nearby (Berger 2007:83-84). The testing at this location additionally revealed that intact, sandy natural soils with little or no evidence of fill or disturbed deposits were also present along the Route Variation 50 workspace (Berger 2007:66 and Appendix CB).

In light of this information, the Route Variation 50 additional workspace was considered to have high sensitivity for pre-contact resources possibly associated with the Old Place Site, and moderate sensitivity for post-contact resources associated with the house site historically affiliated with J. Carpenter (Elquist and Cherau 2011). Given the evidence for the presence of intact, undisturbed soils, it was therefore recommended that the Route Variation 50 additional workspace undergo additional Phase IB investigations in the form of archaeological hand testing.

Results of the Phase IB Archaeological Survey

The Phase IB investigations of the Route Variation 50 workspace resulted in the identification of the Old Place Neck Site. Cultural materials identified during the walkover inspection and subsurface testing described below demonstrate that the Old Place Neck Site contains both pre- and post-contact components. The boundaries of the previously recorded Old Place Site are uncertain, but it is possible that the pre-contact finds recovered during the present Phase IB investigations are associated with this site.

Walkover Survey

A walkover survey inspection of the Project APE was conducted to note characteristics of the landscape, to identify any remains of cultural materials on the surface (e.g., cellarhole, artifact scatters, etc.), to identify areas of visible disturbance and to generally note Project area conditions. Visible disturbance along the workspace included an approximately 5m-wide area where subsoils were observed on the surface along the fenceline for the existing M&R 058 facilities, and the Goethal's Road North embankment that is raised above the level of the workspace(see Figure 5-1). In addition, a depression currently delineated as a wetland was noted along the northwest side of the workspace. It contains dirt piles and recent modern debris including part of a concrete and cinder block structure and utility poles (see Photograph 3-5; Figure 5-1). The depression may originally have been a southward extension of the wetlands in the area, now divided from wetlands to the north by fill deposits extending east of the existing M&R 058 facilities, although it seems probable that some excavation of this area has occurred given the presence of the dirt piles (see Figure 5-1).

A scatter of hand-made brick was noted in the southeast corner of the workspace during the walkover inspection. Dense concentrations of brick were noted along two linear areas that had a very subtle bermed appearance. These linear features appeared to intersect one another at right angles suggesting the remains of two sides of a structure (Figure 5-2). The northern berm as visible in the field measured approximately 7 m (23 ft) long, and the eastern berm approximately 4.9 m (16 ft) long. A subtle depression was noted on the south and west sides of the bermed areas. The bermed area to the east was somewhat obscured by a large downed tree, which had brick embedded in its root mass at the base (Photograph 5-1). Its presence in the root mass of the large-diameter tree indicated the tree had become established after the brick was deposited in this area, suggesting the brick feature had been razed a long time ago. A small, rectangular block of rough-cut granite was also observed adjacent to the base of the downed tree, and a piece of conglomerate (?) concrete was observed 3m north of the brick feature. It was suspected that this brick feature represented the north and east sides of a foundation or footing for a structure associated with the J. Carpenter property.

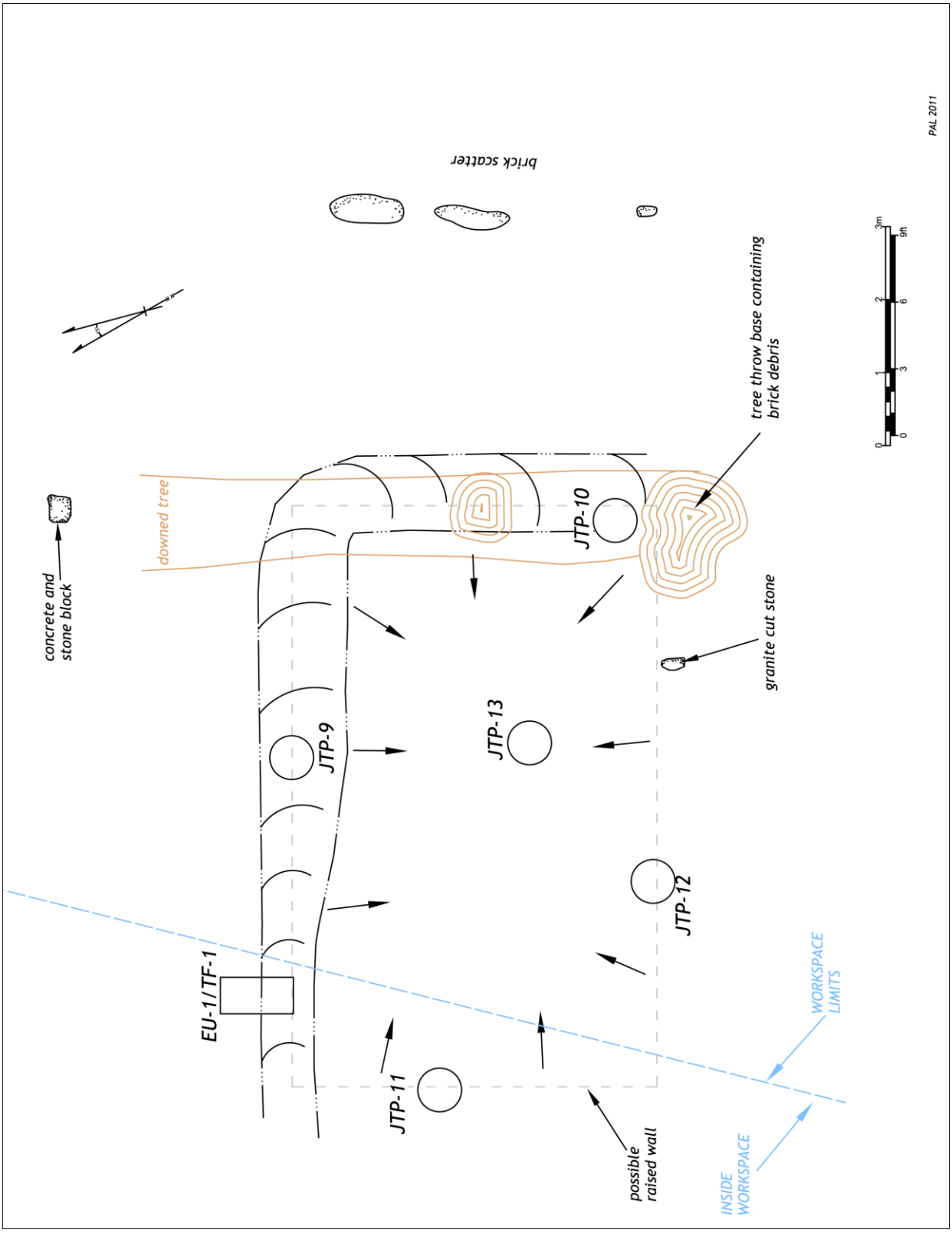


Figure 5-2. Plan drawing of the brick feature/possible structural remains located at the southeast corner of the Route Variation 50 workspace.

A sample of diagnostic artifacts was collected from the surface within and in immediate proximity to the brick feature during the walkover inspection. Items collected included fragments of aqua and frosted flat glass, a piece of shoe leather, and several complete and partial bottles and a canning jar (Appendix B). The containers included medicine, soda/water, and condiment bottles. Most of the bottles had identifiable characteristics that provided manufacturing date ranges that spanned the late nineteenth through early and mid-twentieth centuries (Table 5-1).

Table 5-1. Surface Collected Diagnostic Items from the Area of the Brick Concentration.

Bottle Type	Description	Maker's Mark / Label	Date Range
Canning Jar	Embossed Label	"ATLAS E-Z SEAL TRADE MARK REG." Atlas Glass Co./Hazel-Atlas Glass Co.	1896-1964
Condiment Bottle	Club Sauce Finish; Parison Mold	"O" inside a Square -- Owens Bottle Co.	1911-1929
Medicine Bottle	Patent/Extract/Flat Finish; Parison Mold; Embossed Label	"LISTERINE LAMBERT PHARMACAL COMPANY"	1885-1955
Soda/Water Bottle	Crown Finish; Parison Mold; Embossed Label	A. Krumenaker Bottle Co. NY	1893-1913
Untyped Bottle	Push-Up Base; Turn Mold		1880s-1910s

Photograph 5-1. Close-up view of hand-made brick embedded in the root base of the large downed tree at the location of the possible structural remains.

Subsurface Testing

Test Pits

Phase IB subsurface testing included the excavation of both 50-x-50-cm test pits and larger excavation units within, and north and east of the Route Variation 50 workspace (see Figure 5-1). Test pits included 39 pits excavated along a staggered 15m-interval grid, 13 JTPs and three arrays consisting of four pits each. Soil profiles from test pits were quite uniform across space typically revealing a black (10YR 2/1) to very dark brown (10YR 2/2) silty fine to medium sand developing A horizon situated above a dark brown (10YR 3/3) to dark yellowish-brown (10YR 3/4) plowzone (Apz) of silty fine to medium sand. The Apz was underlain by a strong brown (7.5YR 5/6) silty fine to medium sand B_1 horizon that overlay a strong brown (7.5YR) to yellowish-red (5YR 5/8) B_2 horizon of silty medium to coarse sand (Figure 5-3a and b). In many cases, the B_2 horizon was only distinguishable from the overlying B_1 by its coarser sand content. The water table was encountered in nearly all test pits. Depth to the water table ranged between 37 and 116 cmbs with an average depth of 69 cmbs.

Test pit profiles in the northwestern-most part of the testing area varied from the typical profile observed during testing. JTP 07 showed variable fill layers of silty sand overlying the plowzone and B horizon soils (Figure 5-3c), while JTP 08 contained a surficial fill layer of concrete rubble, which was not able to be excavated by hand past 18 cmbs. Plastic, a piece of rope, and glass were present in the concrete rubble deposit, which was not saved for curatorial purposes. The fill at this location may have been deposited to build up the landscape at this location in recent times to provide a "dry" route across a former wetland area between the existing M&R 058 facilities to the west and the wooded lot to the east (see Figure 5-1).

Test pits (JTPs 09 thru 13) were excavated at the location of the possible structural remains along the two bermed areas of dense brick, at the estimated location of the other two "sides" of the structural feature, and in the center of the depression thought to possibly represent the "interior" space of a structure (see Figure 5-1 and 5-2). Test pits placed at the "sides" of the possible structural remains consisted of a demolition fill layer consisting of dense brick deposits mixed with dark yellowish-brown (10YR 4/4) and very dark grayish-brown (10YR 3/2) silty sand that in one test pit overlay disturbed topsoils or a possible second fill layer that consisted of banded dark yellowish-brown (10YR 4/4) and black (10YR 2/1) silt sand deposits. The amount of brick debris in the demolition fill from JTP 12 was less dense in comparison to the other test pits placed along the "sides" of the structural remains. The fill was situated over the Apz and B horizon soils observed elsewhere throughout the testing area (Figure 5-3d; Photograph 5-2). The profile of JTP 13 placed in the extrapolated "interior" of the structural remains showed no evidence of an excavated cellarhole, exhibited the typical profile seen throughout most of the testing area, and lacked the dense brick debris seen in the demolition fill of the other test pits at this location (though small brick fragments were present in the plowzone) (Figure 5-3e). The profiles from these units indicate that a structure, now razed, was likely present in this area.

Photograph 5-2. East wall profile of JTP 09 showing layers of demolition fill with brick and disturbed topsoils overlying Apz and B horizon soils.

One other test pit (TC-01) exhibited a unique profile consisting of a very dark brown (10YR 2/2) silty sand developing A horizon that overlay a truncated dark yellowish-brown (10YR 3/4) remnant Apz stratum situated in turn over a layer of mixed Apz and B horizon soils. As in other units, the underlying B_1 horizon

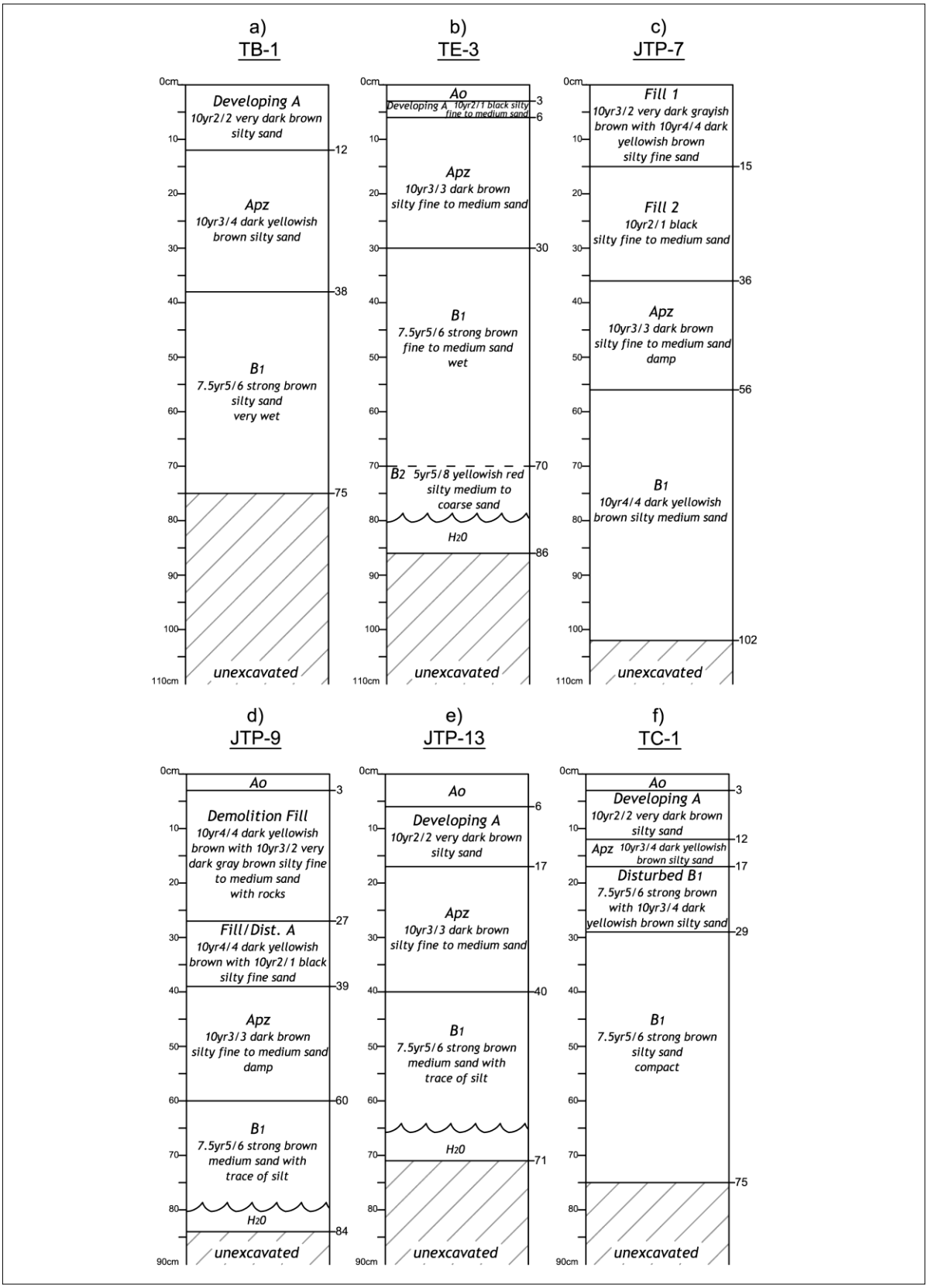


Figure 5-3. Representative soil profiles from test pits a) TB-01, b) TE-03, c) JTP 07, d) JTP 09, e) JTP 13, and f) TC-01.

consisted of a strong brown (7.5YR 5/6) silty sand (Figure 5-3f). It was noted that the Apz, and disturbed and intact B horizon soils were extremely compacted, possibly indicating the former presence of a dirt cart path or road through the area.

Excavation Units

Four larger units were excavated during the Phase IB investigations including one 0.5-x-1m EU (EU 01) and three 1-x-1-m EUs (EUs 02 thru 04). EU 01 was excavated at the location of test pit TF-01 (see Figure 5-1). TF-01 was placed along the bermed area of dense brick identified during the walkover inspection as probable structural remains. Excavation of TF-01 ceased at 5 cmbs when a potentially articulated brick feature was encountered that resembled the remains of a foundation or footing. The unit was subsequently expanded into the larger 0.5-x-1-m EU 01. Test pit TF-01 was incorporated into the south half of the unit in an attempt to further expose the possible foundation/footing remains and determine whether a builder's trench was present. Excavation of EU 01 was stopped at 60 cmbs when the water table was encountered. The soil profile from EU 01 consisted of a demolition fill of yellowish-brown (10YR 5/4) sand mottled with very dark gray (10YR 3/1) silty sand that contained large amounts of disarticulated brick and brick fragments. The demolition fill was underlain by the typical developing A, Apz and B horizon profile seen throughout most of the Project area (Figure 5-4a; Photograph 5-3). No evidence of an articulated foundation/footing, or builder's trench was identified in EU 01. Considered together with the profiles observed in other test pits excavated at the location of the razed structural remains (see Figure 5-3d and e; Photograph 5-2), the structure here was likely built on brick piers or sills rather than over an excavated foundation subsequent to the area having been used as a plowed agricultural field.

EU 02 was excavated immediately adjacent to and southeast of test pit TD-03, which produced a pre-contact bifacially-flaked tool (biface), in order to determine whether additional pre-contact deposits were present. Excavation of EU 02 was impeded at 60 cmbs where the water table was encountered. EU 03 was placed immediately adjacent to and west of test pit TF-02, which had yielded a jasper channel flake (see below). Excavation of EU 03 was also impeded beyond 60 cmbs due to the presence of the water table. Soil profiles from both EUs 02 and 03 were consistent with those seen in test pits throughout most of the testing area, consisting of a developing A horizon overlying Apz and B horizon soils (Figure 5-4b and c).

EU 04 was placed north of and immediately adjacent to test pit TE-01 to further explore the nature of the deposits from the test pit that included the recovery of a tear-drop shaped piece of copper and chipping debris (see below). The water table was present at 70 cmbs making further excavation of the unit impractical. The soil profile varied slightly from the typical profile observed across the site: a layer of fill or slopewash that contained a mix of modern debris and earlier post-contact materials overlying the developing A, Apz and B horizon soils seen elsewhere (Figure 5-4d). EU 04 was in relatively close proximity to the Goethal's Road North embankment, and the surficial fill/slopewash may represent downslope movement of embankment sediments and roadside debris.

Pre-Contact Period Artifact Assemblage

Pre-contact cultural materials were recovered from test units A02-360°, TB-01, TD-03 and 05, TE-01, TF-02, TG-02, JTP 11, and EUs 02 thru 04 (see Figure 5-1). Artifacts recovered from these test units include 27 pieces of chipping debris, two utilized flakes, three bifaces and a stemmed projectile point recovered from both Apz (30 percent) and intact B horizon (70 percent) contexts (Table 5-2; see Appendix B). A piece of charcoal resembling a burned nut fragment was also recovered from JTP 04 from B horizon soils. If cultural, the charcoal may indicate a potential for features such as fire pits and/or hearths and other radiocarbon datable contexts to be present at the site.

Raw material types for the chipping debris include chert (N=4), Normanskill chert (N=18), and jasper (N=5). One piece of jasper chipping debris recovered from test pit TF-02 is consistent with the morphology of a channel flake, often associated with the production of PaleoIndian period fluted projectile points. The jasper channel flake was recovered from intact B_1 horizon soils between 50 and 60 cmbs and may represent a failed second attempt to create the channel or "flute" at the base of a fluted point given its shorter than normal length and fracture pattern (Photograph 5-4).

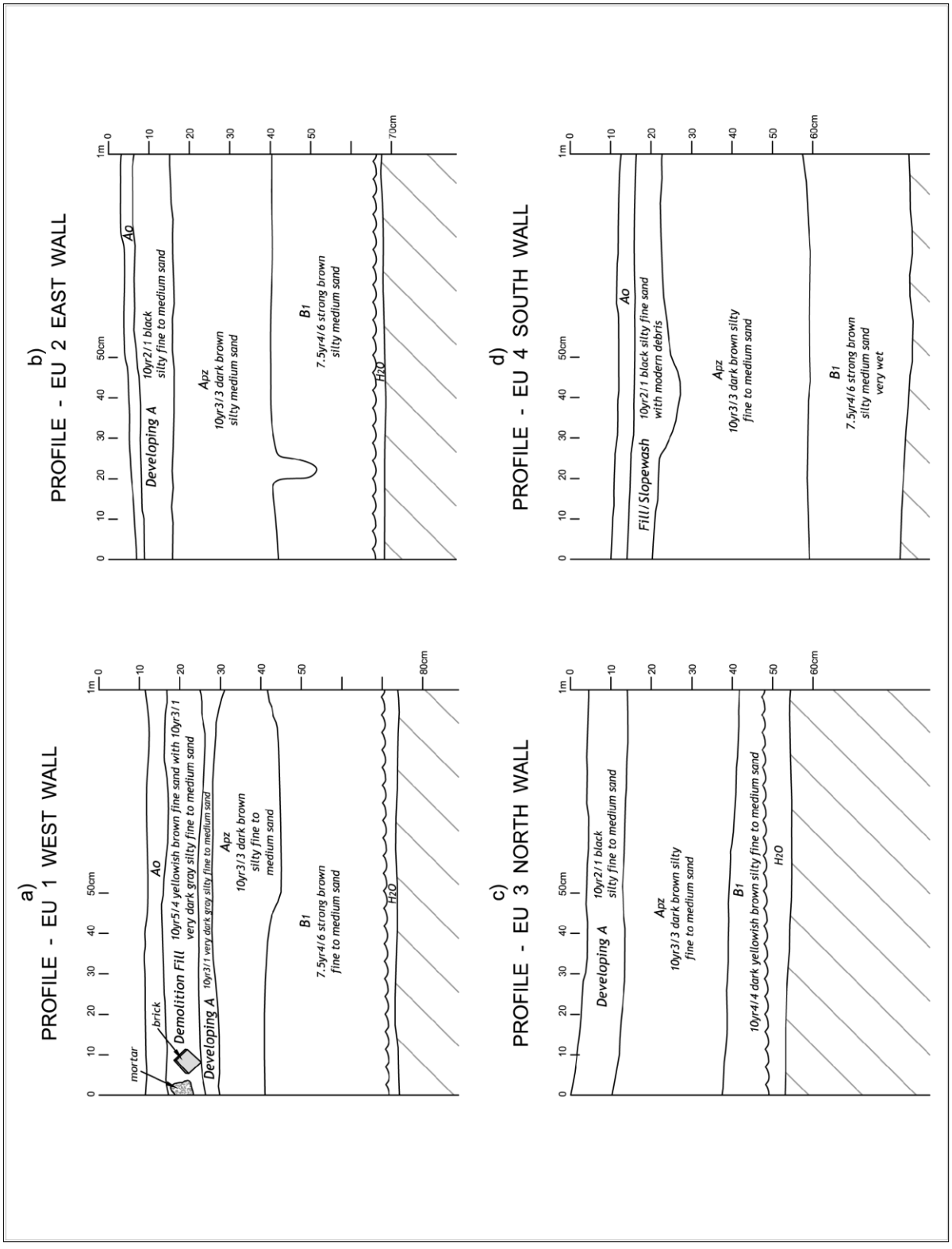
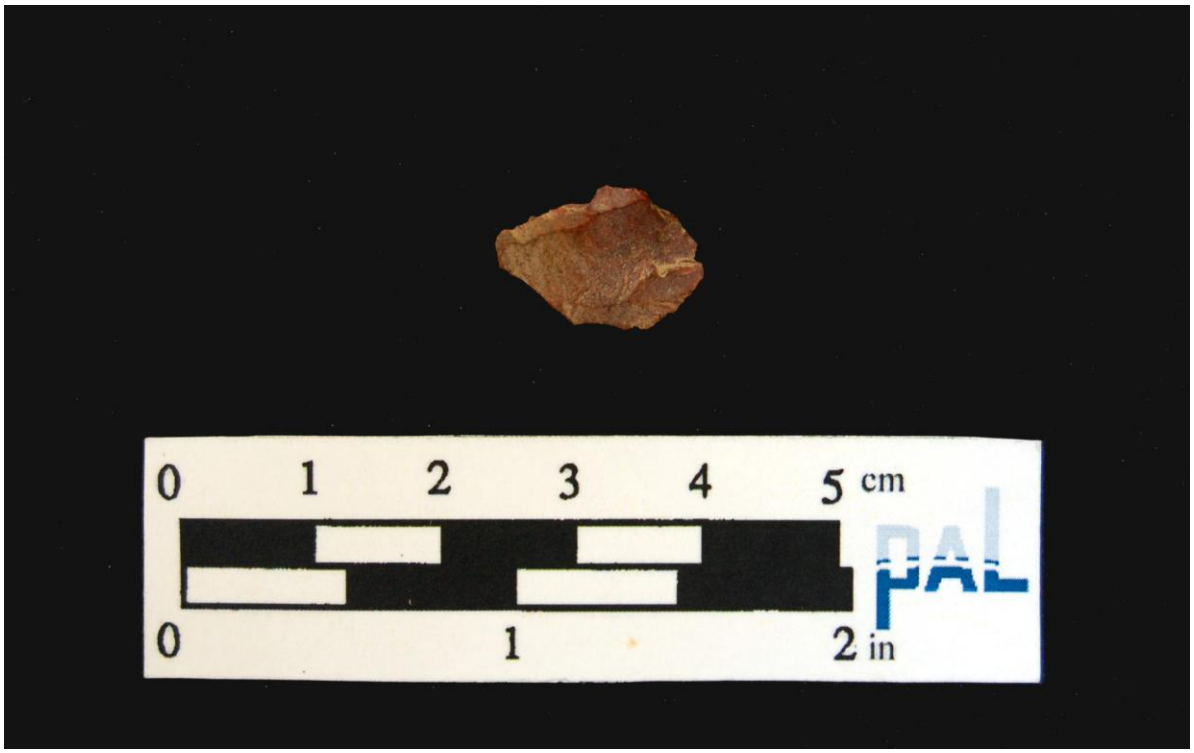


Figure 5-4. Soil profiles from a) EU 01, b) EU 02, c) EU 03, and d) EU 04.

Photograph 5-3. West wall profile of EU 01.



Photograph 5-4. Possible jasper channel flake recovered from test pit TF-02.

Table 5-2. Summary of Pre-contact Items by Material, Stratum, and Object, Old Place Neck Site

Material	Biface		Chipping Debris		Projectile Point	Utilized Flake		Total
	Apz	B1	Apz	B1	Apz	Apz	B1	
Argillite					1			1
Normanskill Chert		1		4				5
Other chert	1		6	12		1	1	21
Jasper			1	4				5
Unid. Metamorphic		1						1
Total	1	2	7	20	1	1	1	33

The three bifaces were manufactured from an unspecified metamorphic material, Normanskill chert, and an untyped chert from test units TD-03, EU 02 and EU 03, respectively (Photograph 5-5). The two utilized flakes recovered from test units A02-360° and JTP 11 are both made of chert. An argillite stemmed projectile point with missing tip was also recovered from a plowzone context in test pit TB-01 (Photograph 5-6). Though designated as "untyped", the morphology of the point is most consistent with the Bare Island variety that generally dates to the Late Archaic Period.

Contact/Post-Contact Period Assemblage

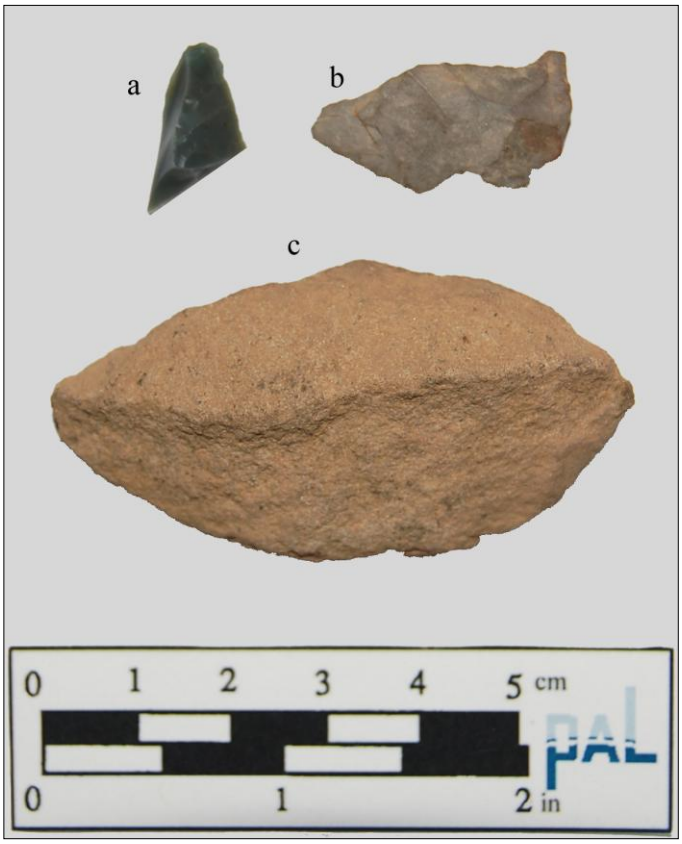
A total of 1,645 pieces of post-contact cultural materials was recovered during the Phase IB investigations, which includes the above described bottles collected during the walkover inspection (see Appendix B). Subsurface testing yielded post-contact materials from all test units except test pits TD-06, TE-07 and A02-270° (see Figure 5-1). Categories of materials recovered include ceramics, brick, glass, metal, leather, coal and coal by-products, plaster/mortar, gunflints, slate, modern debris (plastic, rubber and styrofoam), and other material that may consist of paint fragments (Table 5-3). The post-contact materials were predominantly recovered from the plowzone as well as developing A, fill, fill/slopewash, Apz/B_1 interface, and disturbed B_1 contexts (Figure 5-5). A few items were recovered from contexts designated as remnant Apz and disturbed/Apz. As noted above, the remnant Apz consists of a compact truncated plowzone from test pit TC-01 thought to represent the location of a former road. The items from the disturbed/Apz context consist of glass fragments and a piece of redware recovered from JTP 01 and TF-04, respectively, well below the plowzone. It is suspected that these items either fell in from the overlying Apz during excavation given the loose and sandy nature of the topsoils, or were introduced into the B horizon soils through bioturbation processes.

Table 5-3. Summary of Post-contact Materials, Old Place Neck Site.

Material	Count
Ceramic	253
Brick	241
Glass	406
Metal	189
Leather	3
Coal/Coal By-Products	396
Plaster/Mortar	129
Gunflints	2
Slate	4
Modern Debris	5
Other	17
Total	1645

In addition to the above items, four fragments of uncalcined and calcined mammal bone, three fragments of charcoal, and 48 fragments of shell were recovered during test unit excavations. Identifiable species of the latter include oyster and clam. Given their recovery from developing A, plowzone, and demolition fill contexts, these items are characterized as temporally neutral, and could be associated with either the pre- or post-contact occupations of the site.

The functional categories of the post-contact assemblage included personal items, domestic items, structural materials, coal and coal byproducts, and miscellaneous items including modern debris and unidentified materials (Figure 5-6). Structural items were most common in the assemblage, though domestic items and coal and coal



Photograph 5-5. Bifaces recovered from the Old Place Neck Site including a) Normanskill chert biface fragment from EU 02, b) chert biface fragment from EU 03, and c) biface of metamorphic material from TD-03.

Photograph 5-6. Argillite stemmed projectile point from TB-01.

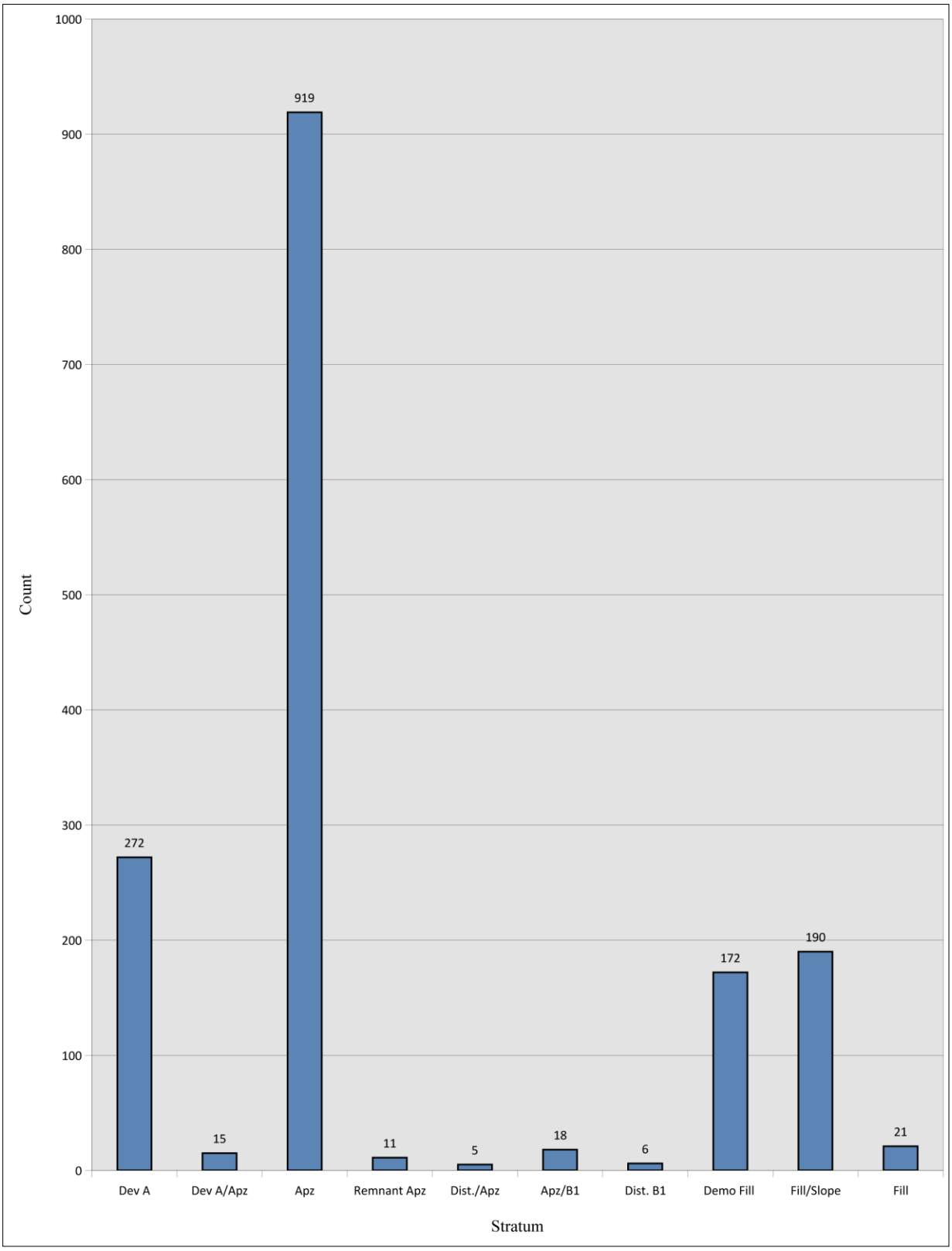


Figure 5-5. Frequency histogram of post-contact materials by stratigraphic context.

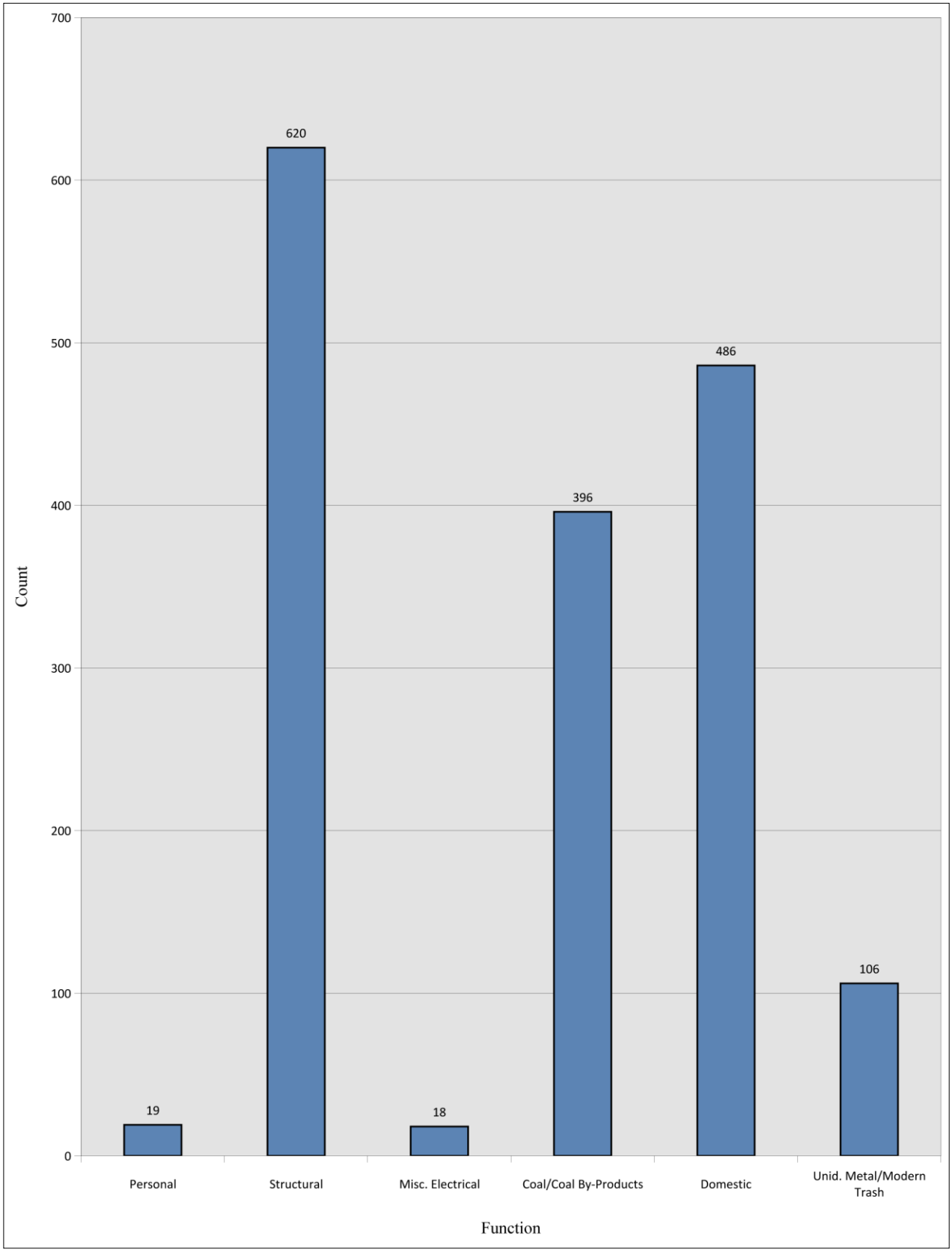


Figure 5-6. Frequency histogram of post-contact materials by functional category.

byproducts were also well represented. The majority of the structural items are concentrated at the location of the brick structural remains.

The post-contact ceramic assemblage includes 238 vessel sherds, 14 bowl and stem fragments of kaolin and ball clay pipes, and a fragment of a porcelain electrical insulator. Ceramic vessel sherd types include coarse and refined earthenwares, porcelain, Albany slip stoneware, creamware, English brown wares, ironstone, pearlware, Astbury type red-bodied refined earthenware, redware, Staffordshire-type slipware, tin enamel ware, whiteware, and yellowware. Diagnostic sherds have broad manufacture date ranges spanning the seventeenth through twentieth centuries (see discussion below).

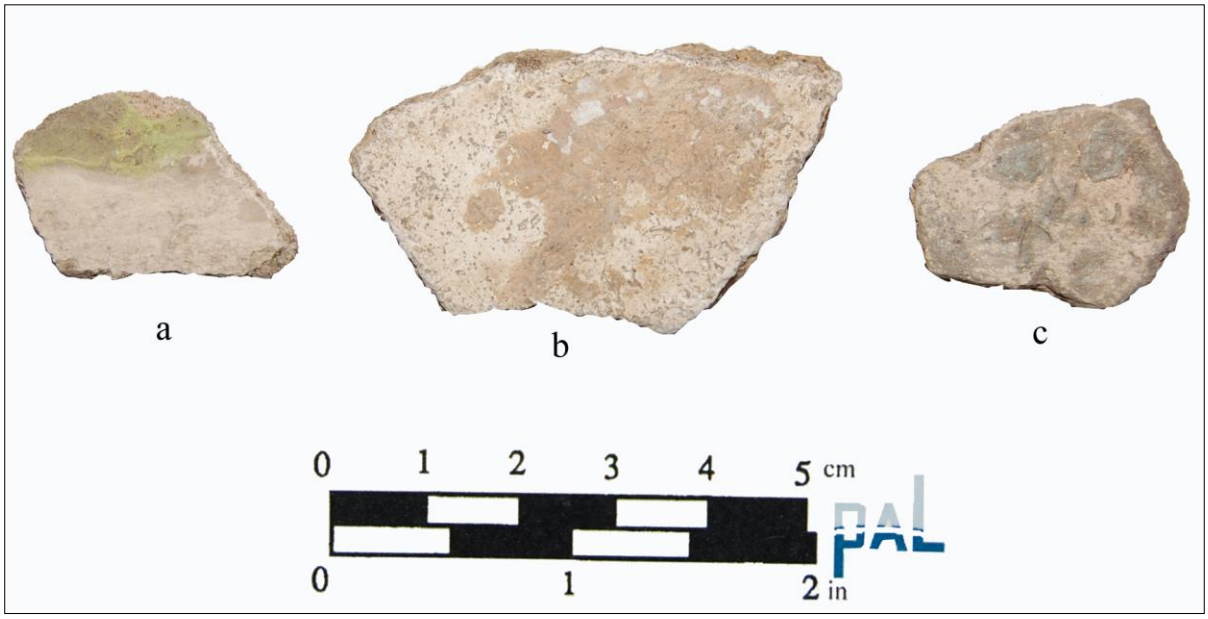
Including items collected from the surface at the location of the structural remains, the glass assemblage included bottle and canning jar glass, curved and flat glass, window glass, fragments of a tumbler, and light bulb fragments. Glass with diagnostic characteristics recovered during subsurface excavations had similar manufacturing date ranges (late nineteenth to twentieth century) to the bottles collected from the surface at the location of the structural remains.

Other items of note include the 127 pieces of plaster/mortar recovered from the location of the structural remains, and two gunflints (Photographs 5-7 and 5-8). Several pieces of the plaster/mortar (N=27) exhibit traces of green or reddish-brown paint. The painted fragments are too small or weathered, however, to identify any decorative elements. The gunflints are made of gray English flint. One exhibits an accretion on its surface that resembles oxidized metal, which may indicate it was hafted onto a metal handle.

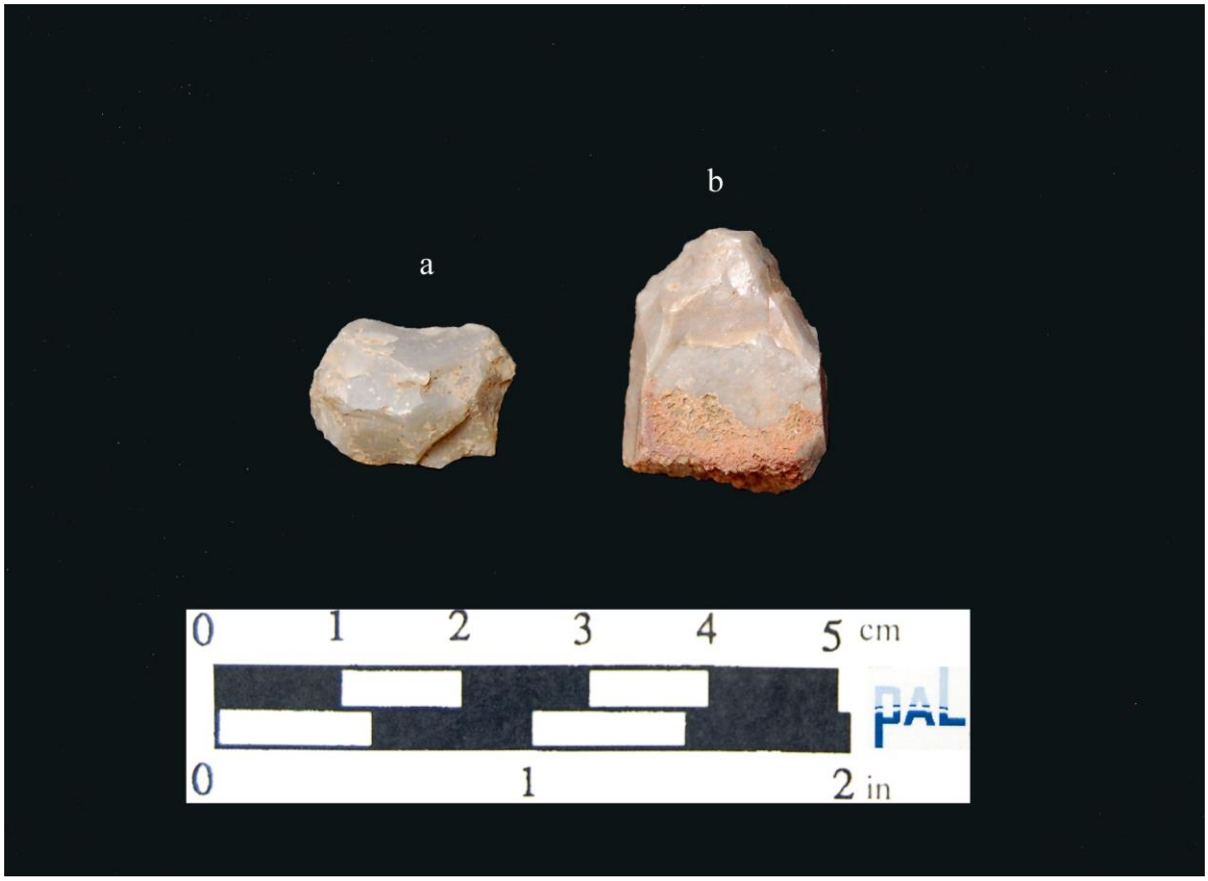
The metal items include two copper or brass tacks, four pieces of copper, a brass hinge, three machine part fragments, 10 pieces of miscellaneous hardware, 95 nails (machine cut, wire and unidentified), a metal caster from a chair, and 72 unidentifiable ferrous metal fragments. The copper or brass tacks resemble those used for furniture upholstery. The other copper items include two unidentifiable fragments, a small decorative, tear-drop shaped piece of sheet copper, and a wire ring with a hook-like projection (Photograph 5-9). It is known that the previously recorded Old Place Site contained contact period finds from a Native American village site located at the western end of the Old Place Neck landform. These finds that included a brass arrowhead, gunflints, leaden bullets, a pewter ring, fragments of "trade" pipes, and a perforated brass kettle fragment (Skinner 1909a:8-9). When considered together with the other potentially early items, such as the gunflints and ceramic sherds, it is possible that the copper pieces (ring, tear-drop shaped sheet copper, and fragments) have a contact/colonial period affiliation.

The diagnostic ceramics and a selection of personal items suggestive of the possible contact or early colonial occupation were used to examine the vertical and horizontal distribution of these materials to determine whether there is any discernable patterning a) across the site as a whole, and b) at the location of the structural remains to determine a possible date of construction and function. The diagnostic ceramic assemblage contains sherds predominantly dating to the eighteenth to nineteenth centuries and mainly recovered from plowzone soils (Table 5-4; Photographs 5-10 and 5-11). The relatively small size of the sherds also suggests secondary or tertiary deposition. There is no contrasting vertical subsurface patterning between the earlier and later materials across the site as a whole. Both the eighteenth and nineteenth century materials occur within all stratigraphic contexts with comparable frequency (see Table 5-4). A similar pattern is present in the distribution of materials recovered from test units excavated at the location of the structural remains. Manufacturing dates for the diagnostic ceramics at this location have a maximum range spanning the mid-eighteenth century to the late-nineteenth/early twentieth century. Again the earlier and later materials occur at similar frequencies within plowed contexts, but the predominant assemblage of diagnostic ceramics at the site suggests an overall early to mid-nineteenth century date range of occupation. This date range contrasts with the late nineteenth to early twentieth century date range for the bottles collected from the surface of the site, and indicates the bottles may represent later dumping activity. The surficial demolition fill associated with the structural remains exclusively contained pearlware ceramic sherds that could date between 1779 and 1830, but this range of dates overlaps with dates associated with materials derived from the underlying plowzone (Table 5-5).

The horizontal distribution of the post-contact assemblage was examined to assess whether there was any spatial patterning of materials by date range and functional categories. The staggered grid testing interval (15 m) was too large to accurately assess the contour density of these materials. Instead, the testing area was arbitrarily divided into 5 zones to get a general idea of the frequency of the materials by date range and function (Figure 5-7). Overall,



Photograph 5-7. Examples of painted plaster from a) JTP 09, and b) and c) JTP 10.



Photograph 5-8. Gunflints from a) TF-02 and b) EU 02.

Photograph 5-9. Items of copper recovered from a) TC-01, b) A02-360°, c) TC-06, d) TE-01.

Photograph 5-10. Selected eighteenth century ceramic sherds of a) English brown stoneware from TE-04, b) Fulham stoneware from EU 03, c) Astbury-type refined earthenware from EU 02, d) slip-trailed redware from EU 03, e) lead-glazed redware from TE-06, f) Staffordshire-type slipware from TC-06, and g) tin-enameled earthenware from TF-05

Table 5-4. Personal Items and Diagnostic Ceramics by Date and Stratum, Old Place Neck Site.

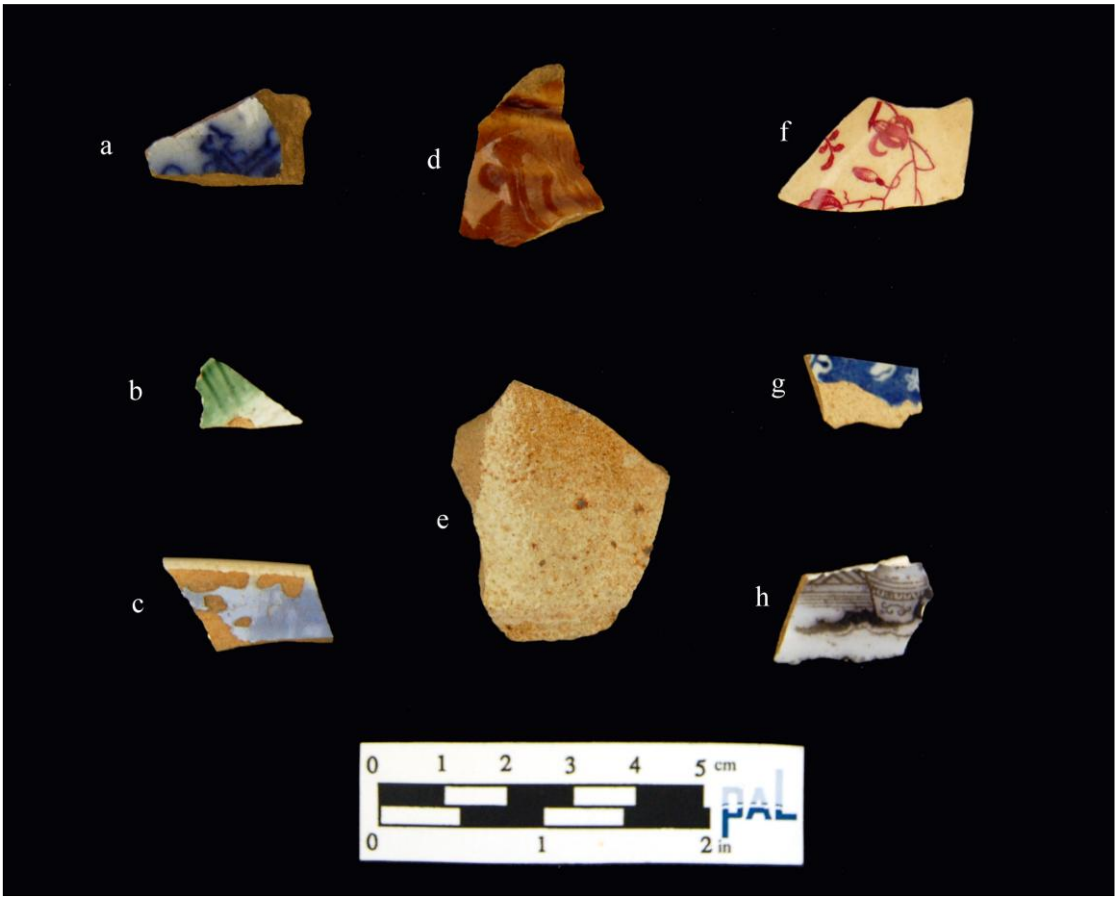
Date Range	Object	Fill	Fill/Slopewash	Dev A	Dev A/Apz	Apz	Dist./Apz	Apz/B_1	Dist. B_1	Total
	Smoking Pipe					14				14
	Copper					5				5
	Gun Flint			1		1				2
1600-1800	Tin Enamel					6				6
	Redware, Lead Glaze		1	7		11			1	20
1600-Present	Redware			7		6	1			14
1660-1830	Porcelain, Chinese Export					1				1
1690-1775	Stoneware, English Brown Fulham					1				1
1690-1810	Stoneware, English Brown					2				2
	Redware, Black Glaze	1				1				2
1700-1830	Redware, Trailed Slipware					3				3
1700-Present	Porcelain, Hard Paste			1		3				4
1720-1760	Astbury Type					5				5
1762-1820	Creamware, Plain		1	2		27				30
1762-1850	Unid. Refined Earthenware			8		3				11
1779-1830	Pearlware, Plain	1	2	2	2	19			1	27
1780-1820	Pearlware, Annular	1				1				2
1780-1830	Pearlware, Shell-Edged Rim					3				3
1795-1815	Pearlware, Hand Painted Overglaze					1				1
1795-1820	Pearlware, Hand Painted	1				3				4
1795-1830	Pearlware, Transfer Print		1			4				5
1800-1880	Stoneware, Albany Slip/Salt Glaze					6				6

Table 5-4. Personal Items and Diagnostic Ceramics by Date and Stratum, Old Place Neck Site. (cont'd)

Date Range	Object	Fill	Fill/Slopewash	Dev A	Dev A/Apz	Apz	Dist./Apz	Apz/B_1	Dist. B_1	Total
1818-1869	Pearlware					2				2
1820-1830	Pearlware, Molded Rim					1				1
	Whiteware, Transfer Print	1		3		1				5
1820 -Present	Whiteware, Plain		7	4		44		2		57
	Yellowware, Rockingham-Bennington					1				1
1830-1900	Yellowware, Plain					2				2
1830-1962	Whitware, Annular					1				1
1835-1870	Whiteware, Shell-Edged Rim					1				1
1840-1920	Whiteware, Flowing Colors					5				5
1840-1930	Stoneware, Albany Slip			1						1
	Porcelaneous					2				2
1840-Present	Ironstone					1				1
1857-1864	Ironstone					1				1
Total		3	12	36	2	188	1	2	2	248

Table 5-5. Personal Items and Diagnostic Ceramics by Date and Stratum, at the Location of the Structural Remains.

Date Range	Object	Apz	Demolition Fill	Apz/B_1	Total
	Smoking Pipe	1			1
1762-1820	Creamware, Plain	6			6
1779-1830	Pearlware, Plain	4	1		5
1780-1820	Pearlware, Annular		1		1
1795-1815	Pearlware Hand Painted, Overlaze	1			1
1795-1820	Pearlware Hand Painted		1		1
1800-1880	Stoneware, Albany Slip/Salt Glaze	1			1
1820-Present	Whiteware, Plain	4		2	6
1830-1900	Yellowware, Rockingham-Bennington	1			1
1840-1920	Whiteware, Flowing Colors	1			1
1857-1864	Ironstone	1			1
Total		20	3	2	25



Photograph 5-11. Selected nineteenth century diagnostic ceramic sherds of a) flow blue whiteware from JTP 12, b) shell-edged pearlware from EU 04, c) annular pearlware from A01-90°, d) Rockingham-Bennington sherd from EU 01, e) Albany slipped stoneware from TD-01, f) red transfer-printed whiteware from JTP 07, g) blue transfer-printed pearlware from EU 04, and h) black transfer-printed pearlware from JTP 02.

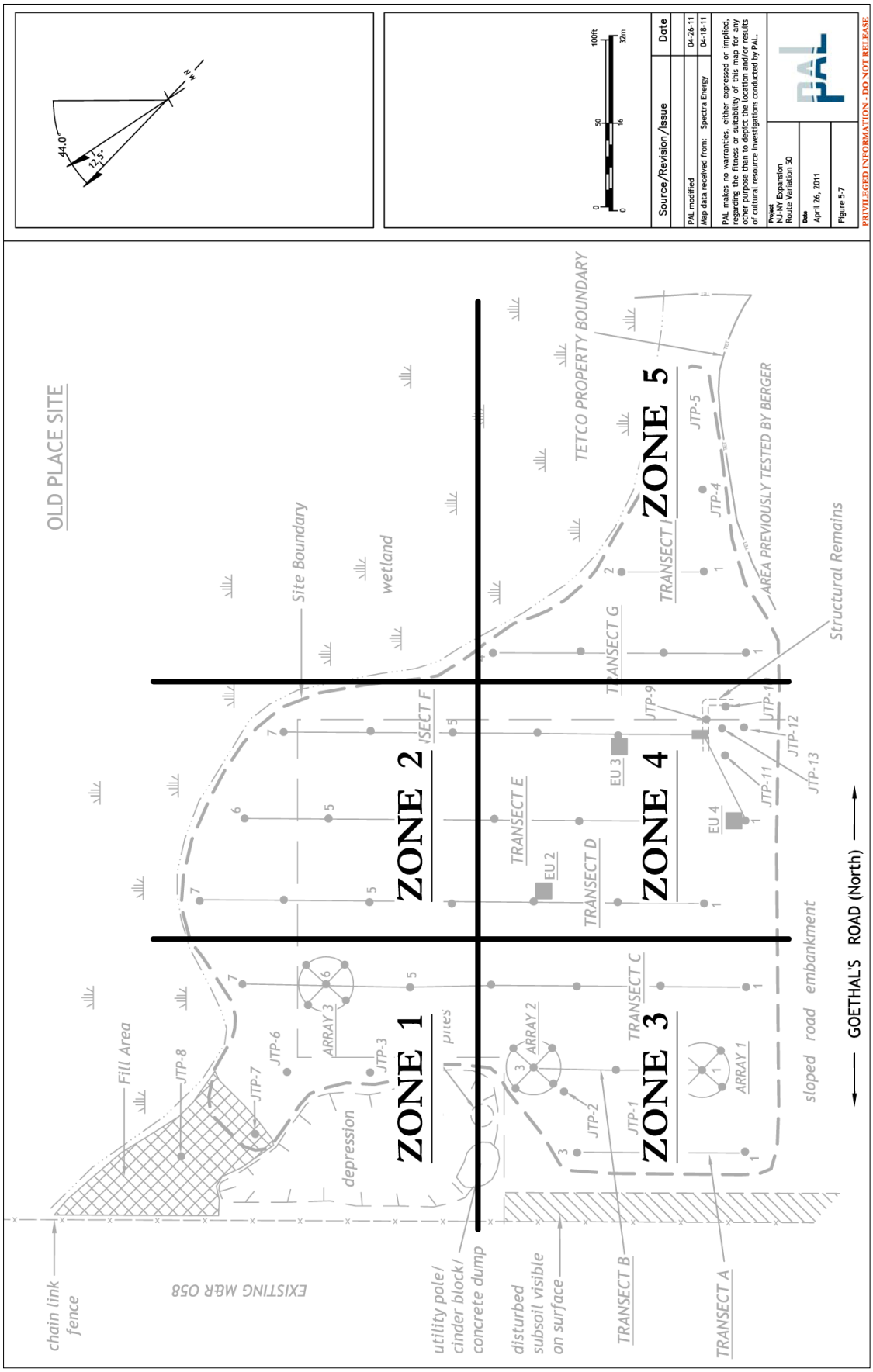


Figure 5-7. Map of testing area divided into 5 zones used to examine the horizontal distribution of post-contact materials.

artifacts occur most frequently in Zones 4 and 3, respectively (Figure 5-8). The structural remains are located within Zone 4, and as expected, the frequency of structural items is substantially higher in Zone 4 relative to the other areas, confirming the presence of a former structure in this area despite the lack of articulated remains. The incidence of domestic and personal items is also highest in Zone 4 (Figure 5-8). Domestic and personal items are also more frequent in Zone 3 relative to Zones 1, 2, and 5, although this may be due to the higher number of test pits (arrays) located in Zone 3 (see Figure 5-8). Examination of the horizontal distribution of material by date range reveals that all zones of the site contain high frequencies of mid-nineteenth century items when compared to items having earlier and later dates ranges of manufacture (Figure 5-9). The mid-nineteenth century items are most common in Zone 4, which contains the structural remains. The eighteenth century, or earlier items are comparatively scarcer across the site. In general, post-contact materials of all types and dates decrease in frequency in zones outside of the area containing the structural remains.

The diagnostic ceramics and their stratigraphic associations at the location of the former structure suggests it was possibly constructed sometime during the early to mid-nineteenth century, which may overlap with J. Carpenter's tenure as owner of the lot. It was initially suspected that the former structure could represent the remains of the J. Carpenter residence known to have been located along the north side of Old Place Road in the 1870s (see Figure 4-2). However, overlay of the more accurate 1874 Beers map onto a modern aerial photograph revealed that the former configuration of Old Place Road was well south of the Phase IB survey area, and that the location of the former J. Carpenter residence may lie just south of, or under the present-day Goethal's bridge roadways (US 278) (Figure 5-10). Therefore, the structural remains identified during the Phase IB survey more likely represent a building of unknown type and function located on what became Carpenter's back lot by the 1870s.

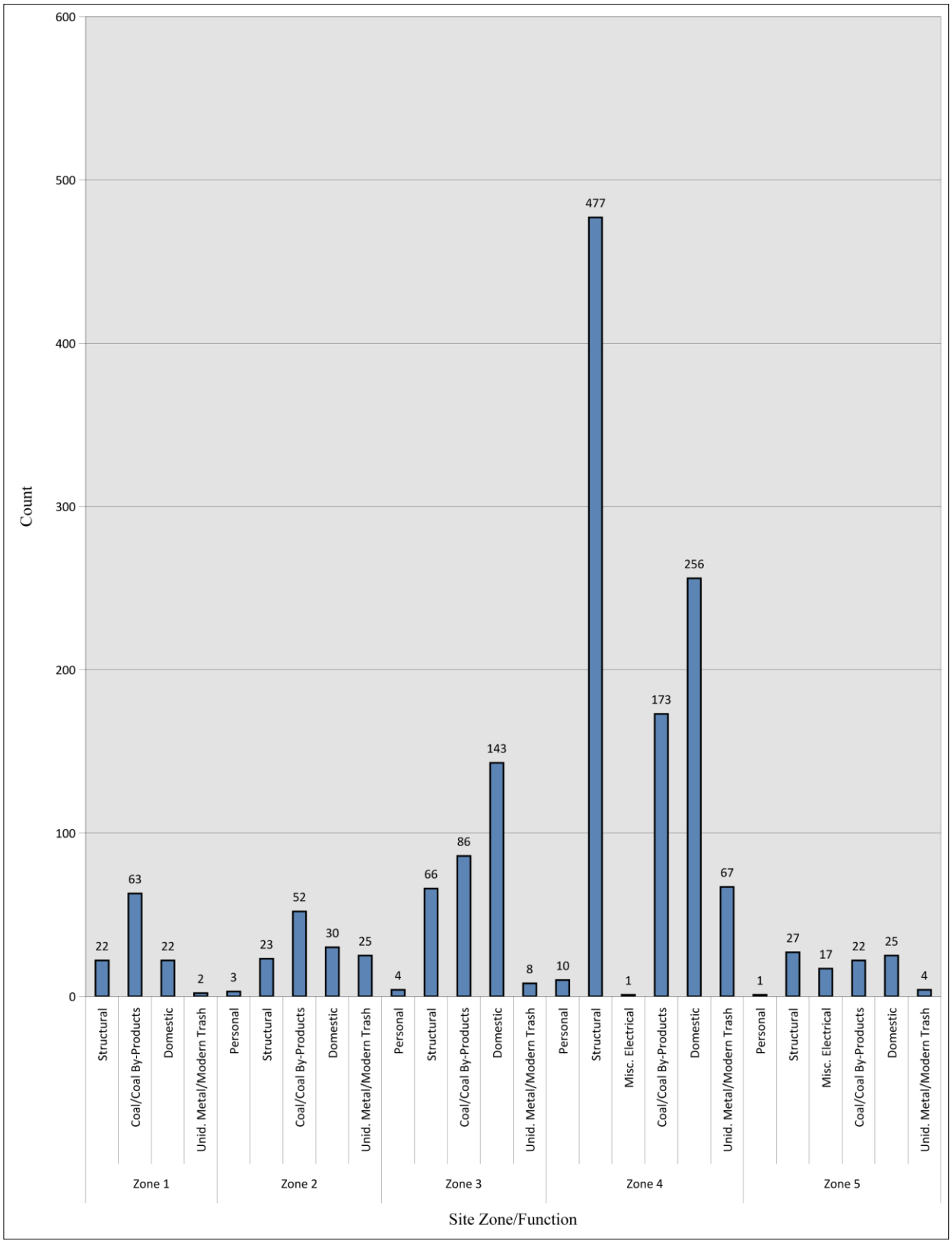


Figure 5-8. Frequency histogram of post-contact artifacts by functional category in Zones 1 though 5.

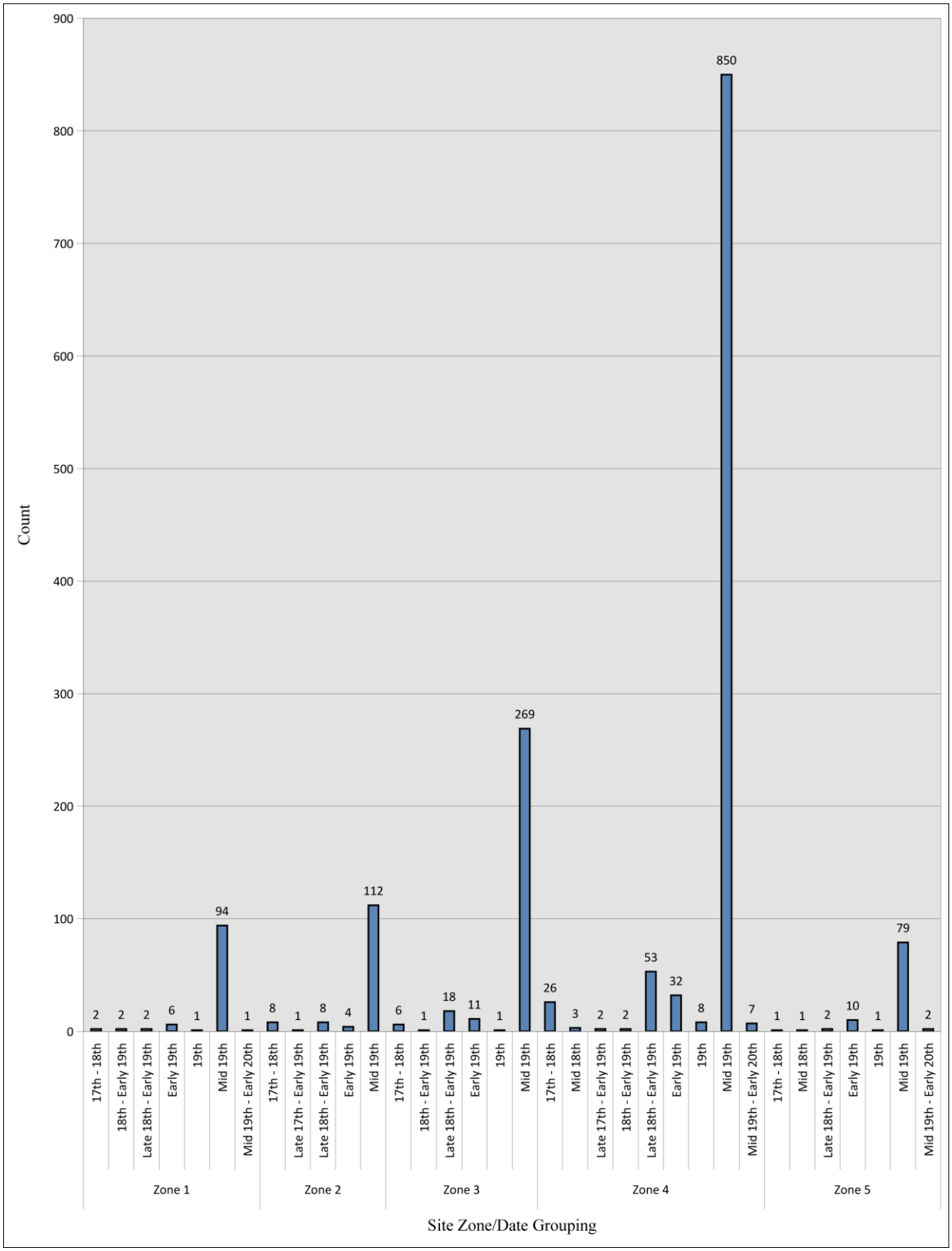


Figure 5-9. Frequency histogram of temporally diagnostic post-contact artifacts by manufacture date ranges in Zones 1 through 5.

Figure 5-10. Overlay of the 1874 Beers map onto a recent aerial photograph showing the location of former roads and structures relative to the Project area.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Phase IB investigations of the Route Variation 50 workspace and adjoining areas to the north and south resulted in the identification of the Old Place Neck Site. Identified structural remains and cultural materials recovered from the site indicate that it contains both pre- and post-contact components. Finds of copper that include a wire ring; a flat, tear-drop shaped decorative piece; and two unidentifiable fragments may indicate a contact period component is also present at the site. This tentative interpretation may be supported by the fact that the Project area lies along a linear, raised landform historically known as Old Place Neck or Tunissen's Neck, which is the unspecified location of the previously recorded Old Place Site that included finds of contact period materials. The Old Place Site was first reported by Skinner as a village site located at the western end of the neck landform (Skinner 1909a:8-9). As Skinner's artifact collection notes also variably refer to finds in the vicinity as being from "Old Place," "Old Place Neck," or "Tunissen's Neck" (Skinner 1898–1909), it is reasonable to assume that finds from the Old Place Site could be present along the whole length of the neck landform. The Old Place Site also contained items dating to the Archaic and Woodland periods, indicating the possibility that the pre-contact materials from the presently identified site area could be associated with the previously recorded Old Place Site. Since the boundaries of the previously recorded Old Place Site remain uncertain, the Route Variation 50 archaeological finds are being reported as a separate site, designated the Old Place Neck Site.

The pre-contact artifact assemblage of the Old Place Neck Site consists of a low density of lithic artifacts across the testing area. Artifacts recovered from the testing area indicate the pre-contact component contains multiple temporal occupations. The jasper channel flake and argillite narrow stemmed projectile point suggest occupations potentially dating to the PaleoIndian and Late Archaic periods, respectively. Other evidence of an individual occupation episode includes the finds of the Normanskill chert chipping debris and biface fragment. These items were recovered from a single unit, EU 02, and suggest an individual episode of late stage stone tool manufacture or maintenance. The presence of the projectile point also indicates hunting activity. The majority of the materials were recovered from intact, undisturbed sediments indicating that the pre-contact assemblage has good integrity.

The recovered post-contact artifact assemblage of the Old Place Neck Site indicates a historical occupation or use of the area during the eighteenth and nineteenth centuries. Observed stratigraphy at the site indicates that it was historically used as a plowed field. The earlier, eighteenth century items found in the plowzone could have been redeposited during plowing of the area since that time, or were later incorporated into the Apz during subsequent plowing of an earlier occupation surface.

Evidence of a former structure was identified within the workspace along its southeast edge, and continues eastward of the workspace limits. The structural remains consist of linear, subtly bermed areas of concentrated brick deposits and demolition debris containing structural materials, and other post-contact items. The remains are disarticulated and lack good integrity, but the patterning of the demolition debris and brick, indicates that at least some approximation of the original footprint of the structure may remain. Demolition fill with dense brick deposits were observed in the test units placed on the four "sides" of the structural remains, whereas this stratum was totally absent in JTP 13 placed in the estimated "interior" of the former structure. The comparatively large amount of functionally structural items recovered from this zone relative to other zones supports this interpretation, as well as the fact that structural materials decrease substantially in frequency in areas away from the former structure. Based on stratigraphic observations for this location, the area was plowed prior to the structure being built.

The diagnostic post-contact materials associated with structural remains and underlying plowzone suggest an early to mid-nineteenth century date of construction. According to historic maps (Beers 1874, Dripps 1872) J. Carpenter owned the lot containing the structural remains during the 1870s, and the presence of the structure may overlap with his tenure of the property. Overlay of the more accurate 1874 Beers map onto a modern aerial photograph indicates that the structure is not likely to have been the Carpenter residence, now believed to be located south of the testing area below or on the south side of the Goethal's Bridge roadways (Staten Island Expressway – US 278). The

structural remains identified during the Phase IB investigations more likely represent a building located towards the rear of the Carpenter property away from the road. Based on the types of structural materials present, the structure likely had a brick and mortar construction footing (piers or sills) and probable painted, plaster interior. The presence of machine-cut nails suggests a probable wood structure rested on the brick footing. A decorated plastered interior suggests that the building was not a simple shed or outbuilding, but its purpose or function is unknown.

Recommendations

Both the pre-contact and post-contact components of the Old Place Neck Site are considered potentially significant archaeological resources identified within and adjacent to the Route Variation 50 Project workspace. Given the extent of twentieth century industrial and commercial development in the general area, the vacant wooded lot containing the Old Place Neck Site remains one of the few undeveloped places along the Old Place landform. The site has the potential to yield substantial information about both the pre- and post-contact occupation of the area historically known as "Old Place" on Staten Island.

The Old Place Neck Site is recommended as potentially eligible for listing in the National Register of Historic Places under Criterion D. Criterion D pertains to sites that have yielded and/or have the potential to yield information important in prehistory and history. Additional archaeological investigation of the Old Place Neck Site in the form of a Phase II site evaluation is recommended to determine the site's significance and eligibility to the National Register.

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APPENDIX A

CORRESPONDENCE

NEW YORK STATE HISTORIC PRESERVATION OFFICE
CORRESPONDENCE

PAL
Public Archaeology Laboratory

March 16, 2011

Ruth L. Pierpont
Executive Director, State Historic Preservation Officer
New York State Office of Parks, Recreation, and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island State Park
P.O. Box 189
Waterford, New York 12188-0189

Attn.: Douglas P. Mackey

Re: Spectra Energy Corp – Texas Eastern Transmission, LP and Algonquin Gas Transmission, LLC
NJ-NY Expansion Project – Route Variation 50 Phase IB Archaeological Survey Proposal
OPRHP #09PR05949; FERC Docket #CP11-56-000; PAL #2367.02

Dear Ms. Pierpont:

On behalf of Texas Eastern Transmission, LP (Texas Eastern) and Algonquin Gas Transmission, LLC (Algonquin), subsidiaries of Spectra Energy Corp (Spectra Energy), enclosed please find a technical proposal to perform a Phase IB archaeological survey for a portion of Route Variation 50 for the NJ-NY Expansion Project. The proposed testing area is adjacent to Spectra Energy's existing metering and regulating (M&R) Station 058 in Staten Island, New York.

If you have any questions or require additional information, please do not hesitate to contact Suzanne G. Cherau, Principal Investigator, or me, at your convenience. We appreciate your time and attention to this matter.

Sincerely,

Gregory R. Dubell, RPA
Energy Projects Manager

Enclosure

cc: George A. McLachlan, Spectra Energy (w/o encl.)
Michael Tyrrell, TRC Environmental Corp. (w/o encl.)

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Gregory R. Dubell

From: Gregory R. Dubell
Sent: Thursday, March 17, 2011 2:09 PM
To: 'Mackey, Douglas (PEB)'
Cc: Suzanne G. Cherau; Deborah C. Cox; 2367.02 NJ-NY Expansion 2011
Subject: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island
Attachments: 2367.02 NJ-NY Expansion - M&R 058 Archaeological Proposal to NY SHPO - 3-16-2011.pdf

Doug,

We sent a hard copy of the attached letter and document to your office but I wanted to send you a PDF as well. Can you please review the attached proposal for PAL to perform archaeological hand testing for the NJ-NY Expansion Project at one area in Staten Island? If it would be possible for you to let us know via email if you concur with the proposed methodology, we would greatly appreciate it.

In the meantime, if you have any questions or require additional information, please do not hesitate to contact Suzanne Cherau or me.

Thanks,
Greg

Gregory R. Dubell, MA, RPA
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Gregory R. Dubell

From: Mackey, Douglas (PEB) [Douglas.Mackey@oprhp.state.ny.us]
Sent: Wednesday, April 06, 2011 3:55 PM
To: Gregory R. Dubell
Subject: RE: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island

Thanks

I am out of the office for the next few days but will try to check in via e-mail form time to time

Doug

_____
From: Gregory R. Dubell [GDubell@PALINC.COM]
Sent: Wednesday, April 06, 2011 2:29 PM
To: Mackey, Douglas (PEB); Suzanne G. Cherau; 'Amanda Sutphin'
Cc: Gina Santucci; Deborah C. Cox; 2367.02 NJ-NY Expansion 2011
Subject: RE: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island

Hi Doug,

We will be sending the tribes copies of the report once it is prepared. We did not intend to contact the tribes while we're currently in the field during this phase of fieldwork.

There were a couple of tribes where we received comments (Delaware Tribe of Indians and Stockbridge-Munsee) requesting continued consultation. Other tribes we either spoke to a representative on the phone or left a voice message. Unless the representative requested to not be included for future consultation, we continued to send them information.

We will be circling-back with the tribal representatives later this week and it is possible some of the tribes identified in my email below will request no further consultation. We will make sure you receive any documentation of consultation.

Please feel free to call with questions. I'll be in the office for the remainder of the week.

Thanks,
Greg

-----Original Message-----
From: Mackey, Douglas (PEB) <Douglas.Mackey@oprhp.state.ny.us>
Sent: Tuesday, April 05, 2011 3:08 PM
To: Gregory R. Dubell <GDubell@PALINC.COM>; Suzanne G. Cherau <SCherau@PALINC.COM>; 'Amanda Sutphin' <ASutphin@lpc.nyc.gov>
Cc: Gina Santucci <GSantucci@lpc.nyc.gov>; Deborah C. Cox <DCox@PALINC.COM>; 2367.02 NJ-NY Expansion 2011 <2367.02@PALINC.COM>
Subject: RE: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island

Greg,

Thanks - my question was more a reminder to PAL and the applicant that since Native materials were found, those nations still involved will need to be kept up to date - and I was asking what the protocol for that was - will you be contacting them soon as well - or waiting for some reason.

I do have to say I am a bit surprised by some of the Tribes still consulting - as most of them have never expressed to us that they have an interested in the NYC area. We have actively reached out to all those resident in NY state, and others as well. It may be that there interest lies on the Jersey side - do you have any specific info about that? For example, the Oneida and Mohawk have specifically told us they have no interested in the NY counties in questions previously. We have had interest expressed by the Unkechaug, Shinnecock, Mohicans (Stockbridge Munsee) and Delaware Nation.

Doug

-----Original Message-----
From: Gregory R. Dubell [mailto:GDubell@PALINC.COM]
Sent: Tuesday, April 05, 2011 2:58 PM
To: Suzanne G. Cherau; Mackey, Douglas (PEB); 'Amanda Sutphin'
Cc: Gina Santucci; Deborah C. Cox; 2367.02 NJ-NY Expansion 2011
Subject: RE: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island

Hi Doug,

Sorry for the delay in getting back to you regarding the Native American consultation procedures.

For the proposed NJ-NY Expansion project, the Federal Energy Regulatory Commission (FERC) is the lead federal agency for the Section 106 process and Native American (NA) consultation. FERC has guidelines regarding cultural resources surveys and NA consultation (http://www.ferc.gov/industries/gas/enviro/culresor.pdf).

On behalf of FERC, PAL initially contacted ten (10) Native American (NA) groups for the NJ-NY Project; FERC contacted one (1) additional federally recognized NA group for Project facilities in Connecticut. Federally recognized NA groups and their consultation statuses are as follows:

Federally Recognized:
Absentee-Shawnee Tribe of Oklahoma - No further consultation Delaware Nation of Oklahoma - Consultation ongoing Delaware Tribe of Indians - Consultation ongoing Oneida Indian Nation - Consultation ongoing Onondaga Nation - No further consultation Saint Regis Mohawk Tribe - Consultation ongoing Seneca Nation of Indians - No further consultation Shawnee Tribe of Oklahoma - Consultation ongoing Shinnecock Indian Nation - Consultation ongoing Stockbridge-Munsee Community of Wisconsin - Consultation ongoing Mohegan Tribe - Connecticut facilities only

PAL also contacted eight (8) non-federally recognized NA groups for the Project and their consultation statuses are as follows:

Non-Federally Recognized:
Cherokee Nation of New Jersey - Consultation ongoing Nanticoke Lenni-Lenape Indians - Consultation ongoing New Jersey Commission on Native American Affairs - Consultation ongoing Powhatan Renape Nation - Consultation ongoing Ramapough Lenape Indian Nation - Consultation ongoing Sand Hill Band of Indians - Consultation ongoing Sand Hill Historical Association - No further consultation Unkechaug Nation - Consultation ongoing

If you would like me to provide specific contact information for each of the NA tribal representatives, please let me know.

Thanks and please don't hesitate to contact me with additional questions.

Greg

-----Original Message-----
From: Suzanne G. Cherau
Sent: Monday, April 04, 2011 1:27 PM
To: 'Mackey, Douglas (PEB)'; 'Amanda Sutphin'
Cc: Gina Santucci; Deborah C. Cox; 2367.02 NJ-NY Expansion 2011; Gregory R. Dubell
Subject: RE: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island

Doug and Amanda,

Attached is our hand-drawn sketch map of the testing conducted to date in the proposed work space showing the surrounding parcel environment. Spectra has okayed PAL extending test pits beyond the work space to the edges of the wetlands in the owned parcel. We have modern disturbances on the Goethal's Road North side (south) and the fence line for the existing meter station to the west.

As for cultural material content - very preliminary - we haven't cleaned most of the artifacts yet, but we do have identified: several pieces of abo pottery (Woodland), very weathered argillite or sandstone stemmed point (probable Late-Terminal Archaic), jasper channel flake (possible Paleo-Early Archaic), several copper items (tear-drop decorative, wire ring, unid frag), an English gunflint, and a possible brick foundation with faint surface depression. The cultural materials are generally spread in a low density across the entire work space. No high concentrations yet in any one area. The larger units are strictly intended to provide Spectra Energy with the best possible information on potential eligibility since their first option is avoidance. We are still considering this additional work "locate and identify", this is not intended to be a Phase 2.

As for Native American contacts, we have 10 non-federally recognized and 8 federally recognized Tribes who have been consulted to date. The responses received all request continued consultation. Greg Dubell is traveling to NJ this morning with our field crew, and he will provide you with more information on the Native American contacts and protocols established with Spectra for the project later this afternoon.

Please let me know if you have any additional questions or concerns.
Regards, Suzanne

Suzanne G. Cherau, MA, RPA
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-----Original Message-----
From: Mackey, Douglas (PEB) [mailto:Douglas.Mackey@oprhp.state.ny.us]
Sent: Monday, April 04, 2011 9:53 AM
To: 'Amanda Sutphin'; Suzanne G. Cherau
Cc: Gina Santucci; Deborah C. Cox; 2367.02 NJ-NY Expansion 2011; Gregory R. Dubell
Subject: RE: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island

Suzanne -
Any additional info available yet - approximate period on historic, nature of prehistoric (flakes, tools, ceramics?). Also, just where is the material being found -in relation to overall testing area and to landform. Where are additional tests planned. If you are looking at that as a way of conducting Phase II while still in the field, be sure you get our concurrence on your efforts while the crew is still in the field to avoid a need to go back out if we think more is needed.

Also keep in mind there will be a need to consult with the Native Americans on this as well. I cannot recall which ones may have responded to any initial consultation. Do you have that info and their contacts. - What protocol will the project be using to contact them (have you been authorized to provide info directly or does need to go up the ladder to someone else". Please let me know the process in place. That way if I get the call from them I can let them know who to contact.

Thanks

Doug

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

-----Original Message-----
From: Amanda Sutphin [mailto:ASutphin@lpc.nyc.gov]
Sent: Monday, April 04, 2011 9:44 AM
To: Suzanne G. Cherau
Cc: Gina Santucci; Deborah C. Cox; 2367.02 NJ-NY Expansion 2011; Mackey, Douglas (PEB); Gregory R. Dubell
Subject: RE: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island

Do you have a plan showing the additional testing locations and how they relate to your finds?

-----Original Message-----
From: Suzanne G. Cherau [mailto:SCherau@PALINC.COM]
Sent: Monday, April 04, 2011 9:43 AM
To: Amanda Sutphin
Cc: Gina Santucci; Deborah C. Cox; 2367.02 NJ-NY Expansion 2011; Mackey, Douglas (PEB); Gregory R. Dubell
Subject: RE: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island

Amanda,

I am emailing to let you know that PAL is finding both pre and post contact cultural deposits at the Staten Island work area of the NJ-NY Expansion Project. This week, we are going to open up a few larger units (50-x-1 and 1-x-1 meter) in the proposed work space and surrounding parcel to get a better idea of the spatial relationship and context of these deposits. We anticipate completion of the fieldwork in this area by the end of the week.

Please let me know if you have any questions or concerns, as the PAL Principal Investigator for this work. I can be reached by email or at my direct office number listed below.

Regards, Suzanne

Suzanne G. Cherau, MA, RPA
Senior Archaeologist
scherau@palinc.com
PAL
Cultural Resource Management
210 Lonsdale Avenue
Pawtucket, RI 02860

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www.palinc.com

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From: Amanda Sutphin [ASutphin@lpc.nyc.gov]
Sent: Friday, March 18, 2011 2:14 PM
To: Gregory R. Dubell
Cc: Gina Santucci; Suzanne G. Cherau; Deborah C. Cox; 2367.02 NJ-NY Expansion 2011; Mackey, Douglas (PEB)
Subject: RE: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island

Review attached.

Amanda Sutphin, RPA
Director of Archaeology
New York City Landmarks Preservation Commission Municipal Building, 9th Fl
1 Centre St
New York, NY 10007
(212) 669-7823

From: Gregory R. Dubell [mailto:GDubell@PALINC.COM]
Sent: Thursday, March 17, 2011 2:11 PM
To: Amanda Sutphin
Cc: Gina Santucci; Suzanne G. Cherau; Deborah C. Cox; 2367.02 NJ-NY Expansion 2011
Subject: NJ-NY - Phase IB Archaeological Survey Proposal - Staten Island

Amanda,

We sent a hard copy of the attached letter and document to your office but I wanted to send you a PDF as well. Can you please review the attached proposal for PAL to perform archaeological hand testing for the NJ-NY Expansion Project at one area in Staten Island? If it would be possible for you to let us know via email if you concur with the proposed methodology, we would greatly appreciate it.

In the meantime, if you have any questions or require additional information, please do not hesitate to contact Suzanne Cherau or me.

Thanks,
Greg

Gregory R. Dubell, MA, RPA
Energy Projects Manager
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NEW YORK CONSULTING PARTIES CORRESPONDENCE

Public Archaeology Laboratory

March 16, 2011

Gina Santucci
Environmental Review Coordinator
New York City Landmarks Preservation Commission
Municipal Building, One Centre Street, 9th Floor
New York, New York 10007

Attn.: Amanda Sutphin

Re: Spectra Energy Corp – Texas Eastern Transmission, LP and Algonquin Gas Transmission, LLC
NJ-NY Expansion Project – Route Variation 50 Phase IB Archaeological Survey Proposal
OPRHP #09PR05949; FERC Docket #CP11-56-000; PAL #2367.02

Dear Ms. Santucci:

On behalf of Texas Eastern Transmission, LP (Texas Eastern) and Algonquin Gas Transmission, LLC (Algonquin), subsidiaries of Spectra Energy Corp (Spectra Energy), enclosed please find a technical proposal to perform a Phase IB archaeological survey for a portion of Route Variation 50 for the NJ-NY Expansion Project. The proposed testing area is adjacent to Spectra Energy's existing metering and regulating (M&R) Station 058 in Staten Island, New York.

If you have any questions or require additional information, please do not hesitate to contact Suzanne G. Cherau, Principal Investigator, or me, at your convenience. We appreciate your time and attention to this matter.

Sincerely,

Gregory R. Dubell, RPA
Energy Projects Manager

Enclosure

cc: George A. McLachlan, Spectra Energy (w/o encl.)
Michael Tyrrell, TRC Environmental Corp. (w/o encl.)
Ruth L. Pierpont, New York SHPO (w/o encl.)

210 Lonsdale Avenue Pawtucket, RI 02860 | 401.728.8780 Main | 401.728.8784 Fax
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THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION
1 Centre Street, 9N, New York, NY 10007 (212) 669-7700 www.nyc.gov/landmarks

ENVIRONMENTAL REVIEW

FEDERAL ENERGY REGULATORY COMM/106-Y 3/17/2011

Project number **Date received**

Project: **NJ-NY Expansion Project- Route Variation 50**

Comments: The LPC is in receipt of the, "Technical Proposal NJ-NY Expansion Project- Route Variation 50, Phase 1B Archaeological Survey FERC Docket No. CP11-56-000," prepared by PAL and dated March 14, 2011. The LPC concurs with the scope. Please notify the Commission when work begins. cc: SHPO

3/18/2011

SIGNATURE DATE

26346_FSO_ALS_03182011.doc

Landmarks Preservation Commission

1 Centre Street
9th Floor North
New York, NY 10007

Voice (212)-669-7700
Fax (212)-669-7960
http://nyc.gov/landmarks

ARCHAEOLOGY

Project number: FEDERAL ENERGY REGULATORY COMM / 106-Y
Project: NJ/NY EXPANSION PROJECT GAS PIPELINE(SPECTRA)
Date received: 4/4/2011

Archaeological Review only:

Comments: The LPC is in receipt of a request from PAL dated April 4, 2011, to locate and identify archaeological resources that have been uncovered during the on-going Phase 1B testing. We note that this additional work is a continuation of the approved 1B testing, and is not a Phase 2, therefore, we concur that the additional work may proceed.

cc: Doug Mackey, SHPO

4/8/2011

SIGNATURE DATE
Amanda Sutphin, Director of Archaeology

File Name: 26346_FSO_ALS_04082011.doc

APPENDIX B

ARTIFACT CATALOG

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
A01-090 20-30, Apz	Glass	Curved Glass		Fragment	Colorless		☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
A01-090 30-40, Apz	Coal	Coal					☐	2
	Refined Earthenware Pearlware Annular	Holloware		Rim	Blue, White	1780 1820	☐	1
A01-180 0-10, Developing A	Coal	Coal					☐	1
	Glass	Curved Glass		Fragment	Aqua		☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
	Shell	Bivalve Oyster		Fragment			☐	1
A01-180 10-20, Apz	Ball Clay	Smoking Pipe		Bowl	White		☐	1
	Coal	Coal					☐	3
	Earthenware	Brick		Fragment	Red		☐	3
A01-180 20-30, Apz	Coal	Coal					☐	2
	Coal Ash	Coal					☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	1
A01-180 30-40, Apz	Copper	Tack		Mostly Complete			☐	1
A01-270 0-10, Developing A	Coal	Coal					☐	3
	Earthenware	Brick		Fragment	Red		☐	2
	Glass	Flat Glass		Fragment	Aqua		☐	1
	Refined Earthenware	Ceramic Sherd		Fragment	White	1762 1850	☐	1
A01-270 10-20, Apz	Coal	Coal					☐	2
	Earthenware	Brick		Fragment	Red		☐	3
	Shell	Bivalve Oyster		Fragment			☐	2
	Shell	Bivalve Quahog		Fragment			☐	1
A01-270 20-30, Apz	Earthenware	Brick		Fragment	Red		☐	1
	Shell	Bivalve		Fragment			☐	1
A01-270 30-40, Apz	Shell	Bivalve Oyster		Fragment			☐	1
A01-360 0-10, Developing A	Charcoal	Charcoal					☐	1
	Coal	Coal					☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
A01-360 0-10, Developing A	Coal Ash	Coal					☐	1
	Plastic	Unidentified		Fragment	Transluscent, White		☐	2
A01-360 10-20, Apz	Coal	Coal					☐	3
	Earthenware	Brick		Fragment	Red		☐	2
A01-360 20-30, Apz	Coal Bituminous	Coal					☐	3
	Earthenware	Brick		Fragment			☐	3
	Glass	Flat Glass		Fragment	Aqua		☐	1
A02-090 10-20, Apz	Coal	Coal					☐	3
	Earthenware	Brick		Fragment	Red		☐	1
	Shell	Bivalve Oyster		Fragment			☐	1
	Slag	Slag					☐	1
A02-090 20-30, Apz	Coal	Coal					☐	1
	Glass Molded Glass	Bottle/Jar		Fragment	Olive		☐	1
	Iron	Unidentified		Fragment			☐	1
	Refined Earthenware	Ceramic Sherd		Fragment	Beige, Blue		☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
A02-090 30-40, Apz	Ball Clay	Smoking Pipe		Bowl Fragment	White		☐	1
	Coal	Coal					☐	2
	Refined Earthenware	Ceramic Sherd		Fragment	Beige, Blue		☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Fragment	White	1762 1820	☐	2
	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	2
A02-180 0-10, Developing A	Glass	Flat Glass		Fragment	Aqua		☐	1
	Porcelain Hard Paste	Ceramic Sherd		Fragment	White	1700 Present	☐	1
	Refined Earthenware Whiteware Transfer Print	Ceramic Sherd		Fragment	Blue, White	1820 Present	☐	1
A02-180 20-30, Apz	Coal	Coal					☐	4
	Glass	Flat Glass		Fragment	Frosted		☐	1
A02-180 30-40, Disturbed	Coal	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	1
A02-270 10-20, Developing A	Coal	Coal					☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
A02-270 10-20, Developing A	Earthenware	Brick		Fragment	Red		☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	1
A02-270 20-30, Apz	Coal	Coal					☐	2
	Earthenware	Brick		Fragment	Red		☐	1
	Iron	Unidentified		Fragment			☐	1
A02-270 30-40, Apz	Glass	Bottle/Jar		Body	Olive		☐	1
	Glass	Curved Glass		Fragment	Colorless		☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
A02-270 40-50, Apz	Earthenware	Brick		Fragment	Red		☐	2
	Iron	Nail Unidentified Nail		Fragment			☐	2
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	2
	Shell	Bivalve		Fragment			☐	2
A02-360 0-10, Developing A	Coal	Coal					☐	1
A02-360 10-20, Apz	Coal	Coal					☐	2
	Coal Ash	Coal					☐	3
	Earthenware	Brick		Fragment	Red		☐	1
	Shell	Bivalve		Fragment			☐	1
A02-360 20-30, Apz	Ball Clay	Smoking Pipe		Bowl Fragment	White		☐	1
	Calcined Bone	Mammal		Fragment			☐	1
	Coal	Coal					☐	3
	Coarse Earthenware Redware	Ceramic Sherd		Fragment	Red	1600 Present	☐	1
	Coarse Earthenware Redware Trailed Slipware	Ceramic Sherd		Fragment	Red, White	1700 1830	☐	1
	Copper	Unidentified		Fragment			☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	2
	Sedimentary Chert	Utilized Flake	1-3cm2.39x1.63x	Complete	Dk Gray		☐	1
	Sedimentary Chert	Chipping Debris Shatter	1-3cm	Complete Cortex	Gray, White		☐	1
	Sedimentary Jasper	Chipping Debris Flake	0-1cm	Complete	Tan		☐	1
A02-360 30-40, Apz	Glass	Flat Glass		Fragment	Colorless		☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
A02-360 40-50, Apz	Coal	Coal					☐	2
	Refined Earthenware Whiteware	Ceramic Sherd		Rim	White	1820 Present	☐	1
A02-360 60-70, B1	Sedimentary Chert	Chipping Debris Flake	0-1cm	Complete Cortex	Dk Gray		☐	1
A03-090 0-10, Developing A	Coal	Coal					☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	1
A03-090 10-20, Apz	Coal	Coal					☐	3
A03-090 20-30, Apz	Coal	Coal					☐	1
A03-180 0-10, Developing A	Coal	Coal					☐	9
	Earthenware	Brick		Fragment	Red		☐	1
	Shell	Bivalve Oyster		Fragment			☐	3
A03-180 10-20, Apz	Coal	Coal					☐	5
	Glass	Flat Glass		Fragment	Colorless		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
A03-180 20-30, Apz	Coal	Coal					☐	8
	Earthenware	Brick		Fragment	Red		☐	2
	Ferrous	Unidentified		Fragment			☐	1
	Glass	Curved Glass		Fragment	Colorless		☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
A03-180 30-40, Apz	Coal	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	2
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
A03-360 0-10, Developing A	Coal	Coal					☐	6
	Coal Ash	Coal					☐	1
	Stoneware American Stoneware Albany Slip	Ceramic Sherd		Body	Brown, Red	1840 1930	☐	1
A03-360 10-20, Apz	Coal	Coal					☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	1
	Slag	Slag					☐	1
EU01 0-10, Demolition Fill	Earthenware	Brick		Fragment	Red		☐	10
	Ferrous	Nail Machine Cut Nail		Mostly Complete	Red, Rust	1790 1900	☐	8

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
EU01 0-10, Demolition Fill	Other Mineral	Unidentified		Fragment	White		☐	2
	Plaster/Mortar	Plaster/Mortar					☐	5
EU01 10-20, Demolition Fill	Earthenware	Brick		Fragment	Red		☐	11
	Ferrous	Unidentified		Fragment	Rust		☐	1
	Ferrous	Nail Machine Cut Nail		Fragment	Rust	1790 1900	☐	1
	Glass	Curved Glass		Body	Olive		☐	3
	Plaster/Mortar	Plaster/Mortar					☐	6
	Plaster/Mortar	Plaster/Mortar		Painted			☐	1
	Refined Earthenware Pearlware Hand Painted	Ceramic Sherd		Base	Blue, White	1795 1820	☐	1
	Shell	Bivalve Oyster		Fragment	White		☐	1
EU01 20-30, Apz	Coal Bituminous	Coal					☐	10
	Earthenware	Brick		Fragment	Red		☐	12
	Ferrous	Nail Unidentified Nail		Fragment	Rust		☐	8
	Glass	Flat Glass Window Glass		Fragment	Aqua, Clear		☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Body	White	1762 1820	☐	3
	Refined Earthenware Ironstone	Holloware		Base	White	1857 1864	☑	1
	Refined Earthenware Pearlware	Ceramic Sherd		Body	White	1779 1830	☐	2
	Refined Earthenware Whiteware	Ceramic Sherd		Rim	White	1820 Present	☐	1
	Refined Earthenware Yellowware Rockingham-Bennington	Holloware		Body	Brown, Yellow	1830 1900	☐	1
EU01 30-40, Apz/B1	Earthenware	Brick		Fragment	Red		☐	3
	Glass	Flat Glass		Fragment	Aqua, Clear		☐	1
	Porcelain	Ceramic Sherd		Body	White		☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	1
EU02 10-20, Apz	Charcoal	Charcoal					☐	1
	Clinker/Coke	Clinker/Coke					☐	1
	Coal Bituminous	Coal					☐	9
	Earthenware	Brick		Fragment	Red		☐	1
	Earthenware	Brick		Fragment Burned	Black, Red		☐	1
	Ferrous	Unidentified		Fragment	Rust		☐	2

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
EU02 10-20, Apz	Glass	Flat Glass		Fragment	Aqua, Clear		☐	2
	Glass	Curved Glass		Body	Aqua, Clear		☐	3
	Glass Molded Glass	Curved Glass		Body	Colorless		☐	1
	Kaolin	Smoking Pipe Marked Pipe		Body	White		☐	1
	Porcelain Porcelaneous	Ceramic Sherd		Body	Green, White	1840 Present	☐	1
	Refined Earthenware	Holloware		Body	Brown, Tan		☐	1
	Refined Earthenware	Ceramic Sherd		Fragment Burned	Black, Gray		☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Body	White	1762 1820	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	1
	Sedimentary Chert	Chipping Debris Flake	1-3cm	Complete	Dk Gray		☐	1
	Sedimentary Flint	Gun Flint English Gunflint		Complete	Gray, Light		☐	1
	Slag	Slag					☐	1
EU02 20-30, Apz	Coal Anthracite	Coal					☐	2
	Coal Ash	Coal Ash					☐	1
	Coal Bituminous	Coal					☐	12
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Body	Brown, Dark, Red	1600 Present	☐	1
	Earthenware	Brick		Fragment	Red		☐	6
	Ferrous	Unidentified		Fragment	Rust		☐	4
	Glass	Flat Glass Window Glass		Fragment	Aqua, Clear		☐	6
	Glass	Curved Glass		Body	Colorless		☐	1
	Glass Molded Glass	Curved Glass		Body	Olive		☐	3
	Metamorphic Slate	Shingle		Fragment	Gray		☐	1
	Porcelain	Ceramic Sherd		Base	Purple, White		☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Body	White	1762 1820	☐	3
	Refined Earthenware Ironstone	Ceramic Sherd		Fragment	White	1840 Present	☐	1
	Refined Earthenware Pearlware	Ceramic Sherd		Body	Brown, White	1818 1869	☐	2
	Refined Earthenware Pearlware Molded Rim	Flatware		Rim	White	1820 1830	☐	1
	Refined Earthenware Red-Bodied Refined Astbury Type	Holloware		Body	Ginger, Red	1720 1760	☐	2
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
EU02 20-30, Apz	Shell	Bivalve Oyster		Fragment	White		☐	1
EU02 30-40, Apz	Coal Ash	Coal Ash					☐	1
	Coal Bituminous	Coal					☐	11
	Coarse Earthenware Redware	Ceramic Sherd		Body	Red	1600 Present	☐	1
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Body	Brown, Dark, Red	1600 Present	☐	1
	Earthenware	Brick		Fragment	Red		☐	1
	Ferrous	Unidentified		Fragment	Rust		☐	2
	Glass	Curved Glass		Body	Olive		☐	1
	Glass	Flat Glass Window Glass		Fragment	Aqua, Clear		☐	2
	Kaolin	Smoking Pipe Unmarked Pipe		Bowl	Black, White		☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Body	White	1762 1820	☐	2
EU02 30-40, B1	Sedimentary Chert Normanskill	Biface	1.68x0.78x0.39	Fragment	Green		☐	1
EU02 40-50, B1	Sedimentary Chert Normanskill Chert	Chipping Debris Flake	0-1cm	Fragment	Green		☐	2
	Sedimentary Jasper	Chipping Debris Flake	1-3cm	Complete	Tan		☐	1
EU02 50-60, B1	Sedimentary Chert Normanskill Chert	Chipping Debris Flake	1-3cm	Fragment	Green		☐	2
EU03 0-10, Developing A	Coarse Earthenware Redware	Ceramic Sherd		Body	Red	1600 Present	☐	3
	Earthenware	Brick		Fragment	Red		☐	1
	Ferrous	Unidentified		Fragment	Rust		☐	1
EU03 10-20, Apz	Coal Bituminous	Coal					☐	3
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Rim	Ginger, Red	1600 Present	☐	1
	Coarse Earthenware Redware Trailed Slipware	Flatware		Body	Brown, Red, White	1700 1830	☐	1
	Earthenware	Brick		Fragment	Red		☐	2
	Ferrous	Unidentified		Fragment	Rust		☐	6
	Ferrous	Nail Unidentified Nail		Mostly Complete	Rust		☐	1
	Glass	Flat Glass		Body	Amber, Olive		☐	1
	Glass	Flat Glass Window Glass		Fragment	Aqua, Clear		☐	5
	Glass	Flat Glass		Body	Aqua, Clear		☐	

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
EU03 10-20, Apz	Glass	Curved Glass		Body	Colorless		☐	1
	Refined Earthenware Pearlware	Ceramic Sherd		Body	White	1779 1830	☐	1
	Refined Earthenware Pearlware	Ceramic Sherd		Body	Blue, White	1779 1830	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	3
	Refined Earthenware Whiteware Shell-Edged Rim	Ceramic Sherd		Rim	Blue, White	1835 1870	☐	1
	Stoneware English Brown Fulham	Holloware		Body	Brown, Gray	1690 1775	☐	1
EU03 20-30, Apz	Coal	Coal					☐	6
	Coarse Earthenware Redware	Ceramic Sherd		Fragment	Red	1600 Present	☐	2
	Coarse Earthenware Redware Trailed Slipware	Ceramic Sherd		Fragment	Red, White	1700 1830	☐	1
	Earthenware	Brick		Fragment			☐	1
	Glass	Flat Glass		Fragment	Olive		☐	2
	Glass	Flat Glass		Fragment	Aqua		☐	5
	Iron	Nail Unidentified Nail		Fragment			☐	4
	Refined Earthenware	Ceramic Sherd		Fragment	White	1762 1820	☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Fragment	White	1762 1820	☐	7
	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	3
	Refined Earthenware Pearlware Hand Painted	Ceramic Sherd		Fragment	Blue, White	1795 1820	☐	1
	Stone	Building Stone		Fragment			☐	1
	Stoneware English Brown	Ceramic Sherd		Body	Brown, Gray	1690 1810	☐	1
EU03 30-40, Apz	Coal	Coal					☐	1
	Coal Bituminous	Coal					☐	3
	Earthenware	Brick		Fragment	Red		☐	2
	Ferrous	Unidentified		Fragment	Rust		☐	1
	Glass	Curved Glass		Body	Olive		☐	1
	Glass	Flat Glass Window Glass		Fragment	Aqua, Clear		☐	3
	Porcelain Chinese Export Overglaze Enamel	Ceramic Sherd		Rim	Gold, White	1660 1830	☐	1
	Refined Earthenware Pearlware Hand Painted	Ceramic Sherd		Body	Brown, White	1795 1820	☐	1

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
EU03 30-40, Apz	Refined Earthenware Pearlware Shell-Edged Rim	Ceramic Sherd		Rim	Green, White	1780 1830	☐	1
	Refined Earthenware Red-Bodied Refined Astbury Type	Ceramic Sherd		Body	Ginger, Red	1720 1760	☐	1
	Sedimentary Chert	Chipping Debris Flake	1-3cm	Complete	Brown, Dk Gray		☐	1
	Sedimentary Chert	Biface	2.6x0.9x0.83	Fragment	Gray		☐	1
EU03 40-50, B1	Sedimentary Chert	Chipping Debris Flake	3-5cm	Complete	Dk Gray		☐	1
	Sedimentary Chert	Chipping Debris Flake	1-3cm	Complete	Dk Gray		☐	7
	Sedimentary Chert	Chipping Debris Flake	1-3cm	Complete	Gray		☐	1
EU04 0-10, Fill/Slopewash	Coal	Coal					☐	6
	Glass	Flat Glass		Fragment	Olive		☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	6
	Glass	Flat Glass		Fragment	Frosted		☐	1
	Glass Molded Glass	Bottle/Jar		Fragment Double Ring	Amber	1910s Present	☐	4
	Glass Molded Glass	Bottle/Jar Medicine Bottle		Fragment Solarized Patent/Extract/Flat Embossed Cup Base Mold	Lavender	1880 1920	☐	22
	Glass Molded Glass	Bottle/Jar		Body	Aqua		☐	11
	Glass Molded Glass	Bottle/Jar		Lip Continuous Thread	Aqua	1910s Present	☐	
	Iron	Unidentified		Fragment			☐	9
	Iron	Wheel		Fragment			☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	2
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	3
	Slag	Slag					☐	18
	Styrofoam	Modern Trash					☐	1
EU04 10-20, Fill/Slopewash	Bone	Mammal		Fragment			☐	2
	Brass	Hinge		Complete			☐	1
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Brown, Red	1600 Present	☐	1
	Earthenware	Brick		Fragment	Red		☐	2
	Glass	Flat Glass		Fragment	Aqua		☐	16

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
EU04 10-20, Fill/Slopewash	Glass	Bottle/Jar		Fragment	Olive		☐	1
	Glass	Curved Glass		Fragment	Red		☐	2
	Glass	Flat Glass		Fragment	Olive		☐	1
	Glass Molded Glass	Bottle/Jar		Fragment	Colorless		☐	5
	Glass Molded Glass	Bottle/Jar Medicine Bottle		Fragment Parison Mold	Amber	1905 Present	☐	12
	Glass Molded Glass	Bottle/Jar		Lip Continuous Thread	Aqua	1910s Present	☐	1
	Iron	Unidentified		Fragment			☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	12
	Iron	Miscellaneous Hardware		Fragment			☐	8
	Iron	Machine Part		Fragment			☐	3
	Leather	Unidentified		Fragment			☐	2
	Plaster/Mortar	Plaster/Mortar		Fragment	Green, White		☐	1
	Porcelain	Insulator		Fragment	White		☐	1
	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	2
	Refined Earthenware Pearlware Transfer Print, Underglaze	Ceramic Sherd		Base	Blue, White	1795 1830	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	3
	Refined Earthenware Whiteware	Holloware		Rim	White	1820 Present	☐	1
	Rubber	Miscellaneous Hardware		Fragment			☐	1
	Slag	Slag					☐	6
	Synthetic	Unidentified		Fragment	Brown, Green		☐	1
EU04 20-30, Apz	Coal	Coal					☐	6
	Coal Ash	Coal					☐	1
	Coarse Earthenware Redware	Ceramic Sherd		Fragment	Red	1600 Present	☐	1
	Earthenware	Brick		Fragment	Red		☐	5
	Glass	Flat Glass		Fragment	Colorless		☐	8
	Iron	Nail Unidentified Nail		Fragment			☐	6
	Iron	Unidentified		Fragment			☐	3
	Refined Earthenware Whiteware	Ceramic Sherd		Rim	White	1820 Present	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	3

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
EU04 20-30, Apz	Refined Earthenware Whiteware Flowing Colors	Ceramic Sherd		Fragment	Blue, White	1840 1920	☐	2
	Shell	Bivalve		Fragment			☐	1
	Slag	Slag					☐	4
EU04 30-40, Apz	Coal	Coal					☐	2
	Earthenware	Brick		Fragment	Red		☐	2
	Glass	Bottle/Jar		Body	Olive		☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	4
	Glass Molded Glass	Curved Glass		Fragment	Colorless		☐	2
	Iron	Nail Unidentified Nail		Fragment			☐	2
	Iron	Unidentified		Fragment			☐	3
	Refined Earthenware Pearlware Hand Painted	Ceramic Sherd		Rim	Brown, White	1795 1820	☐	1
	Refined Earthenware Pearlware Shell-Edged Rim	Flatware		Rim	Green, White	1780 1830	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
	Refined Earthenware Whiteware Annular	Ceramic Sherd		Rim	Blue, White	1830 1962	☐	1
	Slag	Slag					☐	3
	Stoneware American Stoneware Albany Slip/Salt Glaze	Ceramic Sherd		Fragment	Brown, Gray	1800 1880	☐	1
EU04 40-50, Apz	Ball Clay	Smoking Pipe Unmarked Pipe		Bowl	White		☐	2
	Refined Earthenware	Ceramic Sherd		Fragment	White		☐	2
	Refined Earthenware Tin Enamel	Ceramic Sherd		Body	White	1600 1800	☐	5
	Sedimentary Chert	Chipping Debris Flake	1-3cm	Complete	Dk Gray		☐	1
EU04 50-60, B1	Sedimentary Chert	Chipping Debris Flake	1-3cm	Complete	Tan		☐	1
JTP01 0-10, Dev A	Coal	Coal					☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
	Glass Molded Glass	Curved Glass		Fragment	Aqua		☐	23
	Glass Molded Glass	Drinking Glass Tumbler		Base/Body Solarized	Lavender	1880 1920	☐	4
	Glass Molded Glass	Drinking Glass Tumbler		Fragment Solarized	Lavender	1880 1920	☐	10
JTP01 10-20, Dev A/Apz	Glass Molded Glass	Curved Glass		Fragment	Aqua		☐	12

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
JTP01 10-20, Dev A/Apz	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	2
	Shell	Bivalve Oyster		Fragment			☐	3
JTP01 20-30, Apz	Coal	Coal					☐	1
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Red	1600 Present	☐	1
	Glass	Bottle/Jar		Fragment	Olive		☐	1
	Glass Molded Glass	Curved Glass		Fragment	Lavender	1880 1920	☐	1
	Glass Molded Glass	Curved Glass		Fragment	Aqua		☐	17
	Iron	Nail Unidentified Nail		Fragment			☐	1
	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	4
JTP01 30-40, Apz	Glass Molded Glass	Curved Glass		Fragment Solarized	Lavender	1880 1920	☐	2
	Glass Molded Glass	Curved Glass		Fragment	Aqua		☐	11
JTP01 40-50, Disturbed/Apz	Glass Molded Glass	Curved Glass		Fragment	Aqua		☐	1
JTP01 60-70, Disturbed/Apz	Glass Molded Glass	Curved Glass		Fragment	Aqua		☐	3
JTP02 20-30, Apz	Ball Clay	Smoking Pipe		Stem 7/64ths	White		☐	1
	Coal	Coal					☐	4
	Coal Ash	Coal					☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	3
	Refined Earthenware	Ceramic Sherd		Fragment	White	1762 1850	☐	1
	Shell	Bivalve		Fragment			☐	1
JTP02 30-40, Apz	Refined Earthenware Pearlware Transfer Print, Underglaze	Ceramic Sherd		Fragment	Black, White	1795 1830	☐	3
JTP03 0-10, Apz	Coal	Coal					☐	4
JTP03 10-20, Apz	Coal	Coal					☐	1
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Red	1600 Present	☐	1
	Earthenware	Brick		Fragment	Red		☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	1
JTP04 10-20, Apz	Coal	Coal					☐	1
	Glass Molded Glass	Drinking Glass		Rim Solarized	Lavender	1880 1920	☐	1
	Shell	Bivalve Oyster		Fragment			☐	4
JTP04 20-30, Apz	Glass	Flat Glass		Fragment	Colorless		☐	3

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
JTP04 20-30, Apz	Refined Earthenware Red-Bodied Refined Astbury Type	Holloware		Body	Red	1720 1760	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	1
JTP04 30-40, Apz	Glass	Flat Glass		Fragment	Colorless		☐	2
JTP04 40-50, B1	Charcoal	Charcoal					☐	1
JTP05 10-20, Apz	Coal	Coal					☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
JTP06 20-30, Apz	Coal Ash	Coal					☐	1
	Porcelain Hard Paste	Holloware		Body	Blue, White	1700 Present	☐	1
JTP06 30-40, Apz	Earthenware	Brick		Fragment	Red		☐	3
JTP07 10-20, Fill 1	Glass	Curved Glass		Fragment	Colorless		☐	1
	Refined Earthenware Whiteware Transfer Print	Holloware		Body	Beige, Pink	1820 Present	☐	1
JTP07 20-30, Fill 2	Coarse Earthenware Redware Black Glaze	Ceramic Sherd		Fragment	Black, Red	1700 1830	☐	1
	Glass Molded Glass	Bottle/Jar		Body Embossed	Colorless		☐	1
JTP07 30-40, Fill 2	Coal	Coal					☐	2
JTP07 40-50, Apz	Coal	Coal					☐	1
	Coarse Earthenware Redware Black Glaze	Ceramic Sherd		Fragment	Black, Red	1700 1830	☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	2
	Refined Earthenware Creamware	Ceramic Sherd		Fragment	White	1762 1820	☐	1
JTP07 50-60, Apz	Coal Bituminous	Coal					☐	1
	Glass	Curved Glass		Body	Aqua, Clear		☐	1
	Glass Molded Glass	Curved Glass		Body	Aqua, Clear		☐	1
JTP09 0-10, Demolition Fill	Earthenware	Brick		Fragment	Red		☐	6
	Plaster/Mortar	Plaster/Mortar					☐	4
	Plaster/Mortar	Plaster/Mortar		Painted			☐	3
JTP09 10-20, Demolition Fill	Earthenware	Brick		Fragment	Red		☐	7
	Plaster/Mortar	Plaster/Mortar		Painted			☐	1
	Plaster/Mortar	Plaster/Mortar					☐	5
JTP09 20-30, Demolition Fill	Earthenware	Brick		Fragment	Red		☐	6

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
JTP09 20-30, Demolition Fill	Plaster/Mortar	Plaster/Mortar					☐	6
JTP09 30-40, Fill	Coal Bituminous	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	7
	Glass	Curved Glass		Body	Amber, Olive		☐	1
	Plaster/Mortar	Plaster/Mortar					☐	6
JTP09 40-50, Apz	Coal Bituminous	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	6
	Glass	Flat Glass Window Glass		Fragment	Aqua, Clear		☐	1
	Glass Molded Glass	Curved Glass		Body	Olive		☐	1
	Plaster/Mortar	Plaster/Mortar					☐	6
	Refined Earthenware Pearlware	Ceramic Sherd		Body	White	1779 1830	☐	1
JTP09 50-60, Apz	Earthenware	Brick		Fragment	Red		☐	6
	Ferrous	Unidentified		Fragment	Rust		☐	1
	Plaster/Mortar	Plaster/Mortar					☐	6
JTP09 60-70, Apz/B1	Coal Bituminous	Coal					☐	2
	Earthenware	Brick		Fragment	Red		☐	2
	Plaster/Mortar	Plaster/Mortar					☐	4
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	1
JTP10 0-10, Demolition Fill	Earthenware	Brick		Fragment	Red		☐	1
	Ferrous	Nail Machine Cut Nail		Mostly Complete	Rust	1790 1900	☐	1
	Glass	Flat Glass		Fragment	Aqua, Clear		☐	1
	Glass Molded Glass	Bottle/Jar		Body Solarized 1	Clear, Lavender	1880 1920	☐	2
	Plaster/Mortar	Plaster/Mortar		Painted			☐	6
JTP10 10-20, Demolition Fill	Earthenware	Brick		Fragment	Red		☐	6
	Ferrous	Unidentified		Fragment	Rust		☐	1
	Glass	Curved Glass		Body	Aqua, Clear		☐	11
	Glass Molded Glass	Curved Glass		Body Solarized	Clear, Lavender	1880 1920	☐	2
	Plaster/Mortar	Plaster/Mortar		Painted			☐	6
	Plaster/Mortar	Plaster/Mortar					☐	3
	Refined Earthenware Pearlware	Ceramic Sherd		Body	White	1779 1830	☐	1

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
JTP10 10-20, Demolition Fill	Refined Earthenware Pearlware Annular	Holloware		Body	Blue, White	1780 1820	☐	1
JTP10 20-30, Apz	Earthenware	Brick		Fragment	Red		☐	6
	Glass Molded Glass	Curved Glass		Body	Olive		☐	1
	Plaster/Mortar	Plaster/Mortar					☐	3
	Plaster/Mortar	Plaster/Mortar		Painted			☐	3
JTP10 30-40, Apz	Coal Bituminous	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	6
	Glass	Flat Glass Window Glass		Fragment	Aqua, Clear		☐	1
	Glass Molded Glass	Curved Glass		Body	Olive		☐	1
	Plaster/Mortar	Plaster/Mortar		Painted			☐	1
	Plaster/Mortar	Plaster/Mortar					☐	5
	Refined Earthenware Whiteware	Ceramic Sherd		Base	White	1820 Present	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	1
JTP10 40-50, Apz	Coal Bituminous	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	1
	Ferrous	Unidentified		Fragment	Rust		☐	1
	Glass	Curved Glass		Body	Aqua, Clear		☐	3
	Glass Molded Glass	Curved Glass		Body	Olive		☐	2
	Plaster/Mortar	Plaster/Mortar					☐	3
JTP11 0-10, Developing A	Earthenware	Brick		Fragment	Red		☐	6
	Plaster/Mortar	Plaster/Mortar					☐	6
JTP11 10-20, Apz	Earthenware	Brick		Fragment	Red		☐	7
	Kaolin	Smoking Pipe Marked Pipe		Bowl Fragment 5/64	White		☐	1
	Plaster/Mortar	Plaster/Mortar					☐	5
	Steel	Nail Wire Nail		Complete	Rust		☐	1
JTP11 20-30, Apz	Coal Bituminous	Coal					☐	2
	Earthenware	Brick		Fragment	Red		☐	2
	Plaster/Mortar	Plaster/Mortar					☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Body	White	1762 1820	☐	2

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
JTP11 20-30, Apz	Refined Earthenware Pearlware Hand Painted, Overglaze	Holloware		Base	Iridescent, Purple, White	1795 1815	☐	1
JTP11 30-40, Apz	Earthenware	Brick		Fragment	Red		☐	2
	Plaster/Mortar	Plaster/Mortar					☐	1
	Shell	Bivalve Quahog		Fragment	White		☐	4
JTP11 50-60, B1	Sedimentary Chert	Utilized Flake	1.78x1.67x0.26	Complete	Brown, Gray		☐	1
JTP12 0-10, Demolition Fill	Earthenware	Brick		Fragment	Red		☐	4
	Glass	Flat Glass Window Glass		Fragment	Aqua, Clear		☐	1
	Plaster/Mortar	Plaster/Mortar					☐	6
JTP12 10-20, Demolition Fill	Earthenware	Brick		Fragment	Red		☐	5
	Plaster/Mortar	Plaster/Mortar					☐	5
	Steel	Nail Wire Nail		Mostly Complete	Rust	1890 Present	☐	1
JTP12 20-30, Apz	Coal Bituminous	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	2
	Plaster/Mortar	Plaster/Mortar					☐	4
	Refined Earthenware Pearlware	Ceramic Sherd		Body	White	1779 1830	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	1
	Refined Earthenware Whiteware Flowing Colors	Ceramic Sherd		Base	Blue	1840 1920	☐	1
JTP13 0-10, Developing A	Earthenware	Brick		Fragment	Red		☐	6
	Glass	Flat Glass		Fragment	Colorless		☐	1
	Synthetic	Unidentified		Fragment	Brown, Green		☐	11
JTP13 10-20, Developing A	Earthenware	Brick		Fragment	Red		☐	8
	Ferrous	Nail Unidentified Nail		Fragment	Rust		☐	2
	Plaster/Mortar	Plaster/Mortar					☐	7
	Synthetic	Unidentified		Fragment	Brown, Green		☐	6
JTP13 20-30, Apz	Earthenware	Brick		Fragment	Red		☐	1
	Glass Molded Glass	Curved Glass		Body	Olive		☐	1
	Glass Molded Glass	Bottle/Jar		Base	Colorless	1880's +	☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Body	White	1762 1820	☐	1
	Stoneware American Stoneware Albany Slip/Salt Glaze	Holloware		Body	Gray, Tan	1800 1880	☐	1

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
Surface-Possible Foundation 0-0, Surface	Glass	Flat Glass		Fragment	Aqua		☐	1
	Glass	Flat Glass		Fragment	Frosted		☐	4
	Glass Molded Glass	Bottle/Jar Canning Jar		Base Embossed	Aqua	1896 1964	☑	1
	Glass Molded Glass	Bottle/Jar Medicine Bottle		Fragment Patent/Extract/Flat Embossed Parison Mold	Colorless	1885 1955	☑	5
	Glass Molded Glass	Bottle/Jar Soda/Water Bottle		Complete Crown Embossed Parison Mold	Aqua	1893 1913	☑	1
	Glass Molded Glass	Bottle/Jar Condiment Bottle		Complete Club Sauce Parison Mold	Colorless	1911 1929	☑	1
	Glass Molded Glass	Bottle/Jar		Base/Body Push-Up Base Turn Mold	Amber	1880s 1910s	☐	2
	Leather	Boot/Shoe Shoe		Fragment			☐	1
TA-01 20-30, Apz	Coal Ash	Coal					☐	1
	Earthenware	Brick		Fragment			☐	2
	Iron	Nail Unidentified Nail		Fragment			☐	1
TA-01 30-40, Apz	Coal	Coal					☐	6
	Coal Ash	Coal					☐	1
	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	1
TA-02 10-20, Apz	Glass	Flat Glass		Fragment	Colorless		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	3
TA-02 20-30, Apz	Coal	Coal					☐	1
	Shell	Bivalve		Fragment			☐	1
TA-03 0-10, Dev A	Coarse Earthenware Redware	Ceramic Sherd		Fragment	Red	1600 Present	☐	1
	Glass	Curved Glass		Fragment	Colorless		☐	1
TA-03 10-20, Apz	Glass	Flat Glass		Fragment	Colorless		☐	3
TA-03 20-30, Apz	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Red	1600 Present	☐	1
	Refined Earthenware Yellowware	Ceramic Sherd		Fragment	Yellow	1830 1900	☐	1
TA-03 30-40, Disturbed B1	Glass	Flat Glass		Fragment	Colorless		☐	1
TB-01 10-20, Apz	Coal	Coal					☐	2
	Earthenware	Brick		Fragment	Red		☐	1

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TB-01 10-20, Apz	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	1
	Shell	Bivalve Quahog		Fragment			☐	1
TB-01 20-30, Apz	Coal	Coal					☐	1
	Sedimentary Argillite	Projectile Point Untyped Stemmed	5.64x2.1x0.64	Mostly Complete	Brown		☐	1
	Shell	Bivalve Oyster		Fragment			☐	1
TB-02 0-10, Developing A	Glass Molded Glass	Curved Glass		Fragment	Colorless		☐	4
	Slag	Slag					☐	2
TB-02 10-20, Apz	Coal	Coal					☐	3
	Iron	Nail Unidentified Nail		Fragment			☐	2
TB-02 20-30, Apz	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Brown, Red	1600 Present	☐	1
	Glass	Bottle/Jar		Body	Olive		☐	1
TB-02 30-40, Disturbed B1	Refined Earthenware Pearlware	Ceramic Sherd		Fragment		1779 1830	☐	1
TB-03 10-20, Dev A	Coal	Coal					☐	1
TB-03 20-30, Apz	Coal	Coal					☐	1
TC-01 0-10, Developing A	Coal	Coal					☐	1
	Glass	Curved Glass		Fragment	Olive		☐	1
	Glass Molded Glass	Curved Glass		Fragment	Colorless		☐	3
	Unidentified Metal	Unidentified		Fragment	Gray, Green		☐	1
TC-01 10-20, Remnant Apz	Coal	Coal					☐	5
	Earthenware	Brick		Fragment	Red		☐	6
TC-01 20-30, Disturbed B1	Earthenware	Brick		Fragment	Red		☐	1
TC-02 0-10, Developing A	Coal	Coal					☐	1
	Iron	Unidentified		Fragment			☐	2
TC-02 10-20, Apz	Coal	Coal					☐	2
	Glass	Flat Glass		Fragment	Aqua		☐	1
TC-03 0-10, Dev A	Iron	Nail Unidentified Nail		Fragment			☐	2
TC-03 10-20, Apz	Coal	Coal					☐	1
	Porcelain	Ceramic Sherd		Fragment	White	1600 present	☐	1
TC-03 20-30, Apz	Coal	Coal					☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TC-03 20-30, Apz	Earthenware	Brick		Fragment	Red		☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	1
	Glass Molded Glass	Curved Glass		Fragment	Amber		☐	1
TC-04 10-20, Apz	Glass	Curved Glass		Fragment	Amber		☐	1
TC-04 20-30, Apz	Coal Ash	Coal					☐	1
TC-05 0-10, Developing A	Earthenware	Brick		Fragment	Red		☐	3
	Glass	Curved Glass		Fragment	Lt Blue		☐	1
	Refined Earthenware	Holloware		Base	White	1762 1850	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Body	White	1820 Present	☐	1
	Slag	Slag					☐	2
TC-05 10-20, Apz	Coal	Coal					☐	3
	Earthenware	Brick		Fragment			☐	2
	Iron	Nail Unidentified Nail		Fragment			☐	1
TC-05 20-30, Apz	Coal	Coal					☐	4
	Earthenware	Brick		Fragment	Red		☐	1
	Glass	Curved Glass		Fragment	Olive		☐	1
TC-06 10-20, Apz	Coal Ash	Coal					☐	2
	Copper	Unidentified		Complete	Gray, Green		☐	1
TC-06 20-30, Apz	Coarse Earthenware Slipware	Ceramic Sherd		Body	Yellow	1600 1800	☐	1
TC-07 10-20, Apz	Slag	Slag					☐	1
	Stoneware American Stoneware Albany Slip/Salt Glaze	Ceramic Sherd		Fragment	Gray, Tan	1800 1880	☐	1
TC-07 20-30, Apz	Coal	Coal					☐	1
	Slag	Slag					☐	3
TD-01 0-10, Developing A	Glass	Flat Glass		Fragment	Colorless		☐	1
	Refined Earthenware	Ceramic Sherd		Fragment		1762 1850	☐	2
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
	Refined Earthenware Whiteware Transfer Print	Ceramic Sherd		Base	Blue, White	1820 Present	☐	1
TD-01 10-20, Apz	Coal	Coal					☐	1
	Copper	Tack		Fragment			☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TD-01 10-20, Apz	Earthenware	Brick		Fragment	Red		☐	1
	Refined Earthenware Pearlware	Ceramic Sherd		Rim	White	1779 1830	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Base	White	1820 Present	☐	1
	Refined Earthenware Whiteware Flowing Colors	Ceramic Sherd		Body	Black, White	1840 1920	☐	1
	Shell	Bivalve Oyster		Fragment			☐	1
	Stoneware American Stoneware Albany Slip/Salt Glaze	Ceramic Sherd		Body	Brown, Gray	1800 1880	☐	1
TD-01 20-30, Apz	Coal	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	2
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	2
	Shell	Bivalve		Fragment			☐	2
TD-02 0-10, Developing A	Coal	Coal					☐	1
	Glass	Curved Glass		Fragment	Colorless		☐	1
	Refined Earthenware	Ceramic Sherd		Fragment	White	1762 1850	☐	1
TD-02 10-20, Apz	Coal	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
	Glass Molded Glass	Curved Glass		Fragment	Aqua		☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Fragment	White	1762 1820	☐	2
	Shell	Bivalve Oyster		Fragment	White		☐	4
TD-02 20-30, Apz	Glass	Flat Glass		Fragment	Aqua		☐	2
	Shell	Bivalve		Fragment			☐	1
TD-02 30-40, Apz	Earthenware	Brick		Fragment	Red		☐	1
	Glass	Curved Glass		Fragment	Colorless		☐	1
	Shell	Bivalve Quahog		Fragment			☐	2
TD-03 10-20, Dev A/Apz	Glass	Flat Glass		Fragment	Colorless		☐	1
TD-03 20-30, Apz	Coal	Coal					☐	2
	Shell	Bivalve Quahog		Fragment			☐	1
	Stoneware American Stoneware Albany Slip/Salt Glaze	Ceramic Sherd		Body	Brown, Gray	1800 1880	☐	1
TD-03 30-40, Apz	Ball Clay	Smoking Pipe		Stem 7/64ths	White		☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TD-03 40-50, B1	Metamorphic Unid. Metamorphic	Biface	5.88x3.15x1.63	Fragment Cortex	Tan		☐	1
TD-04 0-10, Developing A	Coal	Coal					☐	2
	Coarse Earthenware Redware Lead Glaze	Holloware		Rim/Body	Brown, Red	1600 Present	☐	5
	Glass	Curved Glass		Fragment	Olive		☐	1
	Shell	Bivalve Oyster		Fragment			☐	1
TD-04 10-20, Apz	Coal	Coal					☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	1
TD-05 0-10, Developing A	Coal	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	1
	Iron	Unidentified		Fragment			☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Fragment	White	1762 1820	☐	1
	Slag	Slag					☐	2
TD-05 10-20, Apz	Coal	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	1
TD-05 20-30, B1	Sedimentary Jasper	Chipping Debris Flake	1-3cm	Complete	Tan		☐	1
TD-05 30-40, B1	Sedimentary Jasper	Chipping Debris Flake	0-1cm	Complete	Tan		☐	1
TD-07 10-20, Developing A	Slag	Slag					☐	2
TE-01 0-10, Developing A	Coal	Coal					☐	2
	Slag	Slag					☐	3
TE-01 10-20, Developing A	Coal	Coal					☐	3
	Glass	Flat Glass		Fragment	Colorless		☐	1
	Glass Molded Glass	Curved Glass		Fragment	Aqua		☐	2
	Refined Earthenware Whiteware Transfer Print	Ceramic Sherd		Rim	Blue, White	1820 Present	☐	1
	Slag	Slag					☐	6
TE-01 20-30, Fill/Slopewash	Coal	Coal					☐	8
	Earthenware	Brick		Fragment			☐	3
	Glass	Bottle/Jar		Fragment	Olive		☐	2
	Iron	Nail Unidentified Nail		Fragment			☐	1
TE-01 30-40, Fill/Slopewash	Coal	Coal					☐	4

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TE-01 30-40, Fill/Slopewash	Iron	Unidentified		Fragment			☐	1
	Refined Earthenware Creamware	Ceramic Sherd		Fragment	White	1762 1820	☐	1
TE-01 40-50, Apz	Copper	Unidentified		Fragment	Gray, Green		☐	1
	Sedimentary Chert	Chipping Debris Flake	1-3cm	Complete	Gray, Tan		☐	1
	Slag	Slag					☐	4
TE-01 50-60, Apz	Ball Clay	Smoking Pipe		Stem 7/64ths	White		☐	1
	Slag	Slag					☐	1
TE-02 0-10, Developing A	Iron	Unidentified		Fragment			☐	2
TE-02 10-20, Apz	Coal	Coal					☐	3
	Glass	Flat Glass		Fragment	Colorless		☐	1
	Glass	Bottle/Jar		Body	Aqua		☐	1
	Glass	Bottle/Jar		Base/Body	Olive		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	2
TE-02 20-30, Apz	Coal	Coal					☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	1
TE-02 30-40, Apz/Disturbed B1	Iron	Unidentified		Fragment			☐	1
TE-02 40-50, Disturbed B1	Coal	Coal					☐	2
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Brown, Red	1600 Present	☐	1
TE-03 0-10, Developing A	Coal	Coal					☐	3
	Coarse Earthenware Redware	Ceramic Sherd		Fragment	Red	1600 Present	☐	3
	Glass	Flat Glass		Fragment	Aqua		☐	1
	Shell	Bivalve Quahog		Fragment			☐	1
TE-03 10-20, Apz	Coal	Coal					☐	2
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Brown, Red	1600 Present	☐	2
	Earthenware	Brick		Fragment	Red		☐	2
	Glass	Curved Glass		Fragment	Aqua		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	2
	Metamorphic Slate	Building Stone		Fragment			☐	2
	Shell	Bivalve Oyster		Fragment			☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TE-03 20-30, Apz	Coal	Coal					☐	1
	Earthenware	Brick		Fragment	Red		☐	1
	Glass	Flat Glass		Fragment	Clear		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	1
TE-04 0-10, Developing A	Coal	Coal					☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
TE-04 10-20, Apz	Coal	Coal					☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
TE-04 20-30, Apz	Ball Clay	Smoking Pipe		Stem Fragment	White		☐	1
	Coal	Coal					☐	1
	Iron	Miscellaneous Hardware		Fragment			☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	5
	Refined Earthenware Creamware	Ceramic Sherd		Base	White	1762 1820	☐	1
	Shell	Bivalve Oyster		Fragment			☐	1
TE-04 30-40, Apz	Coal	Coal					☐	6
	Earthenware	Brick		Fragment	Red		☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	2
	Shell	Bivalve Quahog		Fragment			☐	1
	Stoneware English Brown	Ceramic Sherd		Base/Body	Brown, Tan	1690 1810	☐	1
TE-05 0-10, Developing A	Coal	Coal		Burned			☐	3
	Coal Ash	Coal		Burned			☐	3
	Coarse Earthenware	Ceramic Sherd		Fragment Burned	Brown, Red		☐	3
	Glass	Currency/Token		Fragment Melted	Colorless		☐	2
	Metal	Unidentified		Fragment Burned			☐	12
	Refined Earthenware	Ceramic Sherd		Fragment Burned	White	1762 1850	☐	3
	Slag	Slag		Burned			☐	3
TE-05 10-20, Apz	Coal	Coal		Burned			☐	1
	Metal	Unidentified		Fragment Burned			☐	8

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TE-05 10-20, Apz	Refined Earthenware	Ceramic Sherd		Fragment Burned	White	1762 1850	☐	2
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
	Slag	Slag		Burned			☐	1
TE-05 20-30, Apz	Metal	Unidentified		Fragment			☐	4
	Slag	Slag					☐	1
TE-06 0-10, Developing A	Coal	Coal					☐	1
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Brown, Red	1600 Present	☐	1
	Glass	Curved Glass		Fragment	Aqua		☐	2
	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	1
TE-06 10-20, Apz	Coal	Coal					☐	2
	Glass	Flat Glass		Fragment	Clear		☐	1
TF-01 0-5, Demolition Fill	Earthenware	Brick		Fragment	Red		☐	6
	Iron	Nail Unidentified Nail		Fragment			☐	7
	Plaster/Mortar	Plaster/Mortar		Fragment			☐	8
TF-02 0-10, Developing A	Coal	Coal					☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	2
	Refined Earthenware Creamware	Ceramic Sherd		Fragment	White	1762 1820	☐	1
TF-02 10-20, Developing A	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Brown, Red	1600 Present	☐	1
	Earthenware	Brick		Fragment	Red		☐	1
	Glass Molded Glass	Curved Glass		Fragment	Clear		☐	1
	Glass Molded Glass	Curved Glass		Fragment	Aqua		☐	1
	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	1
	Sedimentary Flint	Gun Flint English Gunflint		Fragment	Gray		☐	1
TF-02 20-30, Apz	Coal	Coal					☐	2
	Earthenware	Brick		Fragment	Red		☐	2
	Glass	Flat Glass		Fragment	Aqua		☐	3
	Iron	Nail Unidentified Nail		Fragment			☐	2
	Porcelain Hard Paste	Ceramic Sherd		Fragment	White	1700 Present	☐	1
	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TF-02 20-30, Apz	Refined Earthenware Pearlware Shell-Edged Rim	Flatware		Rim	Blue, White	1780 1830	☐	1
TF-02 30-40, Apz	Coal	Coal					☐	4
	Coarse Earthenware Redware	Ceramic Sherd		Fragment	Red	1600 Present	☐	1
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Red	1600 Present	☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	1
	Refined Earthenware Pearlware	Ceramic Sherd		Fragment	White	1779 1830	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
TF-02 50-60, B1	Sedimentary Chert	Chipping Debris Flake	0-1cm	Complete	Gray		☐	1
	Sedimentary Jasper	Chipping Debris Flake	1-3cm	Complete Heat Altered	Red		☐	1
TF-03 0-10, Developing A	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
TF-03 20-30, Apz	Ball Clay	Smoking Pipe		Bowl Fragment	White		☐	1
	Coal	Coal					☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	2
TF-04 10-20, Apz	Coal	Coal					☐	1
	Glass	Bottle/Jar		Body	Olive		☐	1
	Slag	Slag					☐	1
TF-04 20-30, Apz	Coal	Coal					☐	5
	Earthenware	Brick		Fragment	Red		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	1
	Refined Earthenware Red-Bodied Refined	Ceramic Sherd		Body	Red		☐	1
TF-04 30-40, Apz	Coal	Coal					☐	8
	Coal Ash	Coal					☐	1
	Glass	Curved Glass		Fragment	Colorless		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	1
TF-04 40-50, Disturbed/Apz	Coarse Earthenware Redware	Ceramic Sherd		Fragment	Red	1600 Present	☐	1
TF-05 10-20, Apz	Coal	Coal					☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TF-05 20-30, Apz	Refined Earthenware Tin Enamel	Ceramic Sherd		Fragment	Beige, White	1600 1800	☐	1
	Slag	Slag					☐	1
TF-05 30-40, Apz	Coal	Coal					☐	1
TF-06 10-20, Apz	Earthenware	Brick		Fragment	Red		☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	2
TF-06 20-30, Apz	Earthenware	Brick		Fragment	Red		☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
TG-01 0-10, Developing A	Glass	Lightbulb		Fragment	Colorless, Frosted		☐	2
	Glass	Miscellaneous Electrical		Fragment	Colorless, Gray		☐	1
TG-01 10-20, Apz	Ball Clay	Smoking Pipe Unmarked Pipe		Bowl	White		☐	1
	Coal Bituminous	Coal					☐	1
	Glass	Unidentified		Fragment	Colorless		☐	1
	Glass	Lightbulb		Base	Gray, Green, Purple		☐	3
	Glass	Flat Glass Window Glass		Fragment	Aqua, Colorless		☐	1
	Glass	Curved Glass		Body	Aqua, Clear		☐	1
	Glass	Lightbulb		Fragment	Colorless, Frosted		☐	11
TG-01 20-30, Apz	Calcined Bone	Mammal					☐	1
	Coal	Coal					☐	2
	Earthenware	Brick		Fragment	Red		☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	2
	Glass	Bottle/Jar		Body	Olive		☐	1
	Glass	Curved Glass		Fragment	Colorless		☐	1
	Iron	Nail Unidentified Nail		Fragment			☐	2
TG-01 30-40, Apz	Glass	Flat Glass		Fragment	Colorless		☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	2
TG-02 10-20, Apz	Earthenware	Brick		Fragment	Red		☐	1
	Glass	Flat Glass		Fragment	Aqua		☐	2
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
	Refined Earthenware Whiteware Transfer Print	Ceramic Sherd		Fragment	Dk Blue, White	1820 Present	☐	1
TG-02 20-30, Apz	Glass	Flat Glass		Fragment	Aqua		☐	1

Appendix B. Catalog of Cultural Materials, NJ-NY Expansion 2011, Route Variation 50 Workspace Phase Ib.

Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TG-02 20-30, Apz	Glass Molded Glass	Curved Glass		Fragment	Blue		☐	1
	Refined Earthenware Whiteware Flowing Colors	Ceramic Sherd		Fragment	Blue, White	1840 1920	☐	1
	Sedimentary Chert	Chipping Debris Flake	1-3cm	Complete Cortex	Brown, Dk Gray		☐	1
TG-02 30-40, Apz	Glass	Flat Glass		Fragment	Aqua		☐	1
TG-03 0-10, Apz	Coal Anthracite	Coal					☐	1
	Coal Bituminous	Coal					☐	1
	Ferrous	Miscellaneous Hardware		Fragment	Rust		☐	1
	Glass	Flat Glass Window Glass		Fragment	Aqua, Clear		☐	1
	Glass	Curved Glass		Fragment	Colorless		☐	1
	Porcelain Porcelaneous	Ceramic Sherd		Fragment	White	1840 Present	☐	1
TG-04 0-10, Dev A	Coal	Coal					☐	1
	Iron	Unidentified		Fragment			☐	1
TG-04 20-30, Apz	Coal	Coal					☐	1
	Iron	Unidentified		Fragment			☐	2
TG-04 30-40, Apz	Glass Molded Glass	Curved Glass		Fragment	Colorless		☐	1
TG-04 40-50, Apz	Coal	Coal					☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
TH-01 0-10, Developing A	Coal	Coal					☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	1
TH-01 10-20, Apz	Coal	Coal					☐	6
	Earthenware	Brick		Fragment	Red		☐	1
	Refined Earthenware Pearlware Transfer Print, Underglaze	Ceramic Sherd		Fragment	Blue, White	1795 1830	☐	1
TH-02 10-20, Apz	Coal	Coal					☐	4
	Coarse Earthenware Redware Lead Glaze	Ceramic Sherd		Fragment	Brown, Red	1600 Present	☐	1
	Earthenware	Brick		Fragment	Red		☐	2
	Glass	Flat Glass		Fragment	Aqua		☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	3
	Shell	Bivalve Oyster		Fragment			☐	1
TH-02 20-30, Apz	Coal	Coal					☐	1

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Provenience	Material	Object	Size	Attributes	Color(s)	Manufacture Date	Makers Mark	Count
Old Place Neck Site								
TH-02 20-30, Apz	Glass	Bottle/Jar		Body	Olive		☐	1
	Glass	Flat Glass		Fragment	Colorless		☐	2
	Refined Earthenware Creamware	Ceramic Sherd		Fragment	White	1762 1820	☐	1
	Refined Earthenware Whiteware	Ceramic Sherd		Fragment	White	1820 Present	☐	1
	Stoneware American Stoneware Albany Slip/Salt Glaze	Holloware		Body	Brown, Gray	1800 1880	☐	1
							Total:	**1733**

APPENDIX C

ARCHAEOLOGICAL SITE INVENTORY FORMS

NEW YORK STATE PREHISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION
(518) 237-8643

Bernadette Castro
Commissioner

For Office Use Only--Site Identifier

Project Identifier New Jersey-New York Expansion Date April 20, 2011

Your Name Ora Elquist Phone (401) 728-8780
Address 210 Lonsdale Avenue, Pawtucket, RI 02860

Organization (if any) Public Archaeology Laboratory, Inc. (PAL)

1. SITE IDENTIFIER(S) Old Place Neck Site.

2. COUNTY Richmond One of the following: CITY New York City (borough of Staten Island)

TOWNSHIP
INCORPORATED VILLAGE
UNINCORPORATED VILLAGE OR HAMLET

3. PRESENT OWNER Texas Eastern Transmission Corp.
Address 5400 Westheimer Court Houston, Texas 77056

4. SITE DESCRIPTION (check all appropriate categories):

Site

__Stray Find	___Cave/Rockshelter	___Workshop
__Pictograph	___Quarry	___Mound
__Burial	__ Shell Midden	___Village
__Surface Evidence	_x_Camp	_x_Material in plow zone
_x_Material below plow zone	___Buried evidence	___Intact Occupation floor
__Single component	___Evidence of features	___Stratified
	_x_Multicomponent	

Location

___Under cultivation	___Never cultivated	_x_Previously cultivated
___Pastureland	_x_Woodland	___Floodplain
__ Upland		___ Sustaining erosion

Soil Drainage: excellent ___ good _x_ fair ___ poor
Slope: flat _x_ gentle ___ moderate ___ steep
Distance to nearest water from site (approx.) Bridge Creek wetlands immediately north, and Old Place Creek ca. 600 ft to the south
Elevation: ca. 20 ft asl

5. SITE INVESTIGATION (append additional sheets, if necessary):
Surface--date(s) March 29, 2011
_x_Site map (Submit with form)
___Collection

Subsurface--date(s) March 29 through April 8, 2011
Testing: shovel _x_ coring ___ other_____ unit size 50 cm diameter
no. of units 64 (Submit plan of units with form)
Excavation: unit size 0.5x1m and 1x1m no. of units 4

Investigator PAL, Inc.

Manuscript or published report(s) (reference fully):

Elquist, Ora, Suzanne Cherau and Gregory R. Dubell
2011 *Phase IB Archaeological Identification Survey, Route Variation 50 Additional Workspace, Staten Island, Richmond County, New York. Texas Eastern Transmission, LP, New Jersey-New York Expansion Project, FERC Docket No. CP11-56-000.* PAL Report No. 2367.02B-3 submitted to Spectra Energy Transmission, LLC, Jersey City, New Jersey.

Present repository of materials

PAL, Inc. Permanent curatorial facility being determined in consultation with NYs OPRHP and LPC

6. COMPONENT(S) (cultural affiliation/dates):

Possible PaleoIndian (ca. 12, 500-10,000 B.P.) and Late Archaic (ca. 5000-2700 B.P.). A few finds of copper may indicate Contact Period, though these may reflect colonial period EuroAmerican occupation as well.

7. LIST OF MATERIAL REMAINS (be specific as possible in identifying object and material):

Chipping debris of chert (N=18), Normanskill chert (N=4), and jasper (N=5 – includes one possible channel flake)
Two chert utilized flakes
Three bifaces (unidentified metamorphic material, untyped chert, and Normanskill chert)
Stemmed argillite projectile point (consistent with Bare island-type)

If historic materials are evident, check here and fill out historic site form _x_

8. MAP REFERENCES

USGS 7.5 Minute Series Quad. Name Elizabeth, NJ

UTM Coordinates 568979.85 E; 4498019.62 N

9. Photography

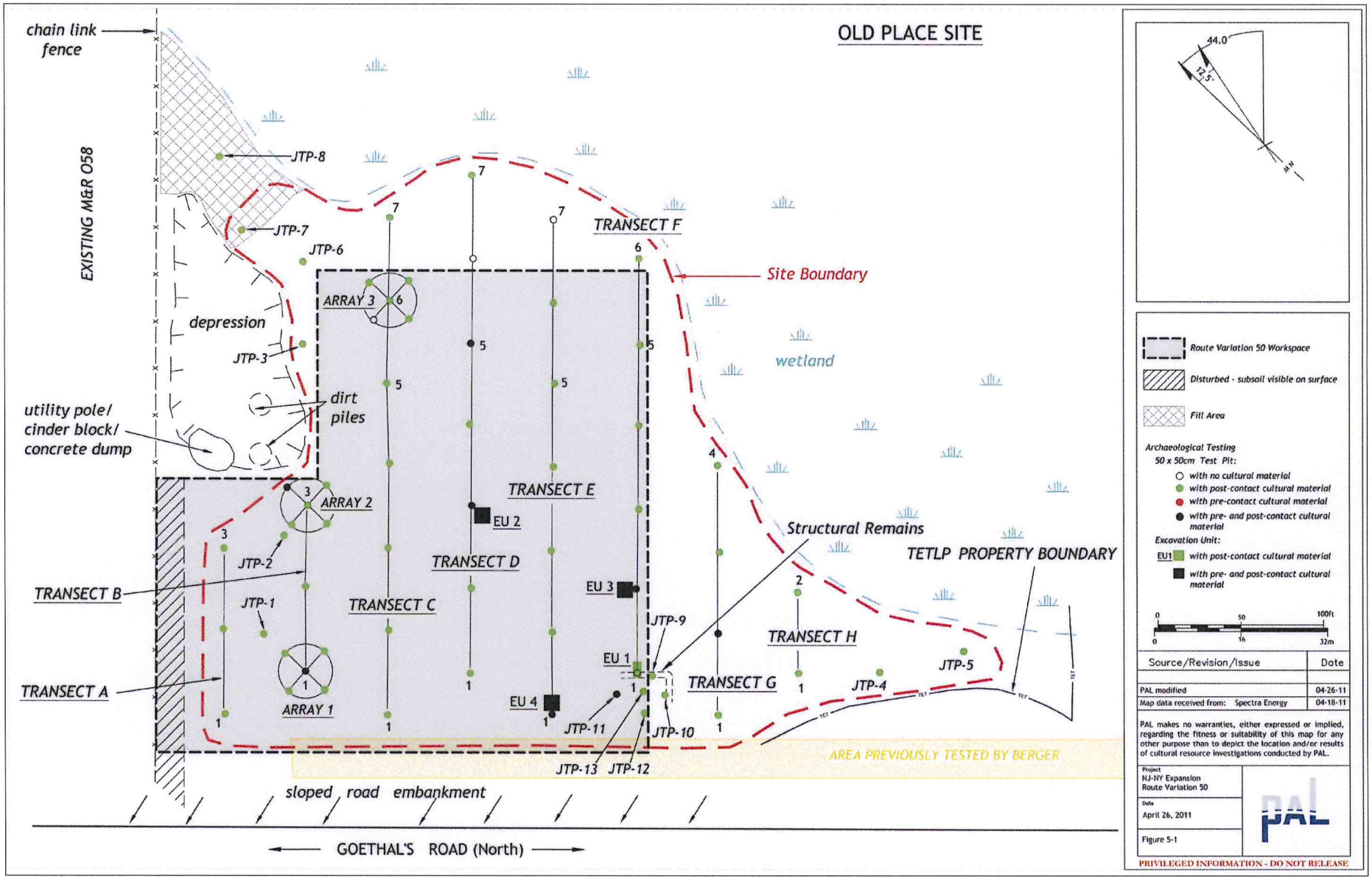

Figure 1. Location of archaeological testing along the Route Variation 50 workspace.

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION
(518) 237-8643

Bernadette Castro
Commissioner

For Office Use Only--Site Identifier

Project Identifier New Jersey-New York Expansion

Your Name Ora Elquist Date April 20, 2011

Address 210 Lonsdale Ave., Pawtucket, RI 02860 Phone (401) 728-8780

Organization (if any) Public Archaeology Laboratory, Inc. (PAL)

1. SITE IDENTIFIER(S) Old Place Neck Site

2. COUNTY Richmond One of the following: CITY New York City (borough of Staten Island

TOWNSHIP
INCORPORATED VILLAGE
UNINCORPORATED VILLAGE OR HAMLET

3. PRESENT OWNER Texas Eastern Transmission Corp.
Address 5400 Westheimer Court Houston, Texas 77056

4. SITE DESCRIPTION (check all appropriate categories): razed structural remains and historic artifact scatter

Superstructure: complete___ partial___ collapsed ___ not evident
Foundation: above _x__ below __x_ (ground level) not evident
___ Structural subdivisions apparent __Only surface traces visible
__ Buried traces detected
List construction materials (be as specific as possible): hand-made brick, machine cut, wire and unidentified nails, painted plaster/mortar

Grounds

___Under cultivation ___Sustaining erosion _x_Woodland ___Upland
___Never cultivated _x_Previously cultivated ___Floodplain ___Pastureland
Soil Drainage: excellent ___ good _x_ fair ___ poor
Distance to nearest water from structure (approx.) Bridge Creek wetlands immediately north, and Old Place Creek ca. 600 ft to the south

Elevation: ca. 20 ft asl

5. Site Investigation (append additional sheets, if necessary):
Surface -- date (s) March 29, 2011 Site map (submit with form*)
Collection
Subsurface -- date(s)
Testing: shovel _x_ coring ___ other ___ unit size 50 cm. diameter

no. units ___64_____ (Submit plan of units with form*)
Excavation: unit size 0.5x1m and 1x1m no. of units 4
(Submit plan of units with form*)
* Submission should be 8 ½" by 11", if feasible
Investigator PAL, Inc.

Manuscript or published report (s) (reference fully):

Elquist, Ora, Suzanne Cherau and Gregory R. Dubell
2011 *Phase IB Archaeological Identification Survey, Route Variation 50 Additional Workspace, Staten Island, Richmond County, New York. Texas Eastern Transmission, LP, New Jersey-New York Expansion Project, FERC Docket No. CP11-56-000.* PAL Report No. 2367.02B-3 submitted to Spectra Energy Transmission, LLC, Jersey City, New Jersey.

Present repository of materials PAL, Inc. Permanent curatorial facility being determined in consultation with NYs OPRHP and LPC

6. Site inventory:
a. Date constructed or occupation period Site area occupied during 18th and 19th centuries. Structural remains likely date to early to mid-19th century. Finds of copper may indicate Contact/colonial period occupation as well

b. Previous owners, if known: Property previously owned by J. Carpenter (1870s), and Thos. E. Greacen by 1917
c. Modifications, if known
(append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
a. Historic map references
1) Name *Map of Staten Island (Richmond County), New York* Date 1872 Source Dripps
Present location of original, if known
2) Name *Atlas of Staten Island, Richmond County, New York* Date 1874 Source Beers
Present location of original, if known
b. Representation in existing photography
1) Photo date _____ Where located
2) Photo date _____ Where located

c. Primary and secondary source of documentation (reference fully)

d. Persons with memory of site
1) Name_____ Address
2) Name _____ Address

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

Ceramics (pearlware, earthenwares, whiteware, creamware, porcelain, lead-glazed redware, slip-trailed redware, Albany slip stoneware, ironstone, Rockingham-Bennington yelloware, Astbury-type refined earthenware, English brown Fulham stoneware, tin-enameled refined earthenware)
Glass (late 19th/early 20th century medicine, condiment, and water/soda bottles, other bottle/jar glass, window glass, canning jar, drinking glass frags, lightbulb glass)
Metal (machine-cut, unidentified and wire nails, unidentified fragments, misc. hardware, copper wire ring, sheet copper frags, machine parts)
Other (kaolin and ball clay smoking pipe frags, gunflints, painted plaster, hand-made brick, modern debris)

If prehistoric materials are evident, check here and fill out prehistoric site form. x

9. Map References: Map or maps showing exact location and extent of site must accompany this form and be identified by source and date. Keep this submission to 8½" x 11", if possible.

USGS 71/2 Minute Series Quad. Name Elizabeth, NJ
For Office Use Only--UTM Coordinates

10. Photography (optional for environmental impact survey): Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

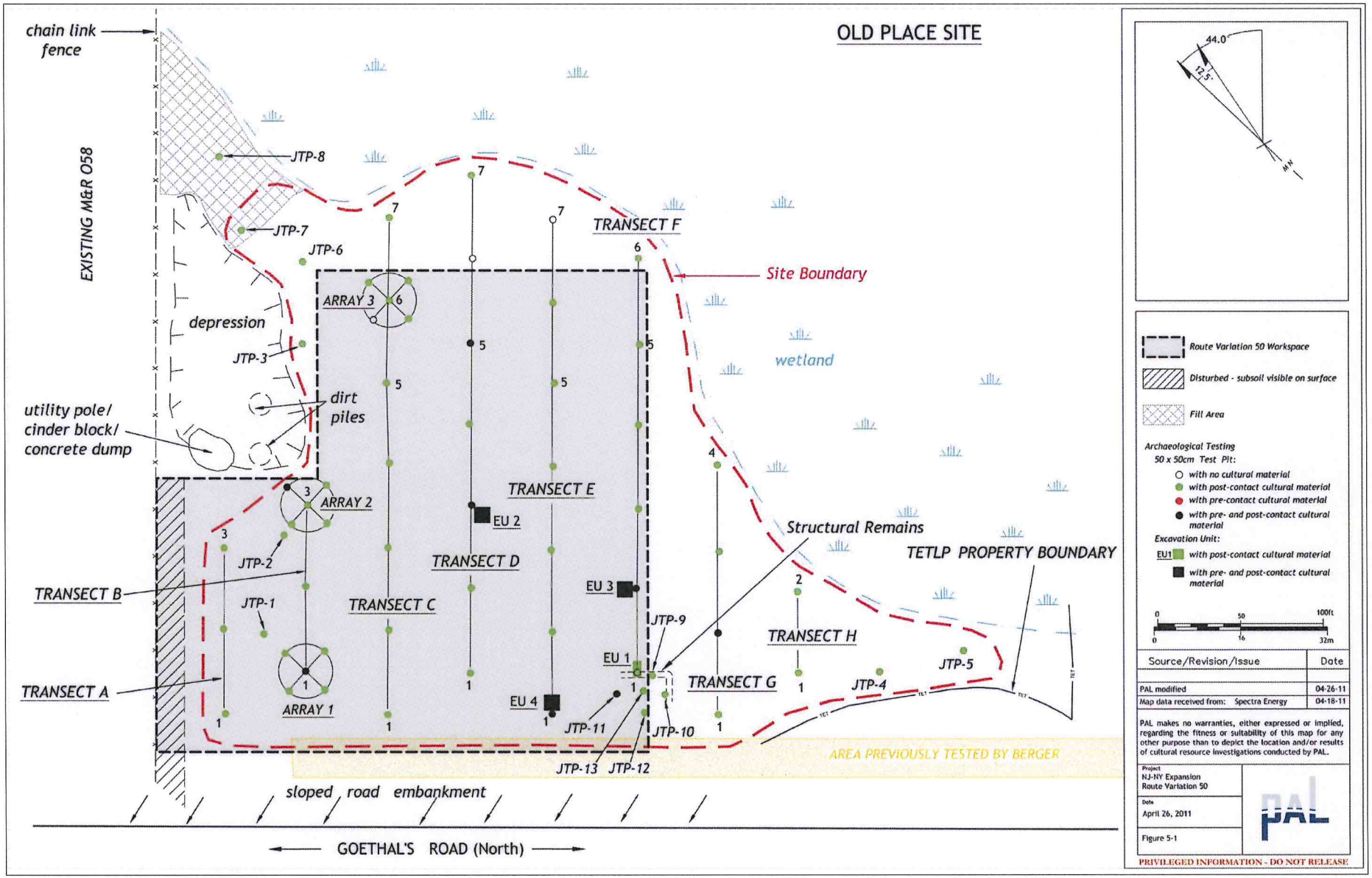

Figure 1. Location of archaeological testing along the Route Variation 50 workspace.

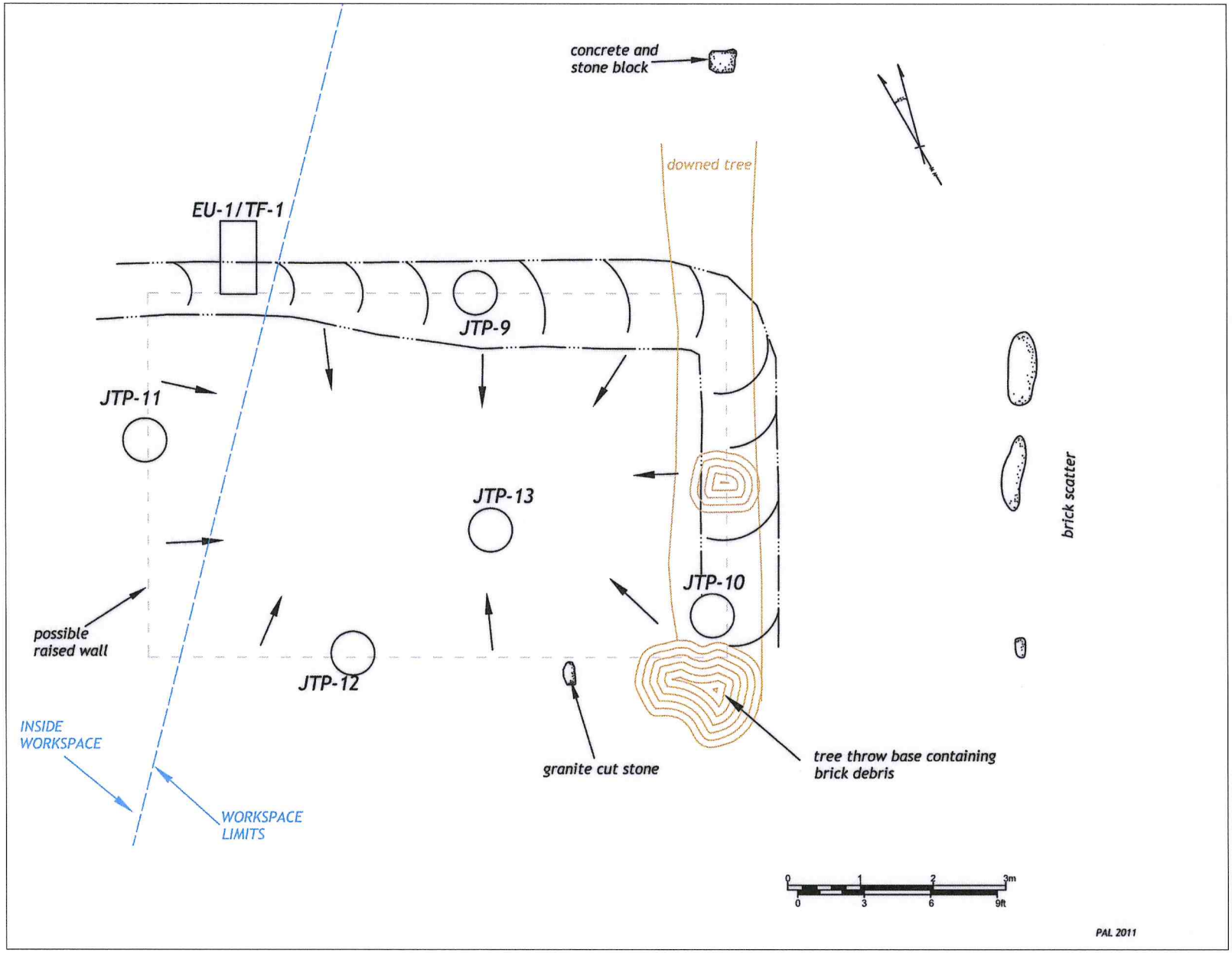

Figure 2. Plan drawing of the brick feature/possible structural remains located at the southeast corner of the Route Variation 50 workspace.

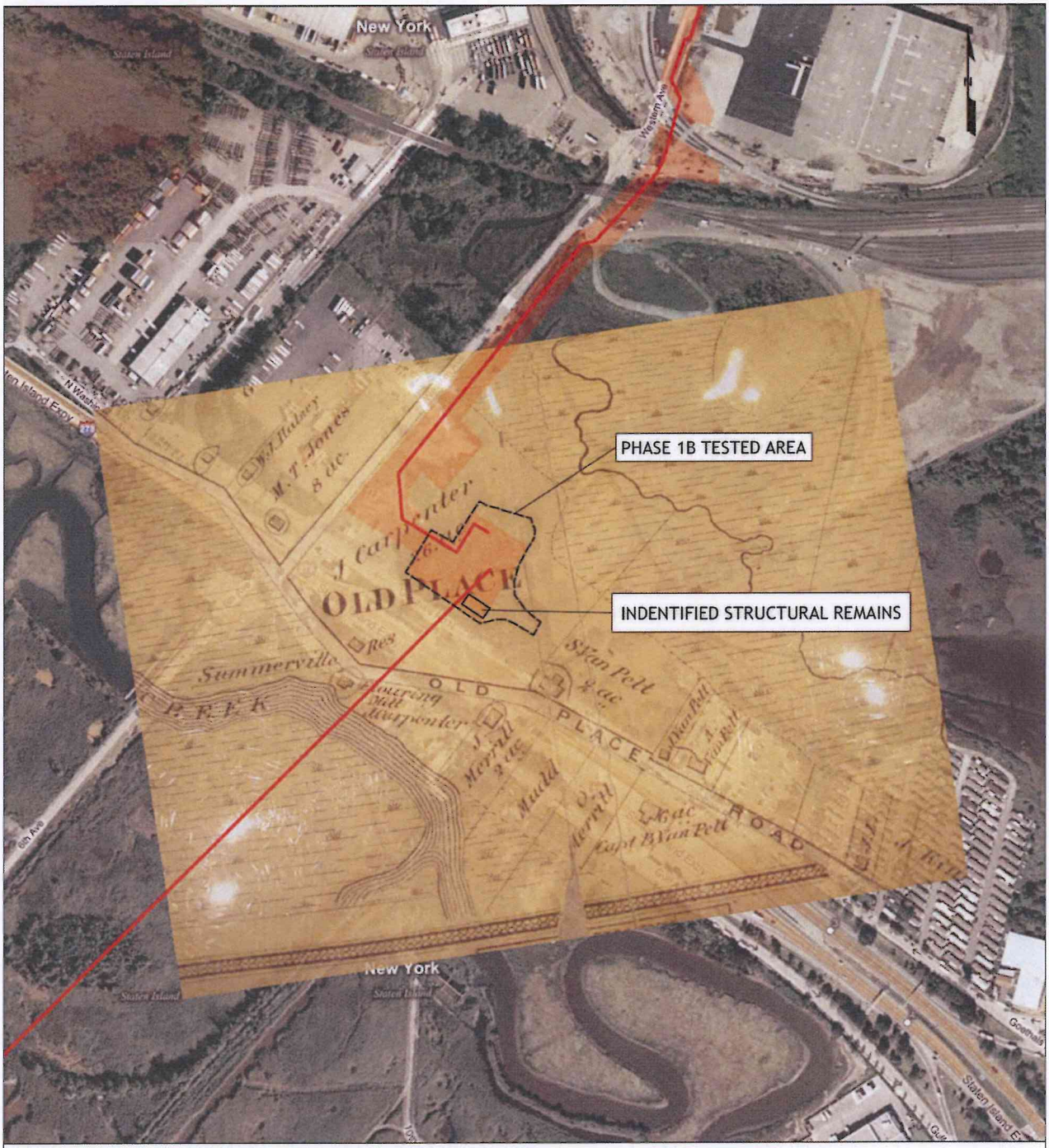

Figure 3. Overlay of the 1874 Beers map onto a recent aerial photograph showing the location of former roads and structures relative to the Project area.

Appendix C. GIS Form

This is the form that the LPC uses to synthesize data gathered from archaeological reviews for GIS. It would be appreciated if archaeological contractors would complete the sections noted and submit the form with their reports so that we may keep the database as up to date as possible.

UNIFORM SITE FILE

LPC STAFF TO ENTER:

1. UNIQUE # IDENTIFIER_____
2. ADDRESS_____
3. BOROUGH_____
4. BLOCK_____LOT_____MULTIPLE ADDRESSES?
_____
_____
5. PROJECT ID#, CEQR# OR ER#_____
6. PROJECT NAME_____

HIGHEST LEVEL OF REVIEW PERFORMED (CHECK)

- ☐ 1st
- ☐ 2nd (DOCUMENTARY STUDY)
- ☐ 3rd (FIELD TESTING SCOPE REVIEWED)
- ☐ 4th (FIELD TESTING REPORT REVIEWED)
- ☐ 5th (MITIGATION SCOPE REVIEWED)
- ☐ 6th (MITIGATION REPORT)

FINDINGS (REASONS FOR NO FURTHER WORK) (CHECK)

- ☐ NO CONCERNS
- ☐ PRESUMED RESOURCE IDENTIFICATION INCORRECT
- ☐ PRESUMED RESOURCE IDENTIFICATION CORRECT, DISTURBED
- ☐ INCOMPLETE INFORMATION PROVIDED
- ☐ PROJECT DESIGN REASONS - HOWEVER, ARCHAEOLOGICAL CONCERNS ARE PRESENT
- ☐ AWAITING NEXT LEVEL OF WORK TO BE COMPLETED

ARCHAEOLOGICAL CONTRACTOR ENCOURAGED TO ENTER:

TIME PERIOD(S) STUDIED

- ☐ NATIVE AMERICAN POTENTIAL (UNSPECIFIED)
- ☒ PALEOINDIAN
- ☒ ARCHAIC

- ☐ WOODLAND
- ?☒ CONTACT
- ☒ COLONIAL (17/18 C) TO 1820
- ☐ 19TH C (UNSPECIFIED)
- ☒ 1820-1865
- ☒ 1865-1915
- ☐ 1915-1952

SITE TYPE

- ☒ DOMESTIC STRUCTURE
- ☒ TRANSIENT CAMPSITE/ HUNTING/GATHERING/FARMING
- ☐ PRIVY/WELL/CISTERN FEATURE
- ☐ PUBLIC INSTITUTION
- ☐ CEMETERY/BURIAL GROUND
- ☐ RELIGIOUS SITE OR INSTITUTION
- ☐ SCHOOLS
- ☐ UTILITIES
- ☐ TRANSPORTATION
- ☐ MILITARY
- ☐ LANDFILL

R

ESEARCH QUESTIONS RELATE TO:

P

ertinent information recovered? If yes, please check.

- ☐ IMMIGRATION
- ☐ ETHNICITY
- ☐ SOCIO-ECONOMIC STATUS
- ☐ PROFESSIONS/WORK LIFE
- ☐ HOUSEHOLD COMPOSITION
- ☐ ECOLOGY
- ☐ HEALTH AND MEDICINE
- ☐ LEISURE
- ☐ FOOD
- ☐ OTHER_____

RELATED BIBLIOGRAPHY? ELQUIST ET. AL. 2011, PHASE IB IDENTIFICATION SURVEY, ROUTE VARIATION 50 WORKSPACE, STATEN ISLAND, RICHMOND CO., NEW YORK

COMMENTS? _____

COMPILED BY: ORA ELQUIST (PAL, INC)
DATE: APRIL 22, 2011

APPENDIX D

SHOVEL TEST RECORD SUMMARY TABLE

Shovel Test Summary Table

Unit	Depth (cm)	Soil Description	Artifact Summary
A01-090	0-13	Dk Brn SaSi	---
A01-090	13-22	Blk Med SiSa	---
A01-090	22-36	Dk Brn SiSa	1-colorless curved glass, 1-colorless flat glass, 2-coal, 1-pearlware annular
A01-090	36-70	StrBrn Med SiSa	---
A01-090	70-100	YRd SiSa	---
A01-180	0-10	Blk Med SiSa	1-Coal, 1-aqua curved glass, 1-colorless flat glass, 1-bivalve oyster shell
A01-180	10-36	Dk Brn Med SiSa	1-white pipe bowl Frg, 5-coal, 3-brick, 1-coal ash, 1-aqua flat glass, 1-colorless flat glass, 1-iron nail, 1-copper button
A01-180	36-59	StrBrn Med SiSa	---
A01-180	59-90	YRd SiSa	---
A01-270	0-14	Dk Brn Med SiSa	3-coal, 2-brick, 1-aqua flat glass, 1-whiteware
A01-270	14-33	Dk Brn Med SiSa	2-coal, 4-brick, 2-bivalve oyster shell, 1-bivalve quahog shell, 2-unid. bivalve shell
A01-270	33-59	StrBrn Med SiSa	---
A01-270	59-88	YRd SiSa	---
A01-360	0-11	Blk Med SiSa	1-charcoal, 1-coal, 1-coal ash, 2-plastic
A01-360	11-23	Dk Brn Med SiSa	6-coal, 5-brick, 1-aqua flat glass
A01-360	23-64	StrBrn Med SiSa	---
A02-090	0-8	Blk Fine SiSa	---
A02-090	8-45	Dk Brn Fine SiSa	6-coal, 1-brick, 1-bivalve oyster shell, 1-slag, 1-olive bottle/jar, 1-unidentified iron, 2-beige/blue ceramic sherd, 1-smoking pipe frg, 3-creamware, 1-pearlware, 2-whiteware
A02-090	45-71	DkYwBrn Med SiSa	---
A02-180	0-11	Blk Fine SiSa	1-aqua flat glass, 1-whiteware, 1-transfer print whiteware
A02-180	11-31	Dk Brn Fine SiSa	4-coal, 1-frosted flat glass
A02-180	31-48	Dk Brn Fine SiSa/Dk YBrn Med SiSa	1-coal, 1-brick
A02-180	48-65	Dk Ybrn Med SiSa	---
A02-270	0-15	Blk Fine SiSa	---

Unit	Depth (cm)	Soil Description	Artifact Summary
A02-270	15-48	Dk Brn Fine SiSa	3-coal, 4-brick, 1-colorless flat glass, 1-iron nail, 1-iron frag., 1-olive bottle/jar, 1-colorless curved glass, 3-whiteware, 2-iron nail frag, 2-unid. bivalve shell
A02-270	48-76	DkYBrn Med SiSa	---
A02-360	0-12	Blk Fine SiSa	1-coal
A02-360	12-48	Dk Brn Fine SiSa	4-whiteware, 1-colorless flat glass, 3-coal ash, 1-brick, 1-bivalve shell, 1-smoking pipe frg, 1-mammal calcined bone, 7-coal, 1-redware, 1-redware trailed slipware, 1-copper, 1-gray/white chipping debris shatter, 1-dk gry utilized flake, 1-tan chipping debris flake
A02-360	48-92	Dk Ybrn Med SiSa	1- dk gry chipping debris flake
A03-090	0-12	Blk Fine SiSa	1-coal, 1-white ceramic sherd whiteware
A03-090	12-37	Dk Brn Fine SiSa	4-coal
A03-090	37-62	Dk Ybrn Med SiSa	---
A03-180	0-9	Blk Fine SiSa	9- coal, 1-brick, 3-bivalve oyster shell
A03-180	9-35	Dk Brn Fine SiSa	14-coal, 1-colorless flat glass, 1-iron nail frag, 2-brick, 1-unidentifid ferrous, 1-colorless curved glass, 3- whiteware
A03-180	35-90	Dk Ybrn Med SiSa	---
A03-270	0-18	Blk Fine SiSa	---
A03-270	18-40	Dk Brn Fine SiSa Rts	---
A03-360	0-14	Blk Fine SiSa	6-coal, 1-coal ash, 1-brown/red ceramic sherd stoneware american albany slip
A03-360	14-29	Dk Brn Fine SiSa	1-coal, 1-aqua flat glass, 1-slag
A03-360	29-63	Dk Ybrn Med SiSa	---
EU01	0-16	Ybrn Fine Sa/VDk Gry Fine-Med SiSa	10-brick, 8-red/rust machine cut nail, 2-white unidentified other mineral, 5-plaster/mortar
EU01	16-20	V Dk Gry Fine-Med SiSa	11- brick, 1-machine cut nail frag, 1-unidentified ferrous, 3-olive curved glass, 6-plaster/mortar, 1-painted plaster/mortar, 1-blue/white ceramic sherd pearlware, 1-white bivalve oyster
EU01	21-31	Dk Brn SiFMdSa	3-brick, 2-aqua/clear flat glass, 1-porcelain, 2-whiteware, 10-coal bituminous, 12-brick, 8-rust nail unidentified, 3-creamware, 1-ironstone, 2-pearlware, 1-rockingham-bennington
EU01	31-60	StrBrn Fine Med Sa	---

Unit	Depth (cm)	Soil Description	Artifact Summary
EU02	0-12	Blk Fine SiSa	---
EU02	12-36	Dk Brn Med SiSa	34-coal, 2-coal ash, 1-redware, 2-brown/dark red ceramic sherd, 6-red earthenware, 6-rust ferrous, 1-colorless flat glass, 8-aqua/clear flat glass, 4-olive curved glass, 1-gray shingle, 1-purple ceramic sherd, 6-creamware, 1- ironstone, 2-pearlware, 1-pearlware molded rim, 2-ginger/red holloware, 2-whiteware, 1-oyster shell1-charcoal, 1-clinker/coke,1-brick, 1-burned brick, 2-ferrous, 3-aqua/clear curved glass, 2-aqua/clear flat glass, 1-colorless curved glass, 2-smoking pipe, 1-green/white ceramic sherd, 1-black/gray ceramic sherd, 1-brown/tan holloware, 1-dk gray chipping debris flake, 1-Lt gray gun flint, 1-slag
EU02	36-60	StrBrn Med SiSa	1-biface normanskill, 4-normanskill chipping debris flake, 1-tan chipping debris flake jasper
EU03	0-10	Blk Fine SiSa	3-red redware, 1-brick, 1-rust ferrous
EU03	10-38	Dk Brn SiFSa	7-coal, 4-brick, 1-ferrous, 1-olive curved glass, 3-aqua clear flat glass, 1-gold/white ceramic sherd, 4-pearlware, 2-ginger/red ceramic sherd, 1-gray biface, 1-brown/dk gray chipping debris flake, 1-brown/red/white flatware, 1-ferrous, 1-colorless curved glass, 6-aqua/clear flat glass, 1-amber/olive flat glass, 3-whiteware, 1-blue/white whiteware shell-edged rim, 1-brown/gray holloware
EU03	38-50	DK YBrn	1-dk gray chert chipping debris, 1-gray chert chipping debris , 7-dk gray chert chipping debris
EU04	0-17	Blk Fine SiSa	6-coal, 1-olive flat glass, 1-frosted flat glass, 6-colorless flat glass, 11-aqua bottle/jar, 4-amber bottle/jar, 1-aqua bottle/jar, 22-lavender bottle/jar, 2-iron nail, 9-unidentified iron, 1-iron wheel frag, 3-white whiteware, 18-slag, 1-styrofoam

Unit	Depth (cm)	Soil Description	Artifact Summary
EU04	17-49	Dk Brn Fine-Med SiSa	2-white smoking pipe, 7-ceramic sherd, 1-dk gray chert chipping debris, 2-colorless curved glass, 1-brown/white pearlware hand printed, 1-green/white pearlware shell-edged rim, 1-blue/white whiteware annular, 1-brown/gray stoneware albany slip/salt glaze, 8-coal, 1-coal ash, 1-red redware, 1-whiteware rim, 2-blue/white whiteware, 1-bivalve shell, 2-mammal bone, 1-brass hinge, 1-brown/red redware lead glaze, 9-brick, 2-olive bottle/jar, 2-red curved glass, 1, olive flat glass, 16-aqua flat glass, 5-colorless bottle/jar, 1-aqua bottle/jar, 12-amber medicine bottle, 3-iron, 14-miscellaneous iron, 20-nail, 1-unidentified iron, 2-unidentified leather, 1-green/white plaster/mortar, 1-insulator, 2-white pearlware, 1-blue/white pearlware transfer print, 7-white whiteware, 1-white holloware whiteware, 1-rubber, 13-slag, 1-brown/green synthetic
EU04	47-74	StrBrn Fine SiSa	1-tan chert chipping debris
JTP01	0-13	VDk Gry Fine SiSa	1-coal, 1-colorless flat glass, 23-aqua curved glass, 4-lavender drinking glass tumbler base/body, 10-lavender drinking glass tumbler fragment solarized
JTP01	13-33	Dk Brn Fine SiSa	29-aqua curved glass, 6-white pearlware, 3-bivalve oyster shell, 1-coal, 1-redware lead glaze, 1-olive bottle/jar, 1-lavender curved glass, 1-iron nail
JTP01	33-59	Dk Brn Fine SiSa/StrBrn Fine-Med SiSa	11-aqua curved glass, 2-lavender curved glass
JTP01	59-71	Dk Brn Fine SiSa/StrBrn Fine-Med SiSa/Str Brn Fine SiSa	4-aqua curved glass
JTP02	0-12	VDrk Gry Fine SiSa	---
JTP02	12-42	Dk Brn Fine SiSa/StrBrn Fine-Med SiSa	1-white smoking pipe, 4-coal, 1-coal ash, 3-aqua flat glass, 1-white ceramic sherd, 1-bivalve shell, 3-pearlware transfer print
JTP02	42-64	StrBrn Fine-Med SiSa	---
JTP03	0-6	Blk SiFSa	4-coal
JTP03	6-28	Dk Brn Fine SiSa	1-red redware lead glaze, 1-brick, 1-aqua flat glass
JTP03	28-100	StrBrn Fine-Med SiSa	---
JTP04	0-12	VDk Brn Med SiSa	---
JTP04	12-35	Dk Brn Med SiSa	1-coal, 1-lavender drinking glass, 4-bivalve oyster shell, 3-colorless flat glass, 1-red holloware refined astbury type, 1-white whiteware

Unit	Depth (cm)	Soil Description	Artifact Summary
JTP04	35-72	StrBrn Med SiSa	1-charcoal
JTP04	72-109	StrBrn Coarse-Med Sa	---
JTP05	0-12	VDrk Brn Med SiSa	---
JTP05	12-28	Dk Brn Med SiSa	1-coal, 1-flat glass
JTP05	28-65	StrBrn Med SiSa	---
JTP05	65-76	StrBrn Med-Coarse Sa	---
JTP06	0-20	VDrk Brn Med SiSa	---
JTP06	20-45	Dk Brn Med SiSa	1-coal ash, 1-blue/white holloware, 3-brick
JTP06	45-60	StrBrn Med SiSa	---
JTP07	0-15	VDk GBrn/Dk Ybrn Fine-MedSiSa	---
JTP07	15-36	Blk Fine-Med SiSa	1-colorless glass, 1-beige/pink whiteware transfer print, 1-black/red redware black glaze, 1-colorless bottle/jar
JTP07	36-56	Dk Brn Fine-Med SiSa	4-coal, 1-redware black glaze, 3-aqua flat glass, 2-aqua curved glass, 1-creamware
JTP07	56-102	Dk Ybrn Med SiSa	---
JTP08	0-18	Dk GryBrn SiSa Concrete/Rubble	---
JTP09	0-27	Dk Ybrn/VDk GBrn Med SiSa	19-brick, 15-plaster/mortar, 4-painted plaster/mortar
JTP09	27-39	Dk Ybrn/Blk Fine SiSa	1-coal, 7-brick, 1-amber/olive curved glass, 6-plaster/mortar
JTP09	39-60	VDk GBrn Fine-Med SiSa	3-coal, 14-brick, 1-aqua/clear flat glass, 1-olive curved glass, 16-plaster/mortar, 2-white pearlware, 1-ferrous
JTP09	60-84	StrBrn Med SaSi	---
JTP10	0-25	Brn Fine SiSa Brick & Mortar	7-brick, 1-machine cut nail, 1-aqua/clear flat glass, 4-clear/lavender bottle/jar, 12-painted plaster/mortar, 1-ferrous, 11-aqua/clear curved glass, 3-plaster/mortar, 1-pearlware, 1-pearlware annular
JTP10	25-52	VDk GBrn Fine-Med SiSa	2-coal, 1-brick, 1-ferrous, 3-aqua/clear curved glass, 4-olive curved glass, 11-plaster/mortar, 12-brick, 4-painted plaster/mortar, 1-aqua/clear flat glass, 1-whiteware base, 1-whiteware body
JTP10	52-67	StrBrn Med	---

Unit	Depth (cm)	Soil Description	Artifact Summary
		SaSi	
JTP11	0-13	Dk YBrn SiMdSa	6-brick, 6-plaster/mortar
JTP11	13-42	VDk GBrn Fine-Med SiSa	11-brick, 1-smoking pipe, 7-plaster/mortar, 1-steel nail, 2-coal, 2-white creamware, 1-iridescent/purple/white pearlware hand painted, 4-white bivalve quahog shell
JTP11	42-70	StrBrn Med SaSi	1-brown/gray chert utilized flake
JTP12	0-25	Brn Fine SiSa Brick & Mortar	11-brick, 1-aqua/clear flat glass, 15-plaster/mortar, 1-nail, 1-coal, 1-white pearlware, 2-whiteware
JTP12	25-45	VDk Brn Fine-Med SiSa	---
JTP12	45-70	StrBrn Med SaSi	---
JTP13	0-17	Brn Fine SiSa Brick & Mortar	6-brick, 1-colorless flat glass, 11-brown/green synthetic, 8-brick, 2-rust ferrous, 7-plaster/mortar, 6-brown/green synthetic
JTP13	17-40	VDk GBrn Fine-Med SiSa	1-brick, 1-colorless bottle/jar, 1-olive curved glass, 1-white creamware, 1-gray/tan stoneware albany slip/salt glaze
JTP13	40-71	StrBrn Med SaSi	---
TA-01	0-15	VDk Gry Fine SiSa	---
TA-01	15-38	Dk Brn Fine SiSa	2-coal ash, 2-brick, 1-iron nail, 6-coal, 1-pearlware
TA-01	38-72	StrBrn Fine-Med SiSa	---
TA-01	72-82	StrBrn Fine SiSa	---
TA-02	0-10	VDk Gry Fine SiSa	---
TA-02	10-32	Dk Brn Fine SiSa	1-colorless flat glass, 3-iron nail, 1-coal, 1-bivalve shell
TA-02	32-54	StrBrn Fine-Med SiSa	---
TA-02	54-65	StrBrn Fine SiSa	---
TA-03	0-11	VDk Gry Fine SiSa	1-red redware, 1-colorless curved glass
TA-03	11-30	Dk Brn Fine SiSa	3-colorless flat glass, 1-red redware lead glaze, 1-yellow yelloware
TA-03	30-63	GryBrn Fine Si Sa	1-colorless flat glass
TB-01	0-12	VDk Brn SiSa	---
TB-01	12-38	Dk Ybrn SiSa	3-coal, 1-brick, 1-white pearlware, 1-bivalve quahog shell, 1-argillite PPRT, 1-bivalve oyster shell
TB-01	38-75	StrBrn SiSa	---
TB-02	0-11	VDk Brn SiSa	4-colorless curved glass, 2-slag

Unit	Depth (cm)	Soil Description	Artifact Summary
TB-02	11-29	Dk Ybrn SiSa	3-coal, 2-iron nail, 1-brown/red redware lead glaze, 1-olive bottle/jar, 1-pearlware
TB-02	29-58	StrBrn SiSa	---
TB-02	58-70	StrBrn Fine SiSa	---
TB-03	0-22	VDk Brn SiSa	1-coal
TB-03	22-42	Dk Ybrn SiSa	1-coal
TB-03	42-58	StrBrn SiSa	---
TC-01	0-15	VDk Brn SiSa	1-coal, 1-olive curved glass, 3-colorless curved glass, 1-gray/green unidentified metal
TC-01	15-17	Dk Ybrn SiSa	5-coal, 6-brick
TC-01	17-30	Dk Ybrn SiSa/StrBrn SiSa	1-brick
TC-01	30-75	StrBrn SiSa	---
TC-02	0-13	VDk Brn SiSa	1-coal, 2-iron unidentified
TC-02	13-35	Dk Ybrn SiSa	2-coal, 1-aqua flat glass
TC-02	35-50	StrBrn SiSa	---
TC-02	50-64	StrBrn Fine SiSa	---
TC-03	0-10	VDk Brn SiSa	2-iron nail
TC-03	10-44	Dk Ybrn SiSa	2-coal, 1-porcelain, 1-brick, 1-aqua flat glass, 1-amber curved glass
TC-03	44-59	StrBrn SiSa	---
TC-04	0-13	VDk Brn SiSa	---
TC-04	13-50	Dk Ybrn SiSa	1-amber curved glass, 1-coal ash
TC-04	50-60	StrBrn SiSa	---
TC-05	0-13	VDk Brn SiSa	3-brick, 1-Lt blue curved glass, 1-white holloware, 1-white whiteware, 2-slag
TC-05	13-29	Dk Ybrn SiSa	6-coal, 4-brick, 1-iron nail, 1-curved glass
TC-05	29-75	StrBrn SiSa	---
TC-06	0-14	VDk Brn SiSa	---
TC-06	14-30	Dk Ybrn SiSa	2-coal ash, 1-gray/green copper, 1-yellowware
TC-06	30 - 61	StrBrn SiSa	---
TC-07	0-14	VDk Brn SiSa	---
TC-07	14-32	Dk Ybrn SiSa	1-coal, 4-slag, 1-gray/tan stoneware albany slip/salt glaze
TC-07	32-57	StrBrn SiSa	---
TD-01	0-13	Blk SiSa	1-colorless flat glass, 2-ceramic sherd, 1-white whiteware, 1-blue/white whiteware transfer print
TD-01	13-40	Brn SiSa	2-coal, 1-copper button, 3-brick, 1-pearlware, 3-whiteware, 1-black/white whiteware, 1-bivalve oyster shell, 1-brown/gray stoneware albany slip/salt glaze, 2-shell
TD-01	40-97	StrBrn SiSa	---
TD-02	0 - 10	Blk SiSa	1-coal, 1-colorless curved glass, 1-white ceramic sherd

Unit	Depth (cm)	Soil Description	Artifact Summary
TD-02	10-33	Brn SiSa	1- coal, 1-brick, 1-flat glass, 1-aqua curved glass, 2-white creamware, 2-aqua flat glass, 3-bivalve shell, 1-brick, 1-colorless curved glass,
TD-02	33-74	StrBrn SiSa	---
TD-02	74-93	StrBrn Fine SiSa	---
TD-03	0-11	Blk SiSa	---
TD-03	11-38	Brn SiSa	1-colorless flat glass, 2-coal, 1-bivalve quahog shell, 1-brown/gray stoneware albany slip/salt glaze, 1-white smoking pipe stem
TD-03	38-52	StrBrn SiSa	1-tan metamorphic unid. Biface
TD-04	0 - 10	Blk SiSa	2-coal, 5-brown/red redware lead glaze, 1-olive curved glass, 1-bivalve oyster shell
TD-04	10-36	Brn SiSa	1-coal, 1-iron nail frag.
TD-04	36-61	StrBrn SiSa	---
TD-05	0 - 10	Blk SiSa	1-coal, 1-brick, 1-iron unidentified, 1-white creamware, 2-slag
TD-05	10-21	Brn SiSa	1-coal, 1-brick
TD-05	21-65	StrBrn SiSa	2-tan jasper chipping debris flake
TD-06	0-13	Blk SiSa	---
TD-06	13-45	Brn Fine SaSi	---
TD-06	45-52	StrBrn SiSa Rts	---
TD-07	0-18	Blk SiSa	---
TD-07	18-28	Brn FSiSa	2-slag
TD-07	28-41	StrBrn SiSa	---
TE-01	0-17	Blk Fine-Med SiSa	5-coal, 9-slag, 1-colorless flat glass, 2-aqua curved glass, 1-blue/white whiteware transfer print
TE-01	17-43	DkBrn Fine-Med SiSa	8-coal, 3-brick, 2-olive bottle/jar, 1-iron nail, 4-coal, 1-iron unidentified, 1-white creamware
TE-01	43-60	DkRBrn Fine-Med SiSa/StrBrn Fine-Med Sa	1-copper unidentified, 5-slag, 1-white smoking pipe
TE-01	60 - 88	StrBrn Fine-Med Sa	---
TE-02	0-12	Blk Fine-Med SiSa	2-iron unidentified
TE-02	12-33	DkBrn Fine-Med SiSa	3-coal, 1-olive bottle/jar, 1-aqua bottle/jar, 1-colorless flat glass, 2-iron nail, 1-coal, 1-iron nail frag.
TE-02	33-62	StrBrn Fine-Med Sa/DkRBrn Fine-Med SiSa	1-iron unidentified, 2-coal, 1-brown/red redware lead glaze
TE-03	0-6	Blk Fine-Med SiSa	3-coal, 3-red redware, 1-aqua flat glass, 1-bivalve quahog shell
TE-03	6-30	Dk Brn Fine-Med SiSa	3-coal, 2 brown/red redware lead glaze, 3-brick, 1-aqua curved glass, 3-iron nail, 2-metamorphic slate, 1-bivalve oyster shell, 1-clear flat glass

Unit	Depth (cm)	Soil Description	Artifact Summary
TE-03	30-70	StrBrn Fine-Med Sa	---
TE-03	70-86	Yrd Med-Coarse SiSa	---
TE-04	0 - 10	Blk Fine-Med SiSa	1-coal, 1-colorless flat glass
TE-04	10-45	Dk Brn Fine-Med SiSa	8-coal, 2-colorless flat glass, 1-white smoking pipe stem frag, 1-iron miscellaneous, 7-iron nail, 1-creamware, 1-bivalve oyster shell, 1-brick, 1-aqua flat glass, 1-bivalve quahog shell, 1-brown/tan stoneware english brown
TE-04	45-93	StrBrn Fine-Med Sa	---
TE-05	0-12	Blk Fine-Med SiSa	3-coal, 3-coal ash, 3-brown/red ceramic sherd, 2-colorless currency/token, 12-unidentified metal, 3-white ceramic sherd, 3-slag
TE-05	12-28	DkBrn Fine-Med SiSa	1-coal, 12-unidentified metal, 2-white ceramic sherd, 1-white whiteware, 2-slag
TE-05	28-57	StrBrn Fine-Med Sa	---
TE-05	57-116	Yrd Med-Coarse SiSa	---
TE-06	0-12	Blk Fine-Med SiSa	1-coal, 1-brown/red redware lead glaze, 2-aqua curved glass, 1-white pearlware
TE-06	12-28	DkBrn Fine-Med SiSa	2-coal, 1-clear flat glass
TE-06	28-75	StrBrn Fine-Med Sa	---
TE-06	75-100	Yrd Med-Coarse SiSa	---
TE-07	0-14	Blk Fine-Med SiSa	---
TE-07	14-90	Ybrn Fine SiSa	---
TF-01	0 - 5	Blk Fine-Med SiSa, Brick	6-brick, 7-iron nail, 8-plaster/mortar
TF-02	0-17	Blk Fine-Med SiSa	1-coal, 2-aqua flat glass, 1-white creamware
TF-02	17-43	DkBrn Fine-Med SiSa	6-coal, 1-redware, 1-redware lead glaze, 4-aqua flat glass, 3-iron nail, 3-pearlware, 1-whiteware, 1-redware lead glaze, 3-brick, 1-clear curved glass, 1-aqua curved glass, 1-english gun flint, 1-porcelain hard paste, 1-blue/white pearlware
TF-02	43-80	StrBrn Fine-Med Sa	1-gray chert chipping debris, 1-red jasper chipping debris
TF-03	0-16	Blk Fine-Med SiSa	1-whiteware
TF-03	16-34	DkBrn Fine-Med SiSa	1-white smoking pipe, 1-coal, 2-iron nail

Unit	Depth (cm)	Soil Description	Artifact Summary
TF-03	34-59	StrBrn Fine-Med Sa	---
TF-03	59-76	Yrd Med-Coarse SiSa	---
TF-04	0-12	Blk Fine-Med SiSa	---
TF-04	12-34	DkBrn Fine-Med SiSa	14-coal, 1-bottle/jar, 1-slag, 1-brick, 2-iron nail, 1-red red-bodied refined, 1-coal ash, 1-colorless curved glass, 1-red redware ceramic sherd
TF-04	34-96	StrBrn Fine-Med Sa	---
TF-05	0-17	Blk Fine-Med SiSa	---
TF-05	17-41	DkBrn Fine-Med SiSa	2-coal, 1-aqua flat glass, 2-beige/white tin enamel ceramic sherd,1-slag
TF-05	41-58	StrBrn Fine-Med Sa	---
TF-05	58-76	Yrd Med-Coarse SiSa	---
TF-06	0-15	Blk Fine-Med SiSa	
TF-06	15-33	DkBrn Fine-Med SiSa	2-brick, 3-whiteware
TF-06	33-65	StrBrn Fine-Med Sa	---
TG-01	0-13	Blk Med SiSa	2-colorless/frosted glass, 1-colorless/gray glass
TG-01	13-37	DkBrn Med SiSa	2-colorless flat glass, 2-whiteware, 1-white smoking pipe, 3-coal, 2-aqua/clear curved glass, 3-aqua/colorles flat glass, 3-gray/green/purple glass, 11-colorless/frosted glass,1-mammal bone, 1-brick, 1-olive bottle/jar, 2-iron nail
TG-01	37-64	StrBrn Med-Coarse SiSa	---
TG-02	0-11	Blk Med SiSa	---
TG-02	11-37	DkBrn Med SiSa	1-brick, 4-aqua flat glass, 1-whiteware, 1-dk blue/white whiteware transfer print, 1-blue curved glass, 1-blue/white whitware, 1-brown/dk gray chert chipping debris
TG-02	37-56	StrBrn Med-Coarse SaSi	---
TG-02	56-80	DkYBrn Med SiSa	---
TG-03	0 - 10	Blk Fine Si	1-coal anthracite, 1-coal bituminous, 1-rust ferrous, 1-colorless glass, 1-aqua flat glass, 1-white ceramic sherd, 1-coal, 1-iron
TG-03	10-28	DkYBrn Med SiSa, Rts	---
TG-04	0-13	Blk Fine Si	---

Unit	Depth (cm)	Soil Description	Artifact Summary
TG-04	13-46	DkYBrn Med SiSa	1-coal, 1-white whiteware, 1-coal, 2-iron unidentified, 1-colorless curved glass
TG-04	46-73	StrBrn Med-Coarse SiSa	---
TH-01	0 - 10	VDkBrn Med SiSa	1-coal, 1-colorless flat glass
TH-01	10-34	DkBrn Med SiSa	6-coal, 1-brick, 1-blue/white pearlware transfer print
TH-01	34-88	StrBrn Med SiSa	---
TH-02	0-10	VDkBrn Med SiSa	---
TH-02	10-30	DkBrn Med SiSa	5-coal, 1-brown/red redware lead glaze, 2-brick, 1-aqua flat glass, 4-white whiteware, 1-bivalve oyster shell, 1-olive bottle/jar, 2-colorless flat glass, 1-creamware, 1-brown/gray stoneware albany slip/salt glaze
TH-02	30-100	StrBrn Med SiSa	---