DRAFT
TECHNICAL REPORT

PHASE IB ARCHEOLOGICAL SURVEY
GOIS PIER 102 REHABILITATION PROJECT
GOVERNORS ISLAND NATIONAL MONUMENT

Governors Island, New York

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MANAGEMENT ABSTRACT

PAL has completed Phase IB archeological investigations within the Pier 102 Rehabilitation project area at the Governors Island National Monument (GOIS) in New York Harbor. The National Park Service (NPS) is planning the rehabilitation of Pier 102, located on the eastern side of the island, as part of a project that will include the construction of a 500 to 1000 square foot (sq ft) covered shelter and bulletin board for visitors. The general construction area was reported as the possible location of a previously recorded archeological site, the circa 1879 Post Traders Site ASMIS 00032. The goal of the Phase IB archeological investigations was to locate and identify potentially significant archeological resources that may be affected by the proposed project. The archeological investigations included cartographic research and machine-assisted excavation of three .75-x-5-meter trenches supplemented by hand excavation of four units within three of the trenches.

Based on results of the survey data, the earliest wharf or pier in this area was constructed sometime before 1813. The Post Traders building is first identified on the 1879 map of the island and appears to have been removed sometime between 1908 and 1934. The archeological investigations identified four wooden timbers oriented along north/south and east/west lines within the existing pier footprint. The timbers may represent interior cribbing associated with the construction and filling of the pier. Additional documentary and/or photographic sources may help to clarify the location(s) of buildings on the pier. The timbers identified in the project area represent what appears to be an intact construction level within the historic Pier 102 and represent potentially significant archeological deposits. These timbers and the fill soils below them could document the original construction of Pier 102 sometime in the early nineteenth century and/or any subsequent modifications to the structure.

The Phase IB survey identified archeological deposits at a minimum depth of 80 cmbs (32 inches). It is recommended that any ground disturbance or construction impacts within the project area be limited to a depth of no more than 2 feet (61 cmbs) in order to avoid the potentially significant archeological deposits. If avoidance is not prudent or feasible, additional archeological investigations at the Phase II level are recommended.

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CHAPTER ONE

INTRODUCTION

This report presents the results of the Phase IB archeological investigations within the Pier 102 Rehabilitation project area at the Governors Island National Monument (GOIS) located in New York Harbor (Figure 1-1). The island's land use history includes pre-contact Native American settlement, Dutch and English colonial occupation, and more than two centuries of use as a military fortification. The island served as a headquarters for the U.S. Army until 1966 and as a regional command center for the U.S. Coast Guard until 2003. After the Coast Guard's departure, the 22 acres comprising the National Monument were transferred to the Department of the Interior to be managed by the National Park Service (NPS), and the remaining 150 acres of the island were transferred to the Governors Island Preservation and Education Corporation (GIPEC), a joint corporation formed by the State and City of New York.

The 22-acre GOIS parcel managed by the NPS comprises a portion of the original island and the majority of its historic properties.

Project Description

The NPS is planning the rehabilitation of Pier 102, located on the eastern side of the island within the GOIS boundaries, as part of a project that will include the construction of a 500 to 1000 square foot (sq ft) covered shelter and bulletin board for visitors (Figure 1-2). The general construction area may be the location of a previously recorded archeological site. ASMIS 00032, an 1879 Post Traders site, was identified through cartographic research conducted as part of the Archeological Overview and Assessment (AOA) for GOIS (Wright and Binzen 2003).

Scope and Authority

The goal of the Phase IB archeological investigations was to locate and identify potentially significant archeological resources that may be affected by the proposed project. The archeological investigations included machine-assisted excavation supplemented by hand excavation within proposed belowground construction impact areas.

All archaeological work was completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, and with documentation standards set forth in *New York State Historic Preservation Office Archaeological Report Format Requirements* (April 2005).

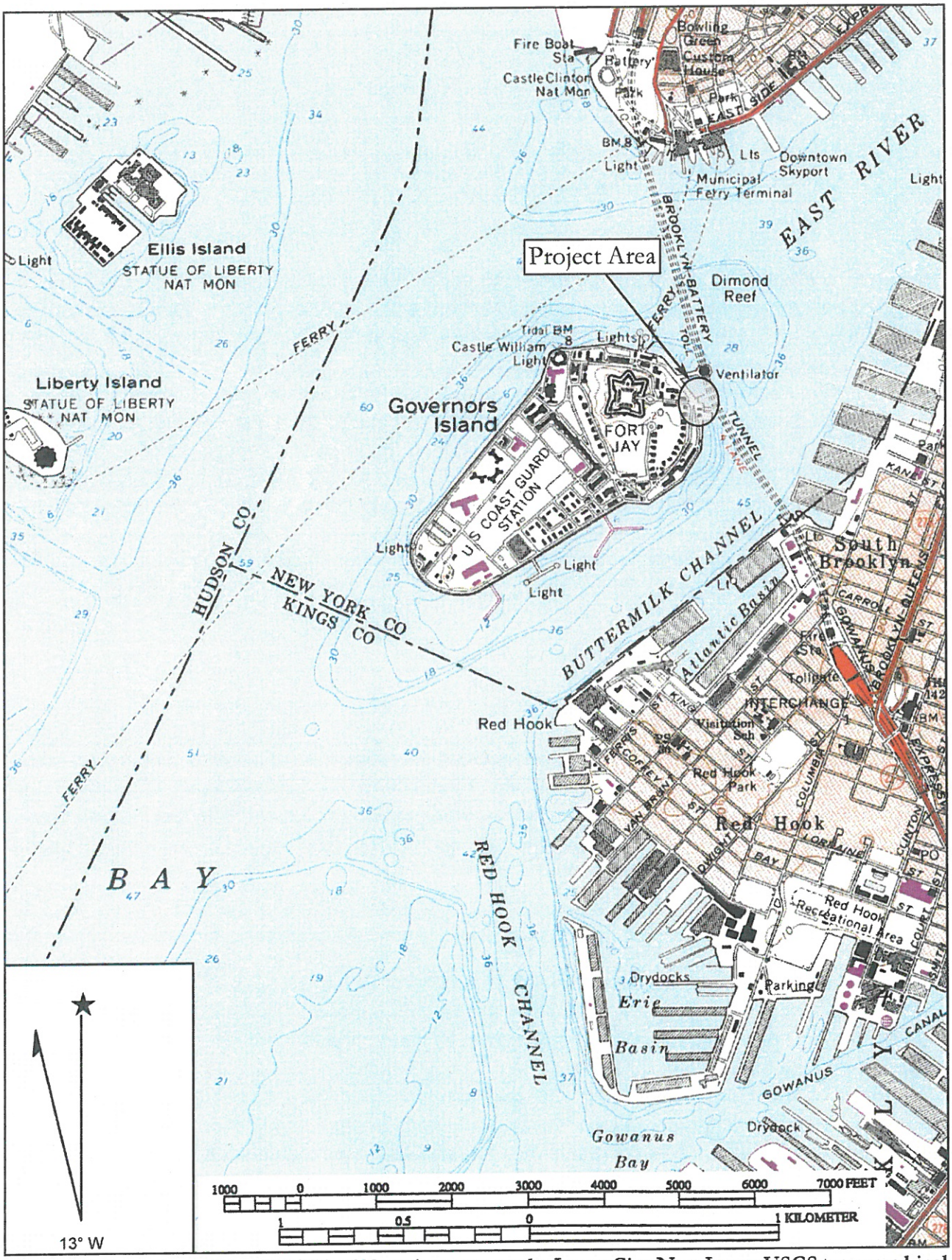

Figure 1-1. Location of the GOIS Pier 102 project area on the Jersey City, New Jersey USGS topographical quadrangle.

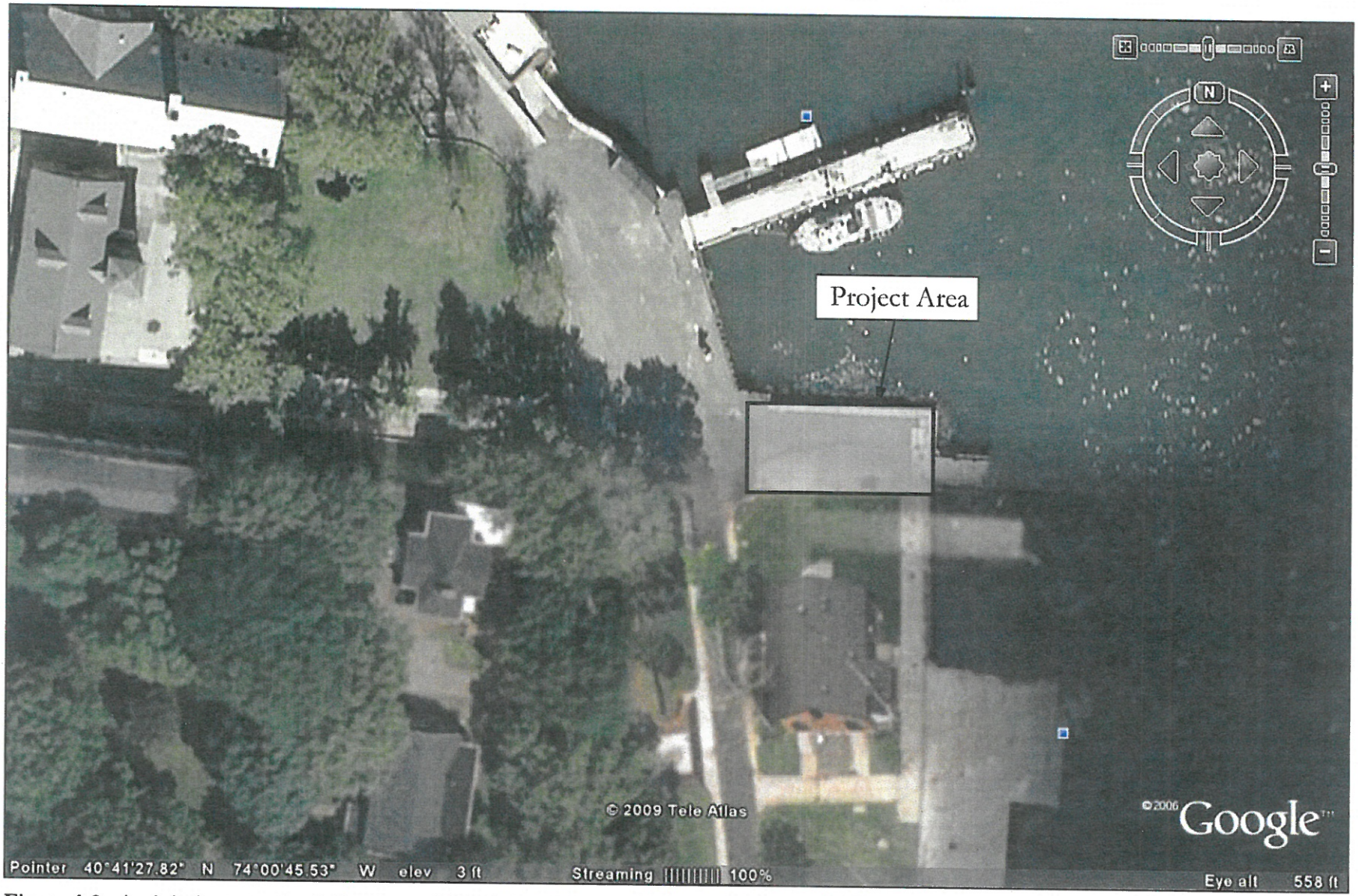

Figure 1-2. Aerial photograph of Governors Island showing location of GOIS Pier 102 project area.

Project Personnel

The Phase IB archeological fieldwork was completed in August 2009. PAL personnel involved in the project included Holly Herbster (project manager and principal investigator), and Mike Duffin and Mike Hubbard (assistant archaeologists). Erin Kuns (laboratory manager) directed the laboratory processing and analysis of the recovered cultural materials.

Disposition of Project Materials

Cataloged artifacts and associated project documentation will be temporarily curated at the PAL offices at 210 Lonsdale Avenue, Pawtucket, Rhode Island, according to Archeological Collections Management Project (ACMP) guidelines. The artifact collection and all supporting project documentation, prepared for curation according to NPS standards, will be transferred along with approved digital Automated National Cataloging System + (ANCS +) Catalog records, to the GOIS curator, or his/her designee, with the submission of the final report.

CHAPTER TWO

RESEARCH DESIGN AND FIELDWORK METHODS

The goal of the Phase IB archeological survey was to locate and identify any significant archeological properties that might be affected by project activities and, to the extent possible, evaluate the significance of those properties. To accomplish this objective, three research strategies were used:

- archival research, including a review of literature and maps;
- field investigations, consisting of a "walkover" visual reconnaissance survey and subsurface testing; and
- laboratory processing and analyses of recovered cultural materials.

Subsurface archeological testing was conducted within the proposed project impact areas. Cultural materials recovered during the survey were processed in the laboratory and analyzed to interpret the nature of past human activities they represent. The artifact analyses were correlated with other field survey data and the resulting information was interpreted within the environmental and historic contexts developed for the project area. The result was an assessment of potentially significant archeological resources and their eligibility for listing in the National Register of Historic Places (National Register).

Evaluating Significance and Historic Contexts

The different phases of archeological investigation (survey, evaluation, and data recovery) reflect preservation planning standards for the identification, evaluation, registration, and treatment of archeological resources (National Park Service [NPS] 1983). An essential component of this planning structure is the identification of archeological properties that are eligible for inclusion in the National Register, the official federal list of properties that have been studied and found worthy of preservation. Archeological properties can be a district, site, building, structure, or object, but are most often sites and districts (Little et al. 2000).

An archeological property may be pre-contact, post-contact, or contain components from both periods. Pre-contact (or what is often termed "prehistoric") archeology focuses on the remains of indigenous American societies as they existed before substantial contact with Europeans and resulting written records (Little et al. 2000). Post-contact (or what is often termed "historical") archeology is the archeology of sites and structures dating from time periods since significant contact between Native Americans and Europeans.

The NPS has established four criteria for listing significant properties in the National Register (36 CFR 60). The criteria are broadly defined to include the wide range of properties that are significant in American history, architecture, archeology, engineering, and culture. The quality of significance may be present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. The criteria allow for the listing of properties:

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

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

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.

Archeological properties can be determined eligible for listing in the National Register under all four criteria (Little et al. 2000; Parker and King 1998). Significance under any of these criteria is determined by the kind of data contained in the property, the relative importance of research topics that could be addressed by the data, whether these data are unique or redundant, and the current state of knowledge relating to the research topic(s). A defensible argument must establish that a property "has important legitimate associations and/or information value based upon existing knowledge and interpretations that have been made, evaluated, and accepted" (McManamon 1990).

The criteria are applied in relation to the historic contexts of the resources. A historic context is defined as follows:

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

Historic contexts provide an organizational framework that groups information about related historic properties based on a theme, geographic limits, and chronological periods. A historic context should identify gaps in data and knowledge to help determine what is significant information that may be obtained from the resource. Each historic context is related to the developmental history of an area, region, or theme (e.g., agriculture, transportation, waterpower), and identifies the significant patterns of which a particular resource may be an element. Only those contexts important to understanding and justifying the significance of the property must be discussed.

Archival Research

The development of a historic context and a predictive model of expected property types within the project area began with archival research, consisting of an examination of various documentary sources.

These sources include written and cartographic documents relating both to past and present environmental conditions as well as known cultural resources in the general project area.

Specific sources reviewed as part of the archival research for the GOIS Pier 102 Rehabilitation project area include:

Cultural Resource Management Reports

Numerous cultural resource management (CRM) investigations have been conducted on Governors Island as part of proposed undertakings by the U.S. Coast Guard and National Park Service, and the reports documenting these investigations were reviewed as part of the current project. NPS ASMIS forms and the GOIS *Archeological Overview and Assessment* (Wright and Binzen 2003) were carefully reviewed for information about the 1879 Post Traders Site (ASMIS 32) and several other potential archaeological sites which may be located within or near the project area.

Several other large-scale archeological investigations have been completed on Governors Island, including Phase I and II archeological surveys conducted by PAL over the majority of the original island (Garman and Herbster 1996, Herbster et al. 1997, Garman et al. 2000). These reports were reviewed for environmental and land use history data within GOIS.

The review also included reports prepared for other archeological investigations completed within particular sections of Governors Island. These include a Phase IA assessment of the Super 8 Motel Site (Louis Berger & Associates, Inc. [LBA] 1986); a Phase IB survey for an electrical utility trench (LBA 1987); and a program of emergency data recovery, testing, and monitoring, necessitated by the discovery of human burials during construction of the utility trench (LBA 1995).

Histories and Maps

Secondary histories and historical maps were examined to assess changes in land use, to locate any documented structures, and to trace the development of the eastern edge of the island and the general area surrounding the GOIS Pier 102 project area. Cartographic information was drawn primarily from the documentation produced for the park as part of earlier NPS projects (see above) as well as the *Historic Structures Inventory, Governors Island, New York* (Tompkins 1985). The *Historic Structures Inventory*, prepared as part of the Historic American Building Survey/Historic American Engineering Record (HABS/HAER) documentation of the island, contains a series of nineteenth and early twentieth century maps of the island that were particularly useful for reconstructing development along the shoreline and the configuration of piers in the project area vicinity.

Field Investigations

Walkover Survey

The fieldwork portion of the project began with a close visual examination of the project area. survey noted the condition of Pier 102 and extant modern utilities within the APE, and helped to refine the

subsurface testing strategies as proposed by the NPS. This activity was also useful for identifying visible utilities and other modern improvements within the project area.

Prior to the start of fieldwork, the New York City/Long Island One Call Center was contacted in order to locate any known utilities within the project area.

Although not expected, the possibility existed that unexploded ordnance (UXO) could be present within the excavation areas. The project team included a certified UXO technician from UXB who cleared all testing areas prior to excavation.

Subsurface Testing

Subsurface testing included the machine-assisted excavation of three .75-x-5-meter (m) trenches (MT-1, -2 and -3) and four hand-excavated testing units (EUs 1-4). The layout of the trenches was slightly altered in the field in consultation with William Griswold (COTR) to avoid an existing sewer utility. MT-3 was segmented into two units to the north and south of this modern utility. These two segments, designated as MT-3A (measuring .75-x-4 m) and MT-3B (measuring .75-x-1 m), together with MT-1 and MT-2 totaled the same excavation dimensions described in the Scope of Work.

Hand excavated soil was screened through ¼-inch hardware cloth, and all cultural materials recovered from primary contexts were bagged and tagged by level within each unit. The count and type of the recovered cultural material were noted. Soil profiles, including depths of soil horizons, colors, and textures, were recorded for each machine trench and EU on standard PAL forms. Photographs were taken to record plans and profiles for each of the units.

Following completion of all project mapping and photo documentation, each machine trench was backfilled with excavated soil and process gravel to provide a base for the asphalt patch.

Laboratory Processing and Analyses

Processing

All cultural materials recovered from the GOIS project area during the archeological investigations were organized by site and provenience and recorded and logged in on a daily basis. 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

The recovered cultural materials were cataloged using the ANCS+ and the 2003 version of the *ANCS+ Starter's Guide,* furnished by Northeast Region Archeology Program (NRAP). This program consists of a core of databases relationally linked to multiple material-type-specific databases that allow for in-depth analysis of cultural materials. Materials that display similar attributes such as material type, functional and typological classes, size range, color, etc. were grouped and cataloged by lots. These lots were stored in 2-millimeter thick polyethylene resealable bags with acid-free tags containing provenience

identification information. All artifacts have been labeled and properly housed according to NRAP standards.

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.

The analyses of the cultural materials recovered during the archeological investigations also included mapping the density and horizontal and vertical distribution of these materials within the project area.

Curation

Following laboratory processing and cataloging activities, all recovered cultural materials were placed in acid-free Hollinger boxes with box content lists and labels printed on acid-free paper. Cataloged artifacts and associated project documentation will be temporarily curated at the PAL offices at 210 Lonsdale Avenue, Pawtucket, Rhode Island, according to NRAP guidelines. The cataloged artifacts will be returned to the NPS with the submission of the final report.

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 New York Bay, with specific reference to Governor's Island. The overview focuses on local topography, bedrock and surficial geology, soils, and hydrology.

General Physical Description

Governors Island occupies approximately 172 acres in New York Harbor, one half-mile south of the southern tip of lower Manhattan (see Figure 1-1). The island is in the southern portion of New York County, near the junction of New York, Kings, and Hudson counties. New York Harbor is a natural deep-water harbor dominated by the Hudson and East River flows. Upper New York Bay lies to the north and west of the island and Buttermilk Channel to the southeast.

The original oval shape of Governors Island was greatly altered between 1902 and 1911 with the addition of artificial fill removed during the construction of the Lexington Avenue subway to the southwest extent of the island adding an additional seventy-nine acres. Centuries of use as a military facility have resulted in intense development of Governors Island. Approximately 160 buildings stand on the island; open space includes baseball and soccer fields, a parade ground that also functions as a nine–hole golf course, and Nolan Park, a grassy park surrounded by former officers' quarters.

Geology and Geomorphology

While only the relatively shallow Buttermilk Channel divides Governors Island from Brooklyn and the rest of Long Island, schist bedrock on the island appears to represent a continuation of the Manhattan formation (Schuberth 1968:82). The surficial deposits on the island were mapped by Fullerton et al. (1992) as "lake, ice contact, and outwash deposits" while Cadwell (1989) mapped them as "till". Investigations also indicate the presence of ice contact deposits, particularly west of Fort Jay. These would have to have been deposited subsequent to the retreat from the late Wisconsinan terminal moraine (Garman et al. 2000).

During the Pleistocene Period there were repeated episodes of glacial advance and retreat, with the final Wisconsin Stage occurring about 22,000 years ago. The glacier was largely confined to Canada and northern New York. However, the Hudson-Champlain Lobe of the Laurentide glacier expanded to areas offshore near Long Island and Staten Island at its maximum extent around 22,000 years ago (Sirken and Bokuniewicz 2006). The most recent glacial advance scoured the Hudson valley to a depth

of approximately 488-650 feet (Levinton and Waldman 2006). Glacial retreat yielded the deep U-shape trough characteristic of the Hudson River valley. The final recession of the glaciers resulted in the deposition of tremendous amounts of sediment within the Hudson and vicinity, and glacial meltwater built a large outwash plain that extended south of Governor's Island.

Hydrology

Governor's Island is located in the northeast corner of Upper New York Bay, a tidal estuary at the mouth of the Hudson River. The bay contains several islands, including Governors Island, Ellis Island, and Liberty Island. Historically, the bay played an important role in New York City commerce.

The Hudson River is a 315-mile long 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 principle tributary being the Mohawk River. The lower half (over 150 miles) of the river, south of Troy New York, 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. 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. Before the last glacial retreat, sea level was about 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. The drowned portion of the riverbed is clearly delineated beneath the waters of the Atlantic Ocean and referred to as the Hudson Canyon (NOAA 2005). Beginning as an approximately 50-foot channel within Upper New York Bay, the cliffs of the canyon proper (located about 100 miles of the coast) are three quarters of a mile deep and as wide as 7.5 miles, making it the largest known ocean canyon off the east coast of the United States.

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, all of the oyster banks, including the land that comprised the early post-contact period Governors Island landform, would have been exposed land. As rising sea levels gradually inundated the bay, a salt marsh environment would have formed, followed by the development of oyster bay habitat observed during the early post-contact period.

Drainage Patterns

No freshwater resources are located on Governors Island.

Flora and Fauna

Habitats within the Hudson estuary, including mudflats and tidal marshes, support an enormous diversity of resources including waterfowl, fish, and shellfish. Over 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, Governors Island is quite exposed and the flora and fauna are very limited. No woodlots or other natural growth areas are present on the maintained island. The GOIS section of the island, and in particular the area within and around Nolan Park, contains chestnut and oak trees that were planted as part of an ornamental landscape. The largest animals that currently inhabit the island are grey squirrels and geese (Wright and Binzen 2003).

Project Area Conditions

The project area is located on Pier 102 on the eastern side of the island which extends out into Upper New York Bay. The APE is located entirely on the paved pier which was built as an extension from the natural shoreline. Although the landscape around the project area has been modified over centuries of use, the natural island shore was likely about ten meters to the west of the pier near the intersection of Kimmel and Andes Road. The natural topography of the island runs down-slope from the west along Andes Road and levels out at the intersection with Kimmel Road.

CHAPTER FOUR

CULTURAL LAND USE AND SETTLEMENT PATTERNS

This chapter provides an overview of the pre- and post-contact period history of the New York/Lower Hudson River area generally, and Governors Island specifically. This review provides a framework within which to predict and interpret archeological resources identified within the project area. The information for this context has been drawn from the results of professional CRM surveys and reports, a review of NPS ASMIS and state site files, pre-contact and post-contact period culture histories, and site-specific histories.

Pre-Contact Period Cultural Chronology

The Native American presence in the Lower Hudson River drainage has been documented from the PaleoIndian Period, approximately 12,500 years before present (B.P.), to the time of European contact, about A.D. 1500. The Port Mobil Site on nearby Staten Island indicates that the harbor islands were utilized by PaleoIndians, the earliest groups to arrive in the Northeast. During the period of occupation, before the rise in Holocene sea levels, the site was located on a high terrace. Recovered artifacts include diagnostic fluted points, endscrapers, and gravers (Ritchie 1980). Other identified sites in the region have shown a pattern of site location near wooded streams, lithic source areas, and near–interior river terraces (Kraft 1977).

The Early Archaic Period is characterized by diagnostic bifurcate–base projectile points. Many researchers feel that the shift from the PaleoIndian to Early Archaic periods in this region was merely a change in technology, rather than a cultural distinction. One key difference noted at New York sites is the preference for exotic lithics (obtained from distant sources) during the former period and more local varieties during the latter (LBA 1995). The data recovered from Early Archaic sites along the New York coast indicates that human groups were highly mobile and operated in large subsistence areas. This factor may be due at least in part to the changing environments and the unpredictability of resources from one season to the next. Early Archaic sites along the New York coast appear to be generally small and part of larger multicomponent deposits (LBA 1995).

Middle Archaic Period sites are also relatively scarce in this region. Recovered data suggests a more varied subsistence strategy than that noted for earlier periods, partially documented by a more diverse tool assemblage. Environmental conditions were finally stabilizing and a wide variety of floral and faunal resources were becoming available on a more regular basis. Settlement models indicate that two site types are typical of this period. The first type represents a large base camp near a diverse resource area where a group of people stayed for some period of time. These sites could have been revisited from one season or year to the next. A second identified site type is the small, temporary campsite or staging area, where an individual or small group would procure and/or process resources such as food

and raw materials. Both site types have been located in a wide variety of environmental settings in the region (LBA 1986). Sites dating to this period that have been located near estuarine and coastal areas tend to be small multi–component occupations.

Late Archaic Period sites have been located in higher frequencies along the coast; the general pattern in the Northeast suggests an increase in population and a more wide–spread use of available resources. As with the Middle Archaic Period, tool assemblages and feature types represent the variety in settlement and subsistence strategies. Recovered artifacts types at Late Archaic coastal sites include groundstone tools including pestles; woodworking tools such as gouges and adzes; and netsinkers, fishhooks and other maritime implements. Evidence from sites throughout the Northeast indicates that shellfish and marine resources were heavily utilized during this period, which consequently means a larger number of coastal sites were inhabited.

The Late Archaic is characterized by Brewerton, Vosburg, Normanskill, and Small Stemmed projectile points and is thought to have originated in the St. Lawrence River area. In coastal New York, sites dating to this period have been identified near tidal inlets, coves, and bays, and along lower terraces and knolls of the Hudson River (Ritchie 1980). Sites have been identified on all of the major islands (Manhattan, Staten, Long, Shelter, Fishers). The Bare Island point, which closely resembles the Small Stemmed type, has been identified as a major component of Late Archaic sites on Staten Island and the surrounding area. The Bowman' Brook Site on the northwestern coast of the island is a well–known example (Ritchie 1980).

The Transitional or Terminal Archaic is manifested in the Susquehanna and Orient phases, and dominated by Susquehanna and Orient fishtail projectiles. The Orient Phase was first identified at sites on Long Island (Ritchie 1980). The use of steatite for the manufacture of carved vessels is also associated with this period. The Orient fishtail tool assemblage perhaps the most recognized and common component of coastal New York sites (LBA 1995).

The Woodland Period (3000 – 400 B.P.) marks a major shift in subsistence and habitation strategies for Native peoples and is associated with the introduction of clay ceramic vessels and horticulture. Groups began to operate in more sedentary rounds, with large base camps forming the focal point. Coastal resources were fully exploited, and shellfish and marine species made up a large amount of the diet. Specific tool and ceramic types can be defined for local regions on the basis of style and decoration

The Early Woodland Period follows the Terminal Archaic and is marked by an increasing trend toward sedentism. Groups likely operated within a defined environmental territory and developed strategies to maximize the resources within these areas. The North Beach Focus of the Windsor Aspect defines this period in coastal New York (Smith 1980). Characteristic artifacts include Vinette I grit–tempered ceramics, a wide variety of projectile point forms, and tools like netsinkers, bone awls, anvil stones, and abraders (LBA 1995).

Middle Woodland Period. sites along the coast area, particularly western Long Island associated with the transition from the North Beach to the Clearview Focus and the introduction of the Abbott Complex (Smith 1980). The Clearview Focus closely resembles the North Beach Focus and may represent an evolution of the earlier ceramic styles. The Abbott Complex is differentiated from these two by the

presence of Abbott zoned pottery (Smith 1980). Artifact types dating to this period include Fox Creek stemmed and lanceolate points, additional fish and shellfish collection and processing tools, pestles, and hammerstones.

The Late Woodland Period is marked by a shift from the settlement and subsistence patterns of the preceding periods. Year–round village–type settlement emerges as an evolution of the long–term base camps of earlier Woodland peoples. This settlement pattern depends on a stable environment with predictable, long–term floral and faunal resources.

Late Woodland tool assemblages are similar in diversity to those previously discussed and reflect the utilization of a wide variety of plant, animal, and lithic resources. Diagnostic artifacts include small triangular projectile points, chipped, pecked, and groundstone tools, and a range of ceramics. Ceramic styles include collared and collarless vessels with geometric incised designs and cordmarking (LBA 1986).

Sites identified on western Long Island are associated with the East River Aspect of the Clasons Point Phase. The sites are typically semi–permanent villages covering one acre and located along tidal streams and bays. Data collected from midden deposits indicates the emphasis on hunting and fishing in the diet, with less direct evidence of maize cultivation. The recovery of stone hoes, pestles and mortars does support the idea that horticulture was practiced in some capacity.

Research at Late Woodland sites along the coast of New York has produced a number of hypotheses on the causes of sedentism. Theories that the introduction of maize horticulture led to permanent habitation have been challenged in recent years. Some archeologists have interpreted sedentism as a product of interaction with European culture, specifically the fur and wampum trade (Ceci 1977, 1980, 1982; Silver 1984). This hypothesis suggests that Native populations remained near the coast during the winter months in order to trade with European explorers, leading to year–round occupation of formerly warm–weather villages.

The Woodland Period terminated at the time of European contact, which occurred sporadically through much of the sixteenth century. The harbor islands were often a point of communication and trade for local indigenous groups and European sailors exploring the coastline. Governors Island was apparently no exception, and there is some speculation that a Native/Dutch Trading Post was established for a short time on the island (Stokes 1928).

Expected Pre-contact Archeological Resources

Three pre-contact Native American archeological sites have been recorded on Governors Island. GOIS00007 was identified during the emergency data recovery investigations conducted at a utility line construction site in the northwestern section of the island. Chert, quartz, and quartzite debitage (chipped stone waste flakes) was recovered within disturbed soil contexts surrounding a EuroAmerican cemetery. No intact Native American deposits or cultural features were identified within the tested data recovery project area (Herbster and Garman 1997; LBA 1995).

Despite the lack of stratigraphic integrity, the materials recovered from the data recovery site area did indicate a temporal occupation range. A Late/Transitional Archaic Bare Island projectile point was collected along with sherds of aboriginal clay pottery. Based on stylistic and decorative elements, the pottery was dated to the Late Woodland Period. These diagnostic artifacts, together with non–diagnostic lithic debitage, suggested at least sporadic use of the island by Native people from approximately 5000 to 450 B.P. (Wright and Binzen 2003).

The Fort Jay Native American Site (GOIS00008) was identified beneath fill deposits in the golf course area surrounding Fort Jay. Cultural deposits collected from this site included charcoal and ceramics which indicated a temporal association with the Woodland Period (Herbster and Garman 1997). A second Woodland Period site was identified in the northeastern portion of Nolan Park to the west of the current project area. The Nolan Park Native American Site (GOIS00009) contained chert and quartz flakes in addition to more than a dozen ceramic sherds and one or more possible features (Garman et al. 2000).

The pre-contact period archeological sensitivity of the GOIS Pier 102 project area was expected to be relatively low given the lack of natural soil strata within the testing areas. It was considered possible that isolated artifacts could be identified within fill deposits, especially if fill materials from other parts of the original island were used during the construction and/or maintenance of the pier, but intact Native American deposits were not expected.

Contact and Post-Contact Period Cultural Chronology

The EuroAmerican utilization of Governors Island could have begun as early as the sixteenth century, when European explorers reached the eastern coast and began interacting with the Native inhabitants. Giovanni Verrazano passed through New York Bay in his navigation of the Eastern Seaboard in 1524, naming it the Bay of St. Marguerite and the surrounding lands Angoulême (after King Francis I).

Mariners, fishermen, and merchants visited the East Coast sporadically over the next century or so, with no permanent settlement in the region during this time. 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 provide the Dutch with land claims to the entire Mid–Atlantic region– designated New Netherlands.

Hudson's accounts of the Native population in the Hudson Valley region indicate that relations between the two groups were not always peaceful, although there was a fair amount of trade in the area early on. After Hudson's return to the Netherlands, merchants were encouraged to begin long–term trade for furs in the new territory. Within ten years European competition was so intense that Native inhabitants were offered up to three times the usual trade for a pelt by Dutch traders.

The Dutch prosperity did not go unnoticed. In 1613 or 1614, the English sent a military compliment to get the Dutch out of Manhattan and the Hudson River. Several repeated efforts by both the English and French failed, with the Dutch steadfastly holding their claim to the land to be valid. Realizing that their tenure was under scrutiny, Dutch colonization was seen as a way to hold onto control. To this end, the

West India Company created the Colony of New Netherlands, which allowed wealthy patrons to purchase tracts of land from the Native Americans.

Early Dutch records list Governors Island under a variety of names, most reflecting the Native American name of Pagganck. Stokes's (1928) list of variations includes Nooten, Noten, Nut, and Nutten Island; Adrian Block, who sailed into New York Harbor in 1614, called it Nutt–Island. A single walnut tree between Buildings 125 and 135 is a reminder of the island's wooded past.

Sources differ regarding details of the earliest Dutch settlement on the island. Wilson (1893:39) states that the Dutch West India Company erected a trading post there in 1621, while Stokes (1928 vol. 4:50) cites 1624 as the date of settlement. The extent of the Dutch operation at this time is not known. By 1625–26, there are references to a sawmill operating on the island Stokes (1928 vol. 4:113). Given the lack of powerful streams or waterfalls on the island, it may have been either a tidal mill in one of the shoreline's natural coves or a windmill. That the Dutch went to the effort to establish a sawmill on the island suggests that there was sufficient tree cover to make it worth their while.

In 1637, the sachems of the Manhattas deeded the island to the Governor General of New Netherlands, Wouter van Twiller. The Vingboons map of 1639 depicts the island as the "plantation of [van] Twiller." It also shows the sawmill at the northwest corner of the island, in the approximate location of Castle Williams. A document from 1639 acknowledged a contract for "the hire of the Saw Mill standing on Nut Island, belonging to the Directors of the Incorporated West India Company, Chamber of Amsterdam (New York State Library vol. 1:161, cited in Stokes 1928 vol. 4:91). The sawmill was taken down in 1648; a resolution ordered that the mill being "wholly decayed and in ruin" be dismantled, if possible; if not, it was to be burned down in order to salvage iron from the structure (New York Colonial Documents XIV: 81–82, cited in Stokes 1928 vol. 4:113).

Van Twiller's removal from office in 1638 voided his title to the island and placed it "in the public domain as the official residence–estate for Dutch governors" (LBA 1995:14). His administration left a legacy of ill will; in 1650, the directors of the West India Company complained in a letter to Governor Pieter Stuyvesant that van Twiller "took the whole of Nut Island and Hellgate without either planting or building on the former during the whole time, and that he was bound to do so" (Stokes 1928 vol. 4:120). This suggests that early occupation of Governors Island may have been relatively ephemeral, making it difficult to discern in the archeological record.

The British seizure of New Amsterdam in 1664 temporarily ended the Dutch occupation of Governors Island. Stokes (1928 vol. 4:130) records only one reference to the island during 1664 to 1673: a note about a garden and fruit trees established ca. 1669. Although the Dutch regained control briefly in 1673–74, the Treaty of Westminster quickly returned the territory to the British in 1674.

The island saw a variety of uses during the British occupation: governor's residence, quarantine station, and fortification. A 1698 document notes that the island was the only land reserved for exclusive use of the governor; a second proclamation, from that same year, reaffirmed the governor's title to the property and officially changed its name from Nutten to Governors Island (Stokes 1928 vol. 4:409, 415).

Curiously, given it status as elite property, Governors Island next became a quarantine station for emigrants from the German Palatine. Accounts of the numbers of Germans quarantined on the island vary from seven thousand to ten thousand: with Smith (1923:36) notes over 250 deaths during the period 1710 to 1712. The British established "courts of judicature" on the island to determine the legal status of the immigrants and to process land grants and other claims (Stokes 1928 vol. 4:469).

During the last of the British, French and Indian Wars (1754–1760), the British established the first military outpost on Governors Island. Although a recommendation had been made in 1745 to fortify the island, nothing was done until the outbreak of hostilities farther north. Members of the 51st Regiment of British Colonial Militia, stationed on Governors Island in 1755, are perhaps the earliest candidates for the Andes Road burials excavated in 1994 (LBA 1995:16). That the troops were left without sufficient resources is evidenced by a 1756 plea for straw and wood, which also suggests that the island had by then been deforested.

Both Roberts (1980) and Wilson (1893) note that the first American command on Governors Island came with the temporary British withdrawal from New York in 1775. Stokes (1928, citing the *New York Packet* of 11 April 1776) stated that on 8 April, 1,000 Continental troops had fortified both Governors Island and Red Hook. The extent of these fortifications is not known, especially because the American occupation lasted less than six months. On 31 August, 1776, the Americans fled Governors Island, leaving behind a substantial store of munitions and provisions.

The British maintained substantial fortifications and support structures on Governors Island, including storehouses, wharves, and a "Convalescent's Hospital." On 3 December, 1783, the last British troops withdrew from the island, initiating nearly two decades of confusion about the island's future as a defensive proposition.

Less than a year after the British withdrawal, the New York Assembly appropriated Governors Island for the exclusive use of the state's governor. Authorities in New York City contested the taking, citing the Dongan Charter (1686) and the Montgomerie Charter (1730), both of which gave the city title to all "waste, vacant and unappropriated lands between the high and low tide lines" (cited in Stokes 1928 vol. 5:1214). The Assembly ordered a resurvey of all lands between the tidal marks in and around Manhattan; evidently deciding that Governors Island was not worth a lengthy legal battle, they ordered the same surveyors to plat Governors Island into 2–acre lots, laying out streets and lanes as appropriate. They further charged the Commissioners of the Land–Office with selling off those lots as quickly as possible, reserving any land suitable for fortifications.

In the interval between 1783 and 1794, the island served a variety of uses, probably relating to the governors' occupations. In 1794, the task of surveying Governors Island finally fell to Sebastian Bauman, "Lieutenant Colonel Commandant" of the New York Regiment of Artillery. His report indicates the great defensive possibilities of the island, especially due to its proximity to the southern tip of Manhattan (Stokes 1928 vol. 5:1228).

During tensions with Britain over the XYZ Affair, volunteers representing different trades and militia forces were called upon to enlarge the existing fortifications (christened Fort Jay) and construct additional defenses on the island. On 22 April, 1794, a fatigue party of 50 officers worked on the island. The

city's cartmen contributed their labor on 26 April, 1794, followed by the members of the Tammany Society (29 April), the local ship–carpenters (1 May), the journeyman Hatters (2 May), the cordwainers (3 May), and even the lawyers (5 May) (cited in Stokes 1928 vol. 5:1307–08).

The work of the volunteers and conscripts greatly augmented any existing fortifications on Governors Island. Stokes (1928 vol. 4:1327) cites a War Department report describing Governors Island as "fortified with a fort made of earth and two batteries under its protection, partly lined with brick masonry, two air–furnaces, a large powder magazine, and a barrack for the garrison." The period of uncertainty about the future disposition of the island ended with an 1800 Act of the New York Assembly, ceding Governors Island to the federal government. The United States Army's occupation of the island, which would last more than a century and a half, had officially begun.

By 1805, Fort Jay was in a ruinous condition (Tompkins 1985:3). Lieutenant Colonel Jonathan Williams designed and directed a major reconstruction of the island's fortifications undertaken in 1806. Williams was able to salvage only parts of the previous fortification, including the gate, sallyport, and two of the barracks standing on the site. Under his direction the fort, renamed Fort Columbus, acquired its present dimensions while maintaining its four–bastioned square shape. The fort was able to mount 104 guns on its completion and played a key role in the deterrence of British forces during the War of 1812. Fort Jay is listed individually on the National Register of Historic Places.

The second major fortification constructed on Governors Island was Castle Williams (1807–1810/11), listed individually on the National Register of Historic Places. Also designed by Lieutenant Colonel Williams, the Castle is a nearly circular, three–tiered sandstone structure at the northwest corner of the island. A passageway connected the structure with Fort Jay. In the twentieth century, the Castle has served a variety of penal functions: it accommodated Confederate prisoners during the Civil War, and, after continued use as a military prison, it served as the Eastern Branch of the United States Disciplinary Barracks until 1966.

The 1813 Mangin map (Figure 4–1) is useful as a guide to the post's layout during the War of 1812. In addition to Castle Williams and Fort Jay, the map details the South Battery at the Island's southern tip, an extensive garden plot near the center, a barracks in the southeast corner, and several maintenance and storage buildings.

The 1839 Bernard map (Figure 4–2) documents some significant changes to the island. The buildings of the New York Arsenal (discussed below) are visible to the north and east of Fort Jay. The barracks seen in 1813 is still present, with the "New Hospital" (Building 9) now present to the southwest of the barracks. Developments on the island in the nineteenth century saw the post's function gradually change from a fortification to a military administration center, including recruitment, support, and imprisonment (Figure 4–3; Tompkins 1985:11). The island was the headquarters of the First Army until the early 1960s, when the headquarters moved to Fort Meade, Maryland.

Established in 1833, the New York Arsenal was a separate operation from the fortifications on Governors Island. The arsenal, operated by the Ordnance Department, served as a major point of distribution of munitions along the Eastern Seaboard. It consisted originally of two ordnance storehouses located northeast of Fort Jay.

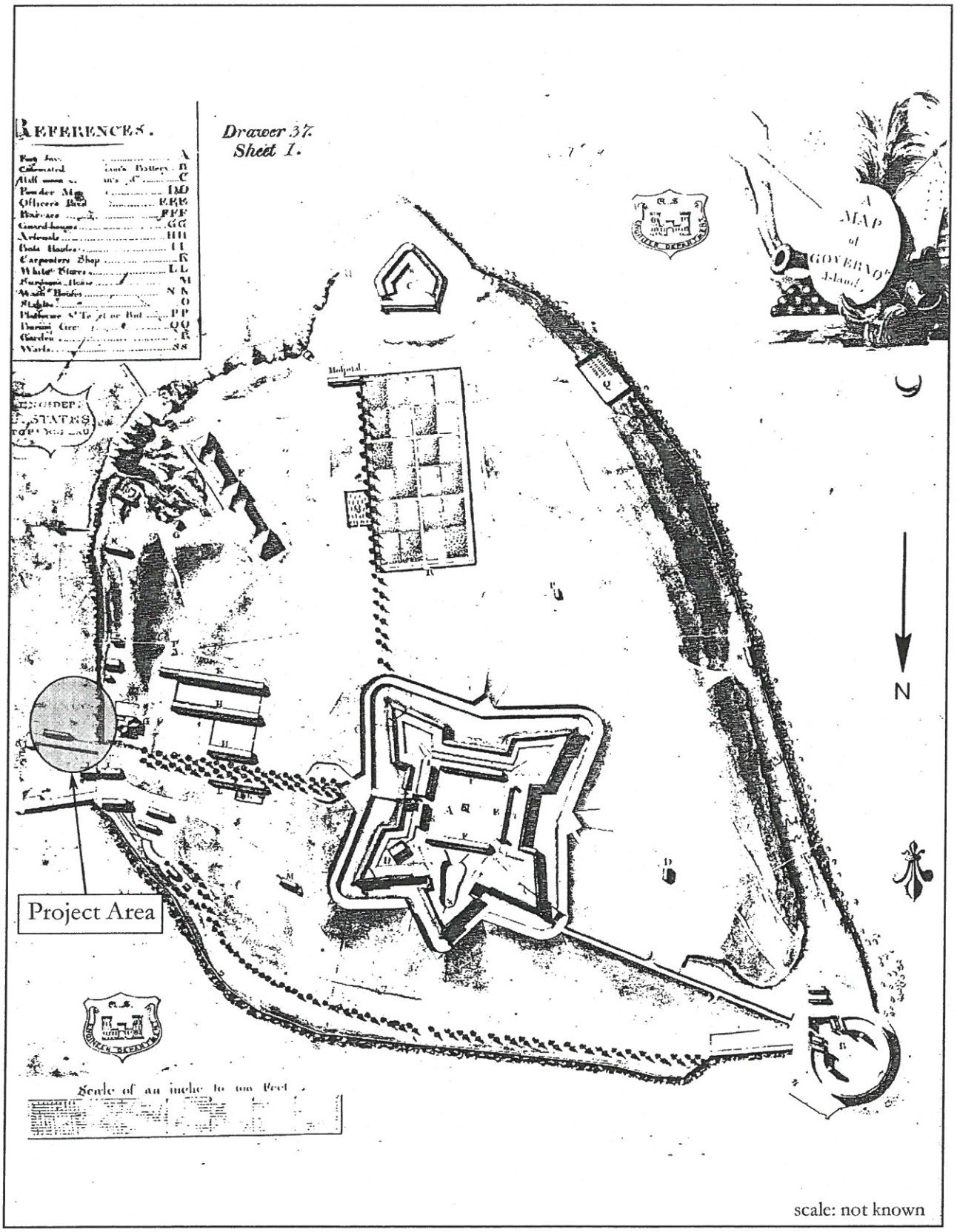

Figure 4-1. ***Map of Governors Island*** **showing approximate location of the GOIS Pier 102 project area (Mangin 1813).**

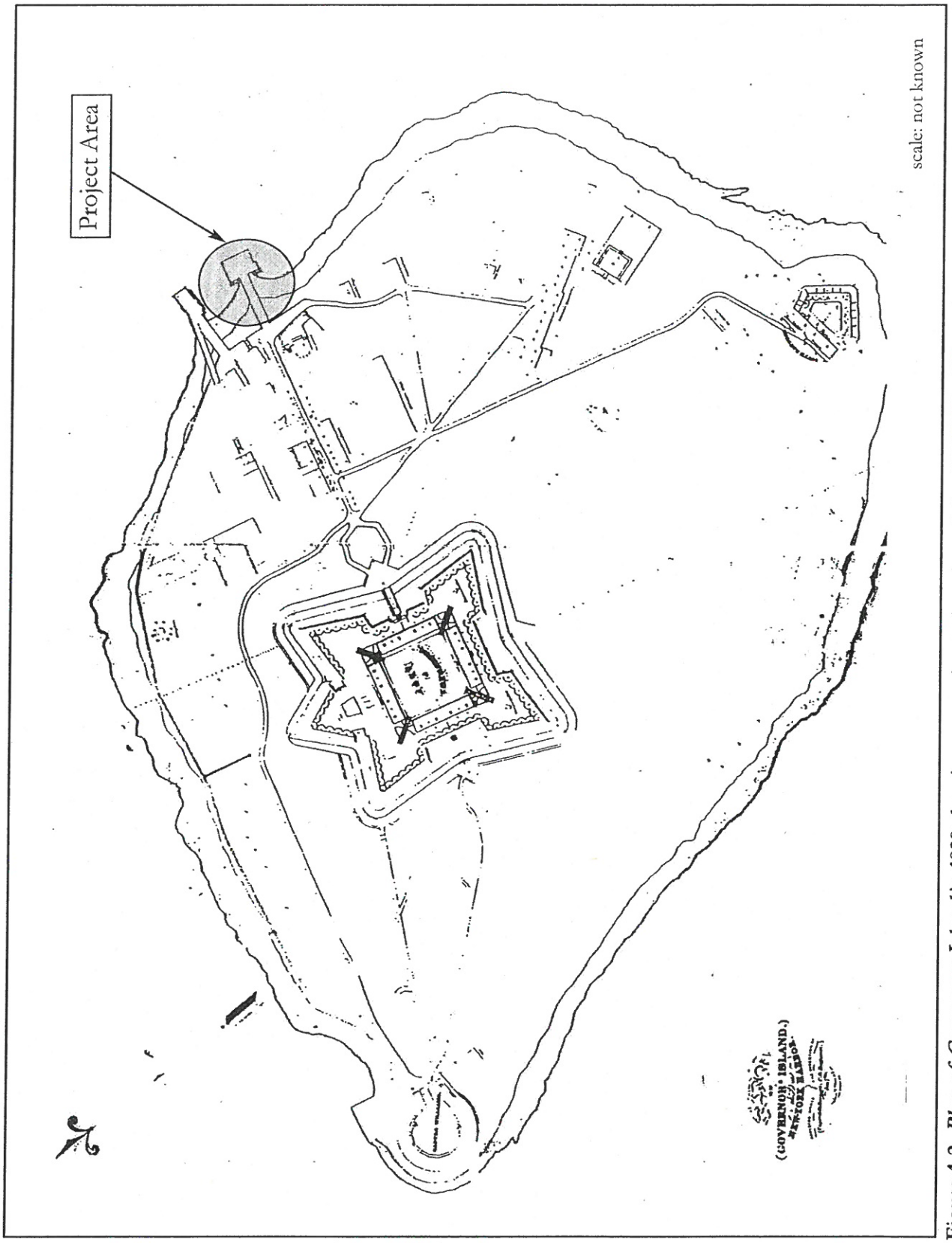

Figure 4-2. *Plan of Governors Island* in 1839 showing approximate location of the GOIS Pier 102 project area (Bernard 1839).

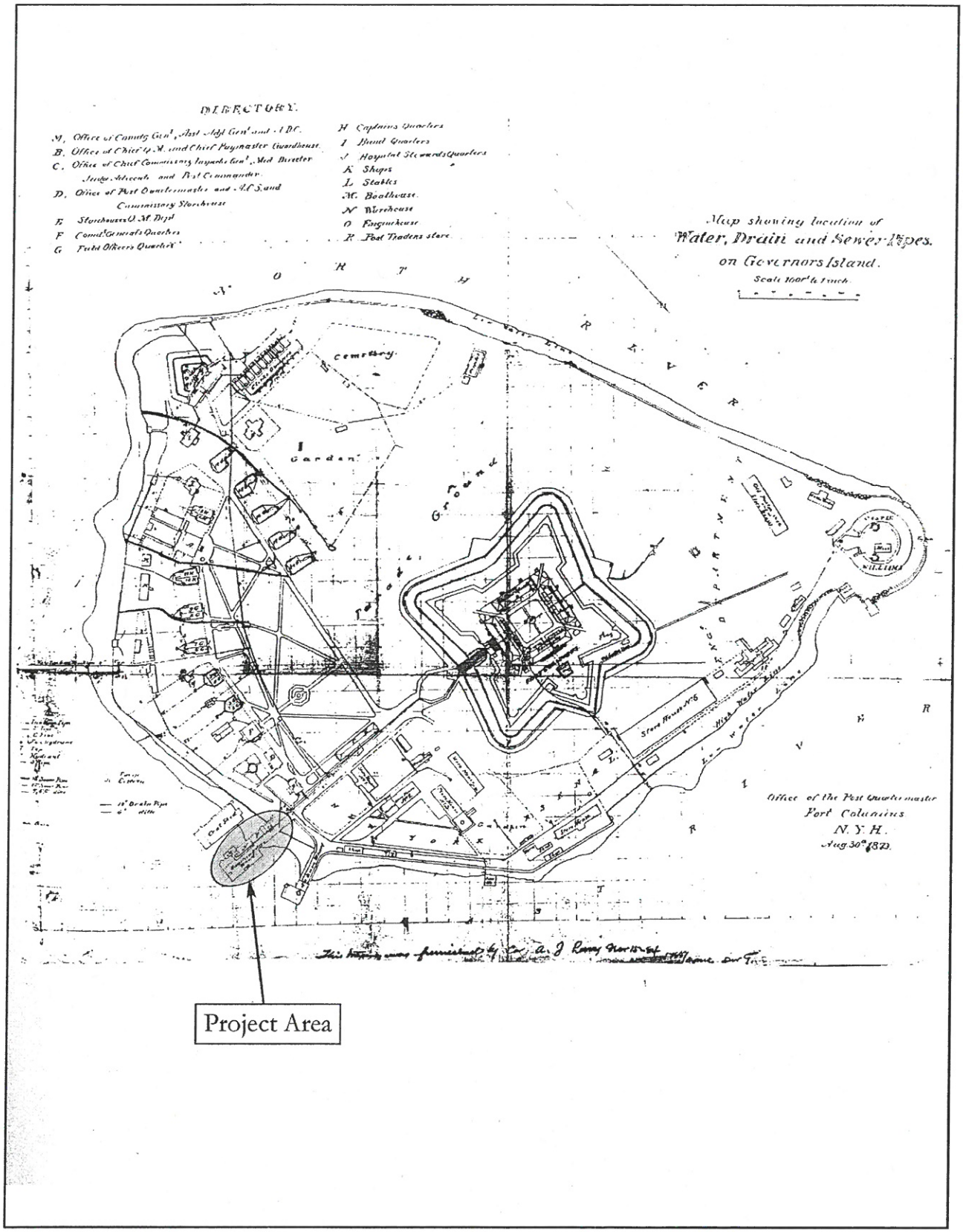

Figure 4-3. 1879 map of buildings and utilities on Governors Island showing approximate location of the GOIS Pier 102 project area (source: Tompkins 1985:21).

Expansion of the arsenal occurred in several different phases. After the construction of the original storehouses, housing for officers was completed. This phase of development was relatively limited, however, because the day–to–day operations at the arsenal were handled by civilians who commuted to the island. In 1847 the commanding officer requested that an additional storehouse be built. In 1849, the boundaries of the arsenal were enlarged to include the entire area north of the main road from Fort Jay to the wharf, and the storehouse was completed in 1850.

By 1860 the Civil War was imminent and the arsenal was again enlarged. The seawall along the northern boundary was extended to accommodate the shot and shell yard, and a new office building was constructed east of Fort Jay. Throughout the Civil War, the Chief of Ordnance complained that the limited space on Governors Island was insufficient for the growing needs of the area. Large quantities of supplies were already being stored in Manhattan, and proposals for a new site were floated for years. Sandy Hook in New Jersey eventually took over as the area's arsenal.

The final period of expansion at the New York Arsenal occurred between 1870 and 1875, when two additional storehouses were completed. The primary function of these buildings was storage of obsolete munitions and equipment left over from the war. Although the need for munitions during World War I was great, the facilities at Governors Island served only as support and coordination for the Ordnance Department in Manhattan. In 1920, the Department closed the New York Arsenal on the island and moved its operations to the Raritan Arsenal in New Jersey.

In addition to extensive construction to support the First Army, a major impact to Governors Island occurred in the first decade of the twentieth century, when the Army Corps of Engineers enlarged the island to its present size (Figure 4-4). This process entailed the construction of a seawall revetment and then deposition of fill, reportedly from the excavation of the Lexington Avenue subway. A rare Civil War–era Brooke rifle was salvaged from these fill deposits, restored, and placed on display in one of the island's buildings (Lewis Wunderlich, personal communication in Herbster et al. 1997).

Construction of the golf course around Fort Jay is believed to have occurred during the 1930s, when a substantial Works Progress Administration (WPA) presence was established on the island. No records relating to the extent of cutting and filling that occurred during this operation have been located. Relatively little grading seems to have occurred based on comparisons between late–nineteenth–century surveys of the island and the present topography of the course. Exceptions include the sand traps and greens.

Governors Island became the largest United States Coast Guard (USCG) base in the world after its acquisition by the United SCG in 1966. In addition to serving as the base for numerous tenant commands, the island became a maintenance and small–scale repair facility for USCG craft in its role as Support Center New York.

In terms of historic preservation, perhaps the most significant event on Governors Island occurred during the USCG's tenure on the island. This was the preparation, in the early 1980s, of a *Historic Structures Inventory* (Tompkins 1985) resulting in the listing of the original island as a National Historic Landmark District and the nominations of five properties (Fort Jay, Castle Williams, Quarters 1, Building 2, and Building 9) as individual listings on the National Register of Historic Places.

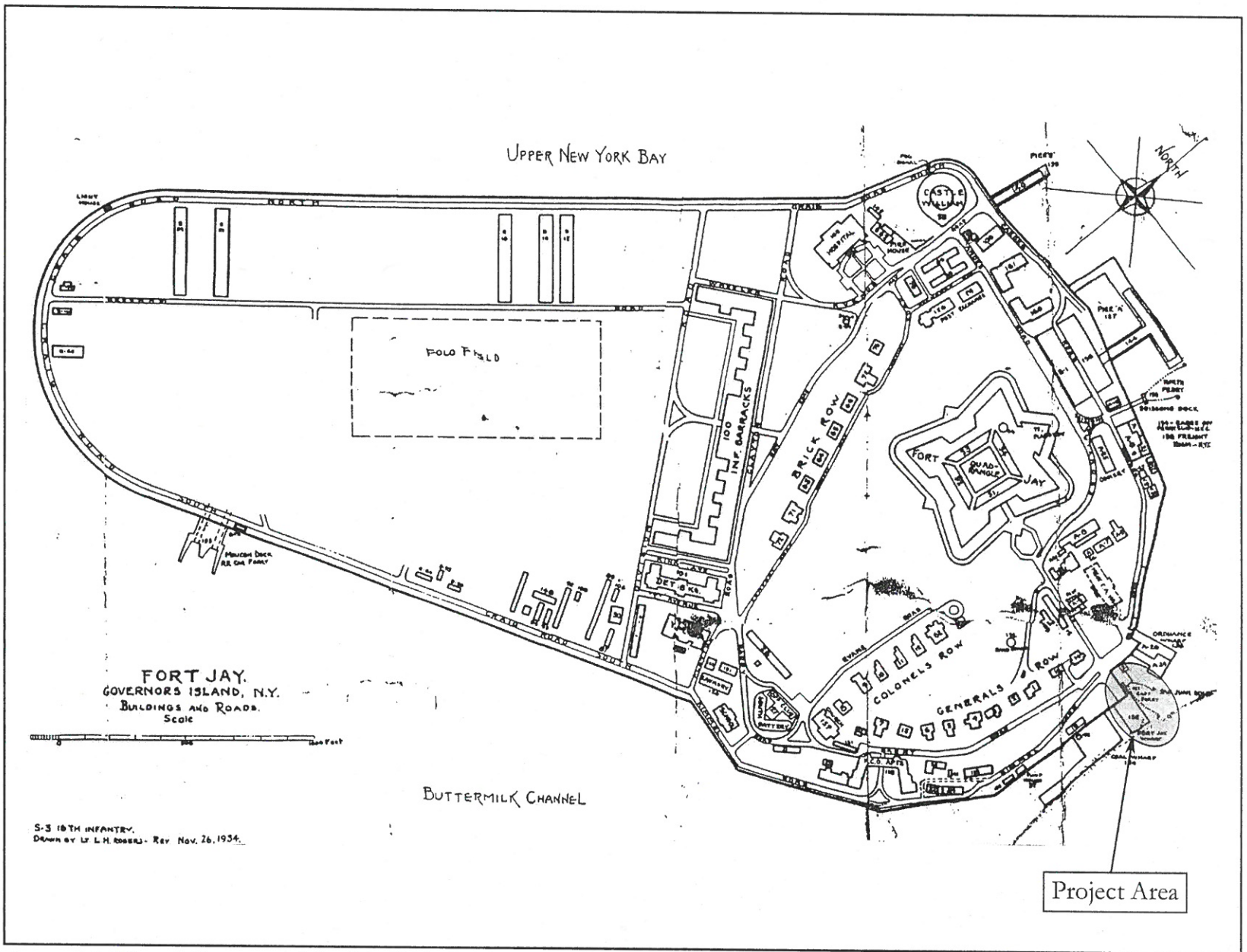

Figure 4-4. Map of Governors Island in 1934 showing approximate location of the GOIS Pier 102 project area (source: Tompkins 1985:25).

Expected Post-contact Archeological Resources

The post-contact period archeological sensitivity of the GOIS Pier 102 project area was defined by the history of construction and use of the Pier over time as an extension of the natural shoreline. In addition to the pier itself, the general project area was thought to be the location of the circa 1879 Post Traders Site (GOIS 00032), a complex of two buildings that are documented on several late nineteenth and early twentieth century maps of the island (see Figure 4-3). The site was documented through archival research as part of the 2003 *Overview and Assessment* (Wright and Binzen 2003) but no information about its physical archeological remains was known prior to the current project.

If present, archeological deposits associated with this site could include foundation remains, structural materials, and or deposits associated with the supplies that may have been sold and/or stored within the complex. It was also expected that cultural deposits associated with the historic pier itself could be present.

CHAPTER FIVE

RESULTS AND RECOMMENDATIONS

Results of the Archival and Map Research

The *Historic Structures Inventory* (Tompkins 1985) prepared as part of the HABS/HAER documentation of Governors Island provided relatively detailed information about the development sequence of the Pier 102 area over time. The Inventory includes numerous historic plan and maps of the island that were compared with modern geographic data to help reconstruct the land use history of the area.

The earliest documentation of development in the vicinity of the GOIS Pier 102 project area is depicted on the 1813 Mangin map of Governors Island (Figure 5-1). A platform or pier appears to be located in the general area of Pier 102 and extends further to the east than the present-day structure. It is difficult to determine if this feature is in the exact location of Pier 102, but using the entrance to Fort Jay and the current layout of Andes Road as a guide, it does appear to line up. There appears to be one unidentified building positioned along the southern edge of the structure at this time, as well as a pier located just to the north. This second pier is oriented slightly to the northeast at an angle that closely resembles the present-day pier to the north of Pier 102 (see Figure 1-2). The placement of a pier at the end of Andes Road would have provided access from the water to the entrance of Fort Jay, suggesting it may have been located there to service Fort Jay, possibly during the War of 1812.

The 1839 Plan of Governors Island depicts piers in the same locations as the 1813 map, but the eastern end of the Pier 102 area appears to have been enlarged and there are no structures depicted on the 1839 map (Figure 5-2). This map may depict added land extending from the natural shoreline along most of the length of the pier, or the drawing may depict tidal highs and lows. A plan created less than ten years later (1847) depicts the same layout of the Pier 102 area but describes this features as the "Old Wooden Wharf" while the pier to the north is designated as the "Stone Wharf" (Figure 5-3). This northerly wharf likely serviced the two ordnance storehouses that had been commissioned by Capt. W.A. Thornton, Commanding Officer, in 1847 (Tompkins 1985).

The 1867 map of the piers depicts yet another configuration of the structure. The image reproduced in the *Inventory* (Tompkins 1985:20) is not clear enough to read but there appears to be some type of extension or possibly a building to the south of the pier and well as a possible structure on the pier itself (Figure 5-4).

The most detailed nineteenth century map of the project area is an 1879 plan of buildings and utilities (Figure 5-5). This plan, referenced in the 2003 *Overview and Assessment* (Binzen and Wright) is the earliest available document that references the function of the Pier 102 area, including the "Post Traders store" referenced by a "P" on the map. This store appears to be situated within or south of the current

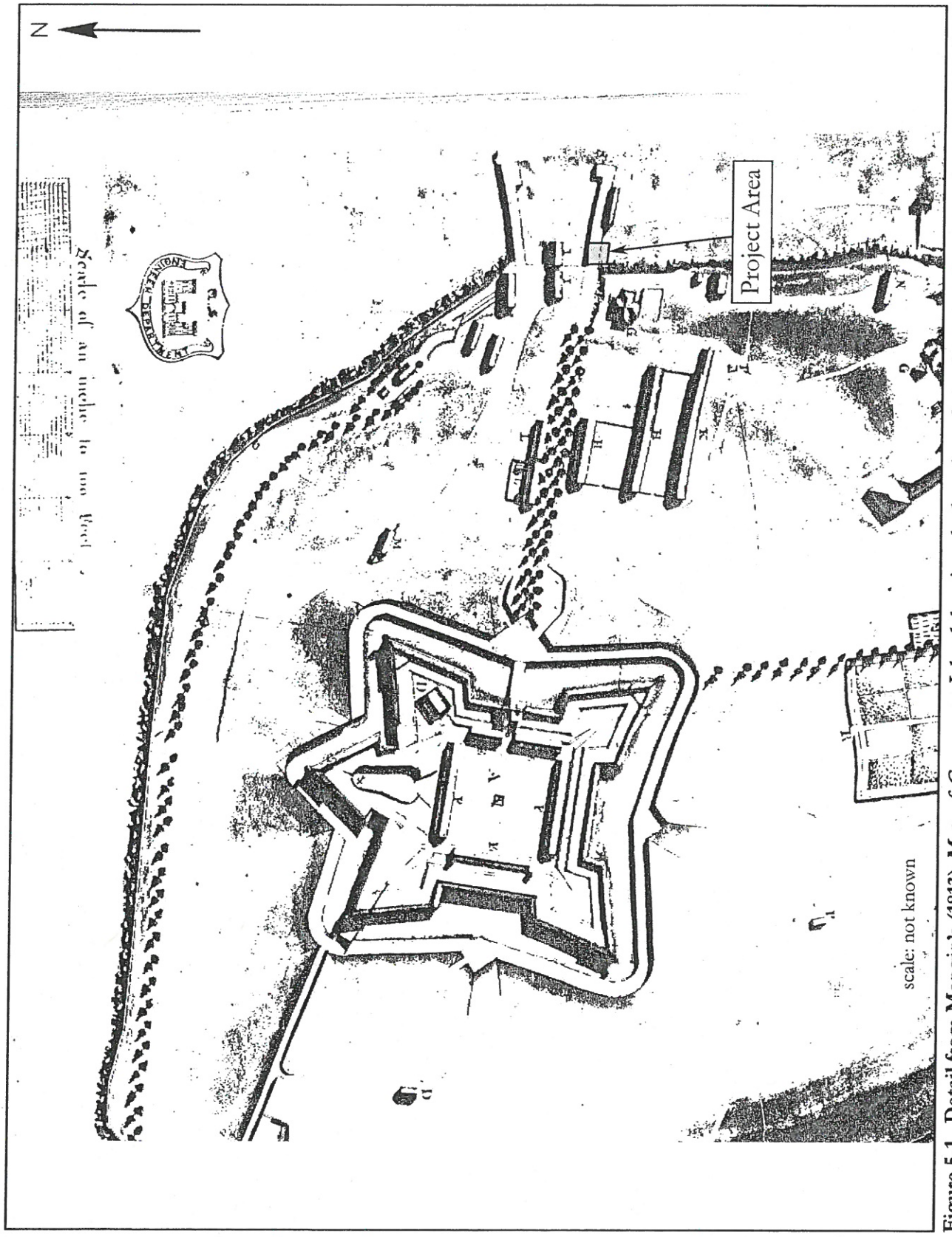

Figure 5-1. Detail from Mangin's (1813) *Map of Governors Island* showing the location of the GOIS Pier 102 project area.

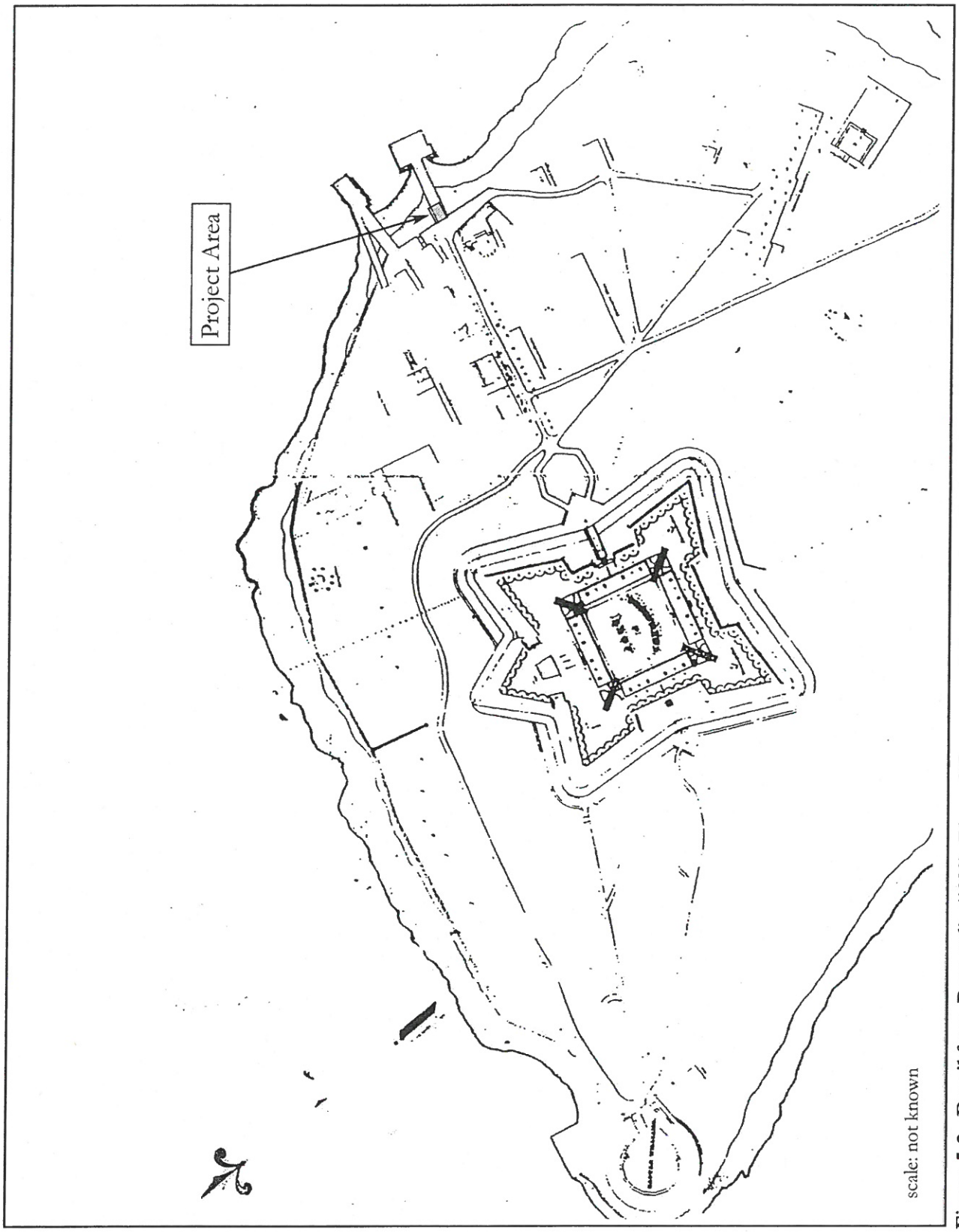

Figure 5-2. Detail from Bernard's (1839) *Plan of Governors Island* showing the location of the GOIS Pier 102 project area.

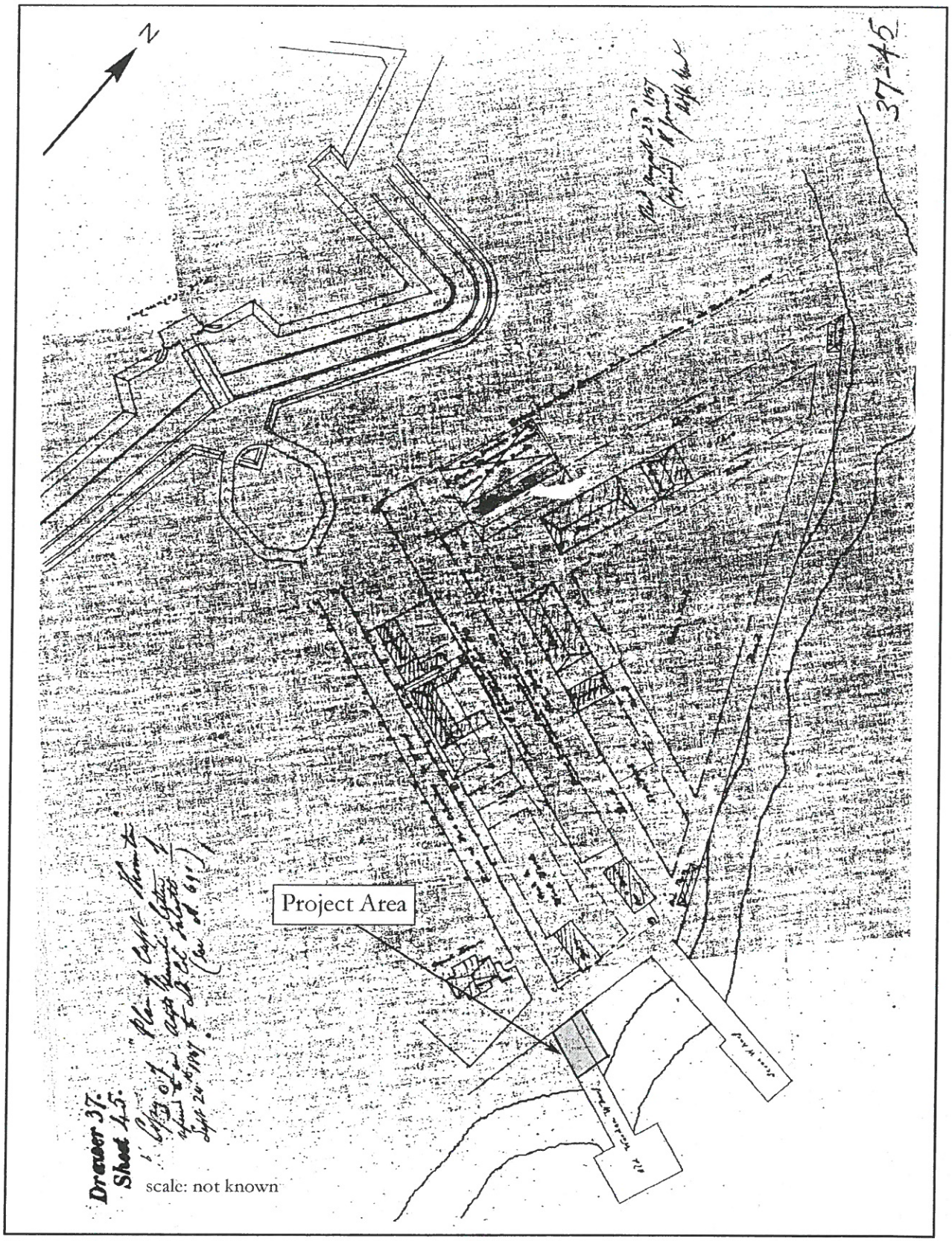

Figure 5-3. Detail from Humphries' 1847 "Plan of Capt. Thornton" for New York Arsenal showing the location of the GOIS Pier 102 project area on Old Wooden Wharf (source: Tompkins 1985:20).

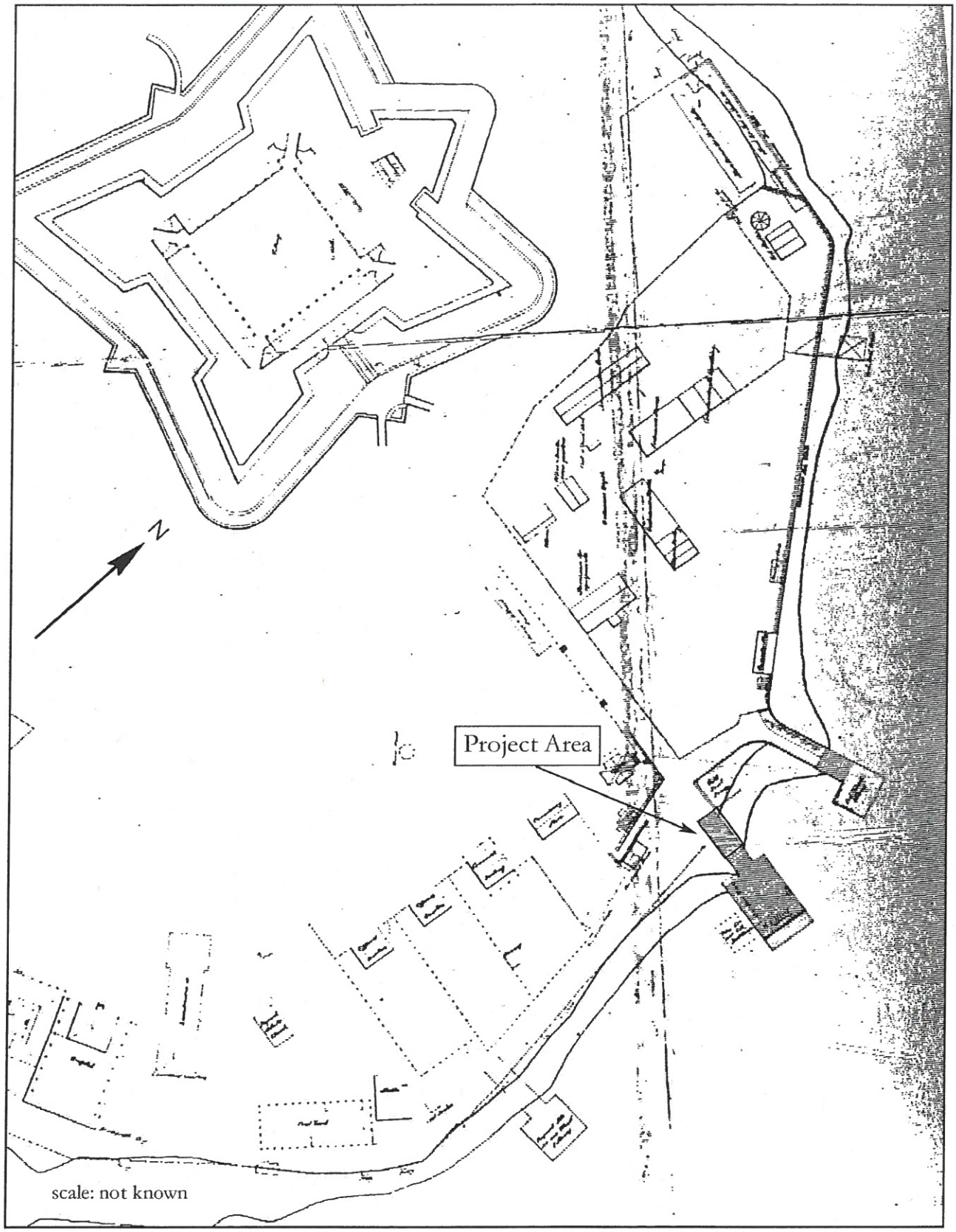

Figure 5-4. Detail from a Map of Governors Governors Island (1867) showing the location of the GOIS Pier 102 project area (source: Tompkins 1985:20).

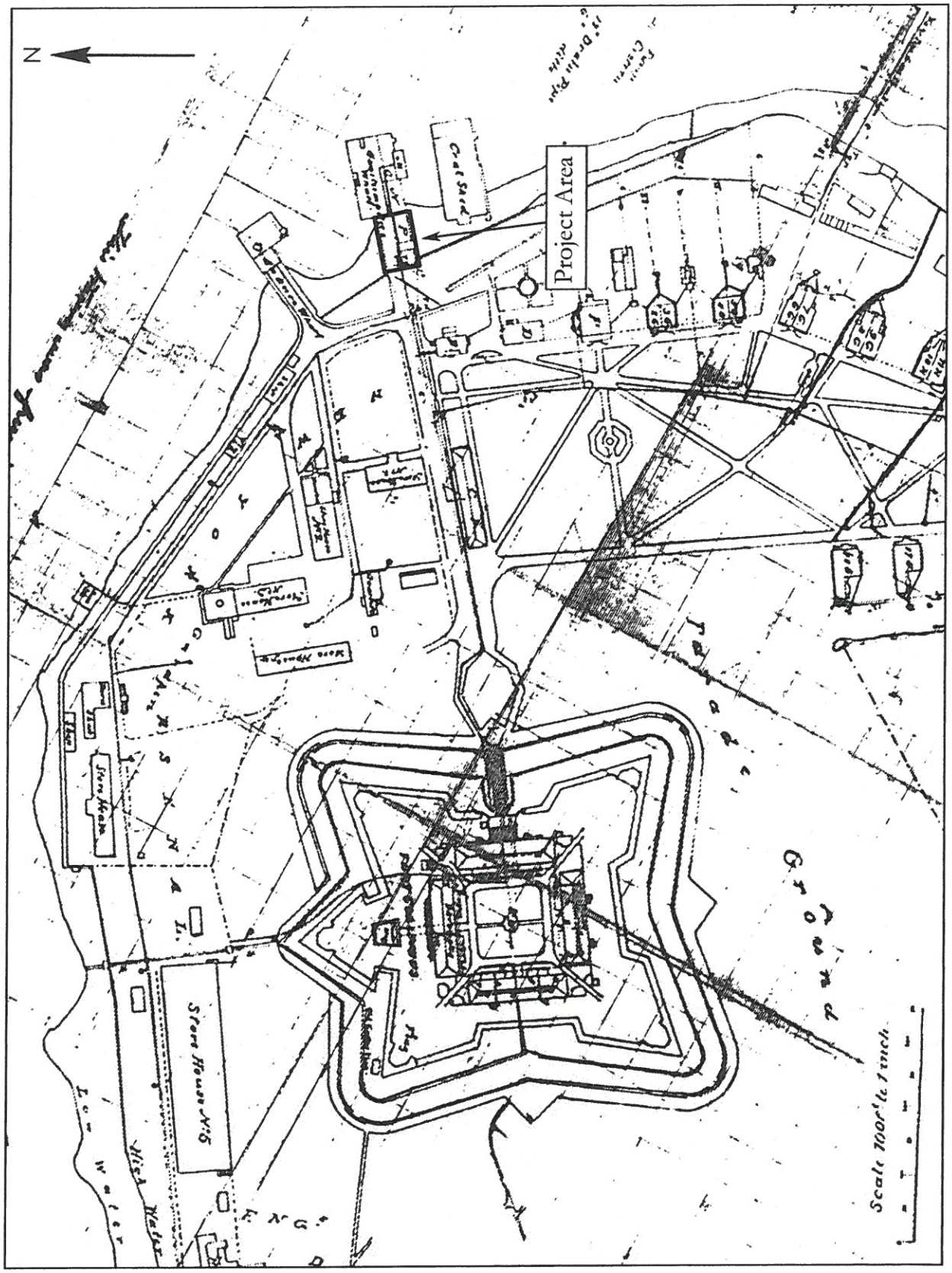

Figure 5-5. Detail of 1879 map of buildings and utilities on Governors Island showing the Post Traders Store, Storehouse and GOIS Pier 102 project area on Quartermasters Wharf. (source: Tompkins 1985:21).

Pier 102 project area, based on the relative location of the Andes/Kimmel road intersection. The pier itself is now designated as the "Quartermasters Wharf" and contains several other buildings, including a warehouse (labeled "N"), and Engine House (labeled "O"), and a boathouse (labeled "M"). The pier to the north is designated as "Ordnance Wharf", suggesting that is continued to function as a munitions offloading and/or storage area. A structure to the south of Pier 102 is labeled as a "Coal Shed" and presumably was also erected on piers or other supports partially within the waterline.

By 1908, the area around Pier 102 had changed considerably and the area between the Quartermasters Wharf (labeled as "QM Wharf") and Coal Shed had been filled in to more closely resemble the present land footprint (Figure 5-6). This map still identifies the Pier 102 area as "Post Traders" (labeled "17") although the word "store" is not included in the map's legend. The pier also extends almost twice as far to the east. The 1908 plan is also the first to designate a "Ferry Slip" in the Pier 102 area.

Further expansion and improvements to Pier 102 and nearby wharves can be noted on the 1934 U.S. Coast Guard Map of Fort Jay (Figure 5-7). This plan does not depict any structures on what is now referred to as the "Fort Jay Wharf", suggesting that the Post Traders building was no longer standing at this time. No archival research has been identified, to date, to indicate when or how the building was removed.

One photographic image of the Pier 102 project area was identified in the GOIS archives by NPS Supervisory Park Ranger Michael Shaver (Figure 5-8). This image depicts the northern edge of the seawall and a building located along what appears to be the southern edge of the pier. The granite seawall blocks in the photo are still in place along the outer edge of Pier 102 and provide some comparative information to help locate the building in the present day. Based on a rough estimation of the photos scale and perspective, this building would likely have stood to the south of the current paved pier area and outside of the project impact area. The building is not identified in the photograph, but its outside appearance suggests that it may have been a store.

The photographic image most closely matches the 1867 and 1879 maps of the Pier 102 area, both of which depict a pier or wharf structure that is wider at the eastern end and contains more than one building along the southern side. Using these maps as a guide, the photograph appears to date generally to the last quarter of the nineteenth century. The photographic image contains a hand-written caption that reads "The 'General (Mirge)' with troops, also the 'Atlantic', Governors Island". These two vessels are visible in the photo and additional research to determine when they were active could help to pinpoint the date of the photograph.

The photograph also provides important details about the nineteenth century pier structure that are not included on the historic maps. The granite blocks that currently form the northern and eastern edges of the Pier 102 project area are visible in the photograph, indicting that the current pier is in the same location and sits on the same stone retaining wall as one iteration of the historic pier. The photo suggests that the portion of Pier 102 within the granite blocks that is currently paved was also solid fill during the historic period. The most significant difference in the photograph is the wooden portion of the pier that extends off the eastern end of the stone wall. This section sits on wooden posts and appears to have a wooden deck that wraps around the end of the filled area.

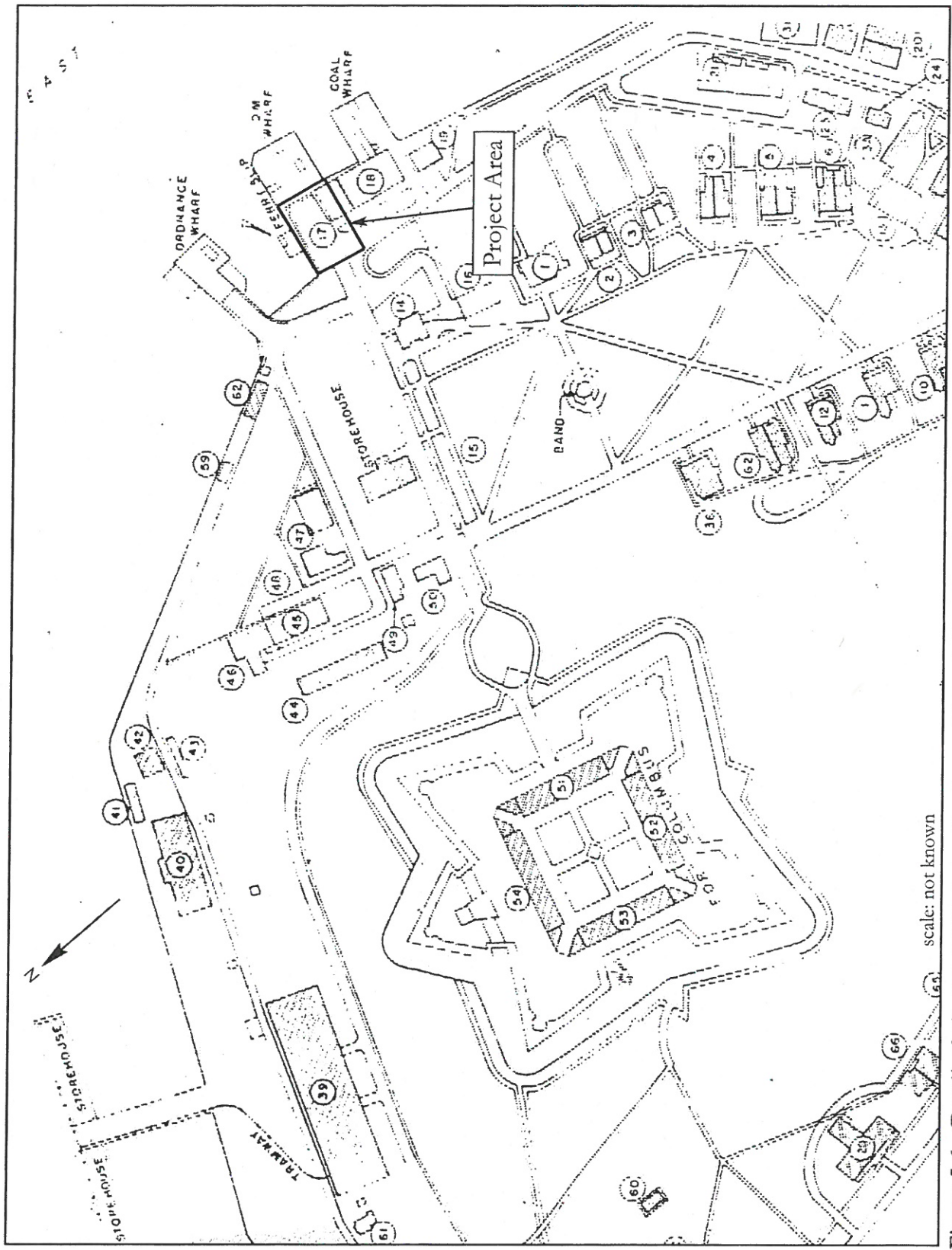

Figure 5-6. Detail of the First U.S. Army Engineers Map of Governors Island (1908) showing Quartermasters Wharf (source: Tompkins 1985:24).

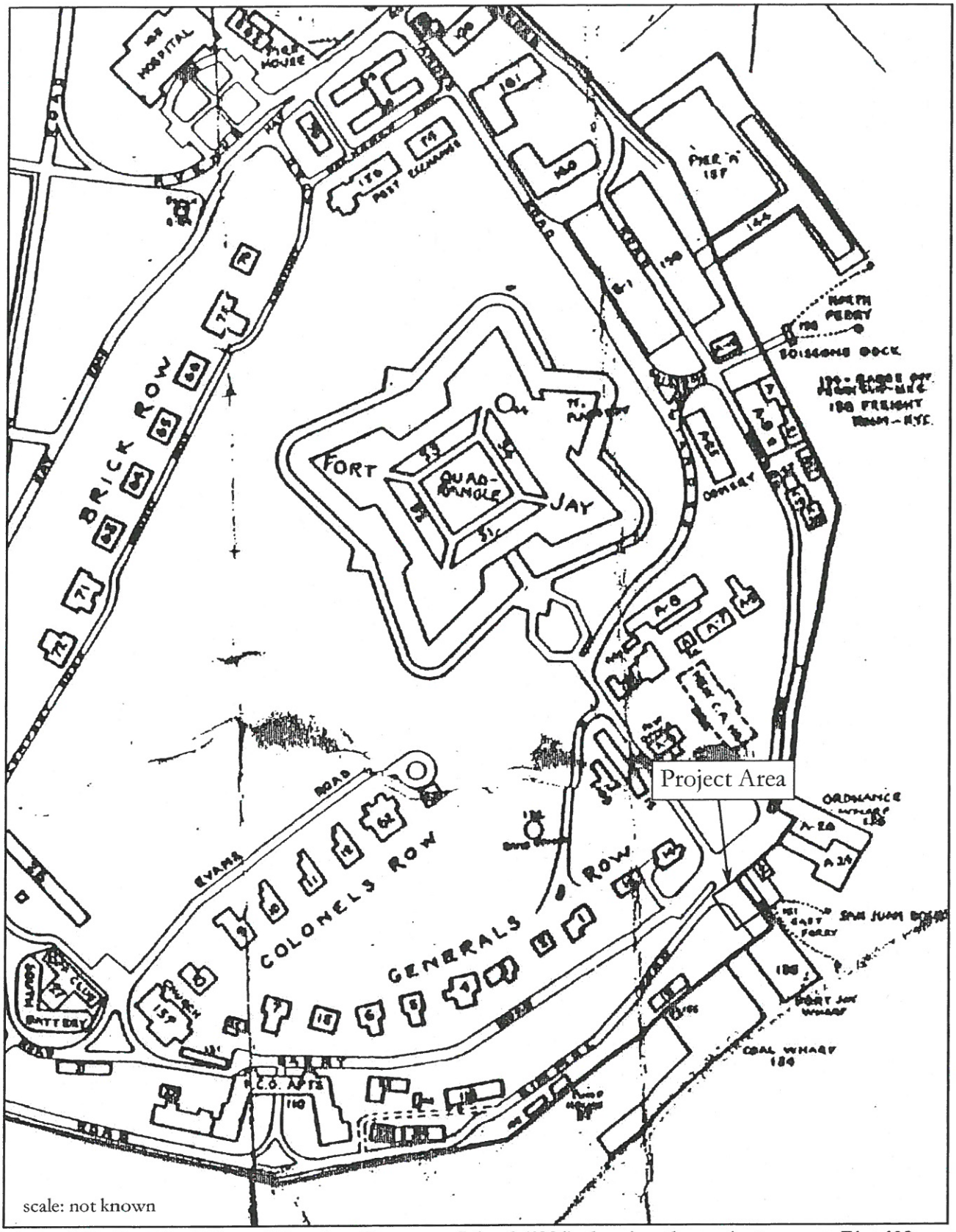

Figure 5-7. Detail of Map of Fort Jay, Governors Island (1934) showing the project area on Pier 102.

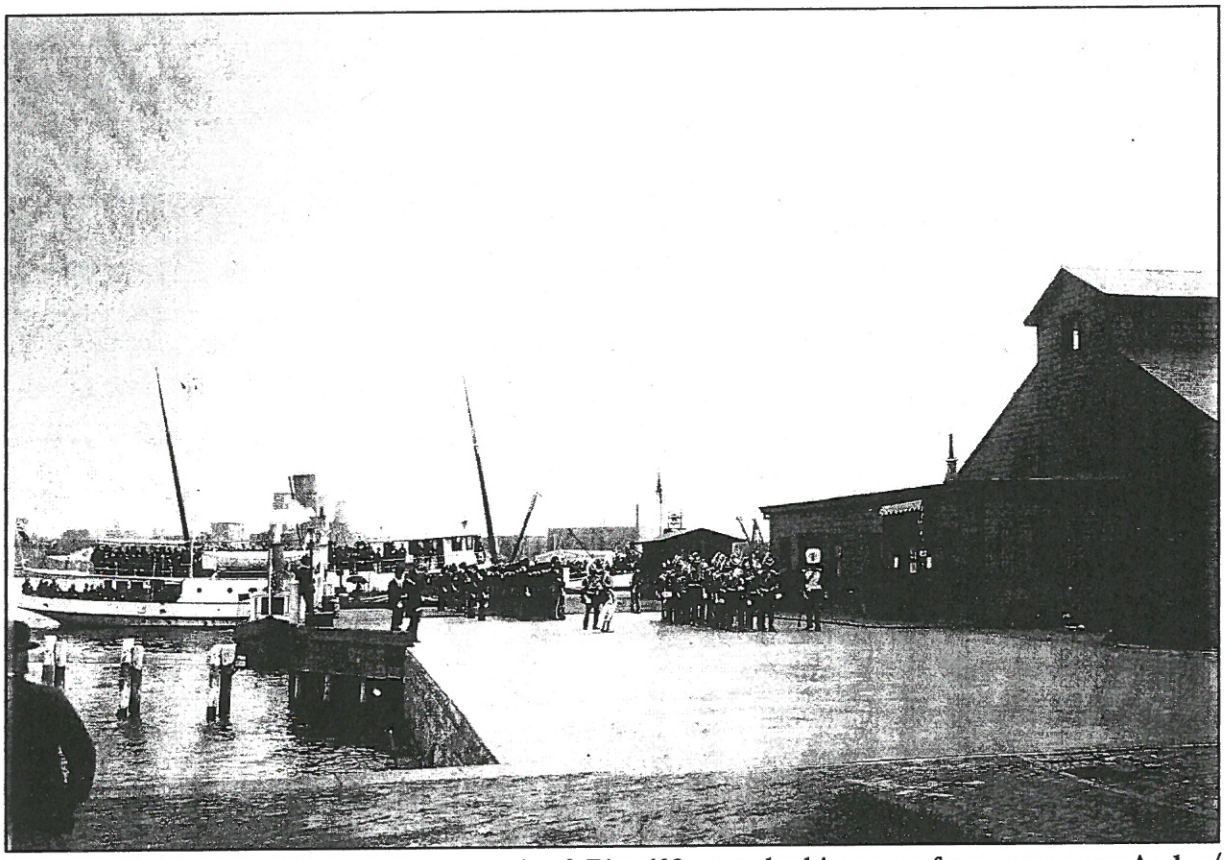

Figure 5-8. Undated historic photograph of Pier 102 area, looking east from area near Andes/ Kimmel Road intersection (source: NPS).

Two buildings sit along the eastern edge of the stone wall. The large wooden building in the foreground is presumably the Post Traders store depicted on the 1867 map. This structure may also encompass the warehouse depicted to the east of the store on the same map. The smaller building in the background and to the east of the store may be the boathouse shown on the 1867 map.

Results of the Fieldwork

The archeological fieldwork within the Pier 102 Rehabilitation project area began with a surface inspection of the project area and the demarcation of visible utilities and other modern disturbances. The walkover helped to identify the approximate location of a sewer line that crossed from the southwestern corner of the project area to the eastern edge.

The Scope of Work called for the placement of three .75-x-5-m trenches (MT-1, -2, and -3) within the paved parking area. The proposed trench locations were marked on the ground with spray and mapped relative to fixed points on the pier. The layout of the trenches was slightly altered in the field in consultation with William Griswold (COTR) to avoid the existing sewer utility. MT-3 was segmented into two units to the north and south of this modern utility. These two segments, designated as MT-3A (measuring .75-x-4 m) and MT-3B (measuring .75-x-1 m), together with MT-1 and MT-2 totaled the same excavation dimensions described in the Scope of Work. The subsurface testing also included the hand excavation of four units (EUs 1–4) within the machine-excavated trenches. Figure 5-9 shows the

location of all Phase IB testing units within the GOIS Pier 102 project area. Appendix A contains a listing of all cultural materials collected as part of the GOIS Pier 102 Phase IB survey.

The machine assisted-excavation began with the removal of an approximately 8-centimeter (cm) (3-inch) layer of asphalt from the surface of each trench within the paved project area (Figure 5-10). An approximately 20-cm layer (8-inch) of reinforced concrete was encountered directly below the asphalt in each of the trenches and was also removed mechanically.

Several distinct soil fill strata were identified below the concrete layer in all of the trenches at depths that were relatively consistent from one testing unit to the next. A gravel lens averaging 10 cm in thickness was present directly below the concrete in MT-2 and MT-3A and 3B but was not present in MT-1. This lens did not contain any soils or cultural materials and was likely laid as a base for the overlying concrete and was deposited at the same time the concrete was poured on the pier.

Fill 1 was the first soil lens encountered in the trenches and was present directly below the gravel lens in MT-2 and MT-3A and -3B and directly below the concrete in MT-1. This mottled dark yellow brown/yellow brown silty sand extended to an average depth of 60 cm below the ground surface (cmbs), although it extended to approximately 80 cmbs in MT-3A. Artifacts noted in the Fill 1 lens included nails, bottle glass, animal bone food waste, and ceramic sherds (Appendix A). The two temporally diagnostic materials collected from this fill lens consisted of a machine molded perfume bottle with a manufacture date range between 1880 and 1910 and a whiteware ceramic sherd with a maker's mark that could be dated to the period 1890-1906. The highly fragmented nature of the materials, and their visible surface wear suggested that this soil may have been obtained from a disturbed context and then redeposited within the project area.

Fill 2 was observed in MT-1, MT-2 and MT-3B directly below Fill 1 and extended to an average depth of 80 cmbs in these trenches. Fill 2 was not present within MT-3A. This fill lens contained a dark yellow brown to yellow brown loose sandy soil with small rocks and gravel. Materials noted within Fill 2 included coal, ash and heating by-products as well as highly fragmented domestic and structural materials. Fill 2 contained a higher density of artifacts than Fill 1 and a sample of temporally diagnostic materials collected from this stratum included brick, mortar and iron nail fragments; coal, ash and slag; shell and animal bone; whiteware and redware ceramic sherds, and a fragment of a stoneware drain pipe (Appendix A). Clay tobacco pipe fragments were also collected from this fill stratum and while the sample was too small for statistical evaluation, the pipe bore sizes suggested manufacture dates that spanned the second half of the eighteenth century. A wheat penny was also collected in Fill 2 between 80 and 90 centimeters below the ground surface (cmbs) within MT-2. Since these coins were only manufactured in the twentieth century, the presence of a single penny in Fill 2 together with earlier cultural materials suggests that this is a highly disturbed soil lens.

Wooden timbers were exposed in the floor of each trench at approximately 80 cmbs (see Figure 5-9). A single timber was partially exposed in each trench, and in each case the timber extended beyond the limits of the testing trench. The timbers in MT-2, MT-3A and MT-3B were oriented along a north/south axis while the timber in MT-1 was oriented along an east/west axis (Figure 5-11). Each wooden timber was squared and measured approximately 23 cm (9 inches) on a side. Each timber was dry and decomposition/decay of the outer surface was visible, making it difficult to identify any type of cut

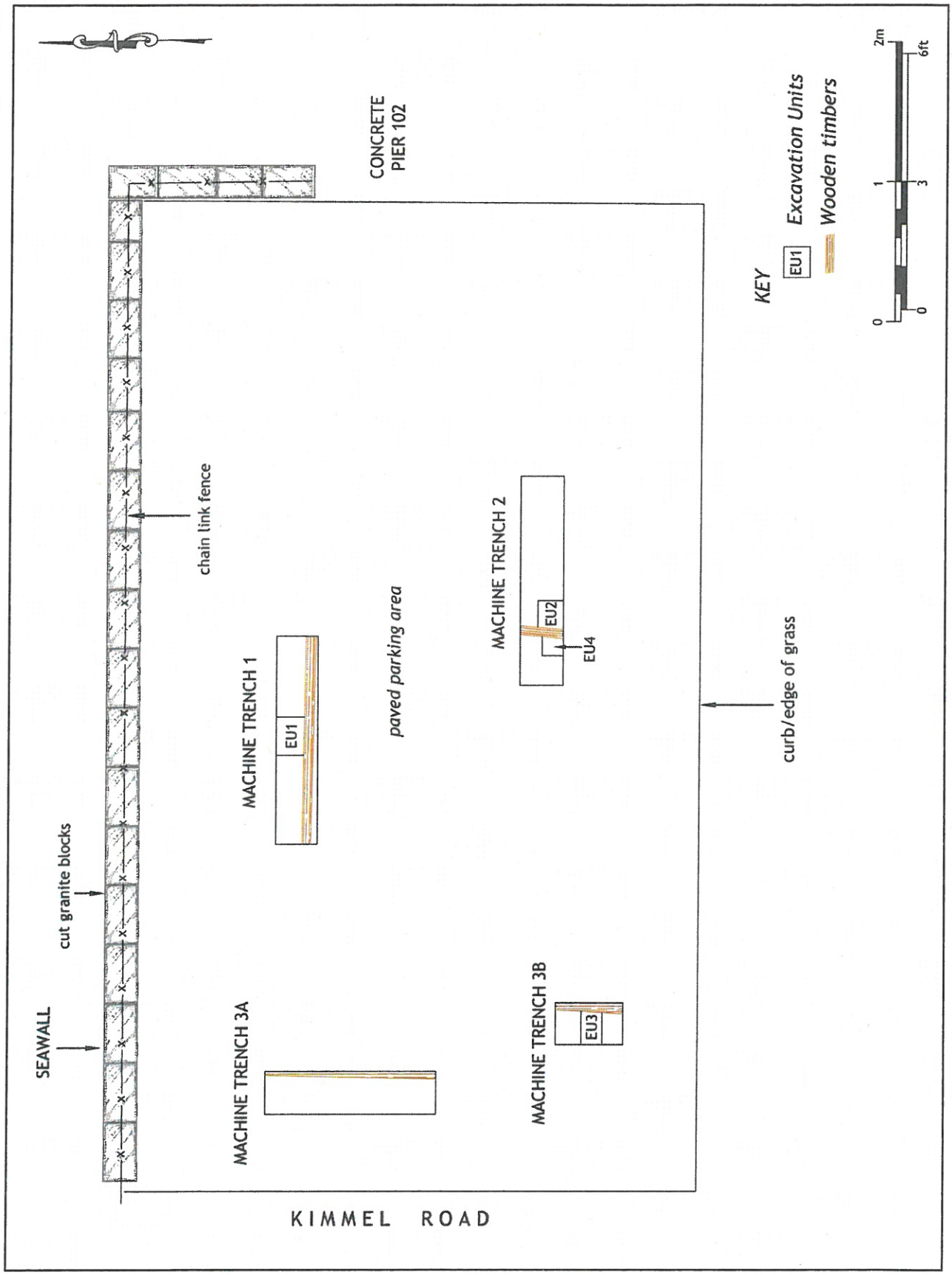

Figure 5-9. Plan of GOIS Pier 102 project area showing locations of machine trenches and identified features, Governors Island NY.

Figure 5-10. GOIS Pier 102 project area, looking north across paved parking area, GOIS Pier 102 Phase IB Survey.

Figure 5-11. Plan photo of MT-1 showing exposed timber, view west, GOIS Pier 102 Phase IB Survey.

marks or other cultural modifications to the wood. Two, one-inch square iron spikes were observed partially embedded in the upper surface of the timber in MT-1 and a similar spike was observed on the upper surface of the timber in MT-3B. The similarity in orientation and depth of each exposed timber suggested that each was an situ feature rather than part of the fill soils.

After consultation with the COTR, machine excavation below 80 cmbs was halted and each trench floor was planned, representative trench walls were profiled and photographs were taken of the partially exposed timbers. No other cultural features, artifact concentrations, or soil anomalies were noted above or in association with the timbers in any of the trenches.

Hand excavation was conducted in MT-1, MT-2, and MT-3B between 80 and 130 cmbs in order to collect additional information about the soils below 80 cmbs and to partially expose the timbers in profile (see Figure 5-9). Each EU was placed adjacent to a timber and in MT-1 and MT-3B the EU extended to the opposite trench wall. EUs 2 and 4 were placed to the west and east of the timber in MT-2 because that timber's orientation perpendicular to the trench allowed excavation to either side. Each EU was excavated to a depth of 130 cmbs, the maximum excavation limit determined for he project. All hand-excavated soils were removed in 10-cm levels and screened to recover cultural materials, which were present in low to moderate densities in each of the excavated soil strata. Representative samples of heating byproducts (coal, ash, slag) and unidentifiable iron fragments were collected within the EUs.

EU 1 (50-x-75 cm) in MT-1 was placed directly to the north of the timber in MT-1. EU 1 contained Fill 3, a reddish brown (5YR 3/3) soil beneath the timber that was similar in color and texture to Fill 2 but contained less rock and gravel (Figure 5-12). The cultural materials within Fill 3 in EU 1 between 90 and 118 cmbs included coal, fragment of an unglazed terra cotta pot, and a piece of window glass (Appendix A). Exposure of the timber in profile indicated that it was square in shape (9 inches on a side) and was placed atop soil rather than stacked on another timber (see Figure 5-11).

EUs 2 (75-x-75 cm) and 4 (50-x-50 cm) were placed to the east and west, respectively of the timber in MT-2 (see Figure 5-9). Both EUs contained the same soil profiles; an approximately 10 cm thick lens of coal ash overlying two additional fill soils (Fill 3 and 4). The approximately 12 cm-thick Fill 3 lens was a yellow- brown (10YR 5/4) coarse sand while the approximately 18 cm-thick Fill 4 consisted of a dark brown/black (10YR 2/1) coarse sand fill with pockets of coal ash (Figures 5-13 and 5-14). These two fill lens contained a high density of artifacts relative to the other excavated soils and the recovered assemblage was dominated by ceramic sherds (mostly whiteware) and molded bottle glass fragments. Lower densities of window glass, animal bone, coal, clay pipe fragments, and a single glass button were also collected from these fill levels in EUs 2 and 4. The similarity of the soils beneath and to either side of the single timber as well as the similarity in the artifact assemblages indicated that soil had been placed around and beneath the timber in one or two filling episodes.

EU 3 (75-x-75 cm) was located in MT-3B on the west side of the timber exposed in that unit. The wood was underlain by a soil that was very similar to the Fill 2 soil noted above the timber and in other portions of the project area (Figures 5-15 and 5-16). At approximately 110 cmbs, a thin (5 cm) lens of

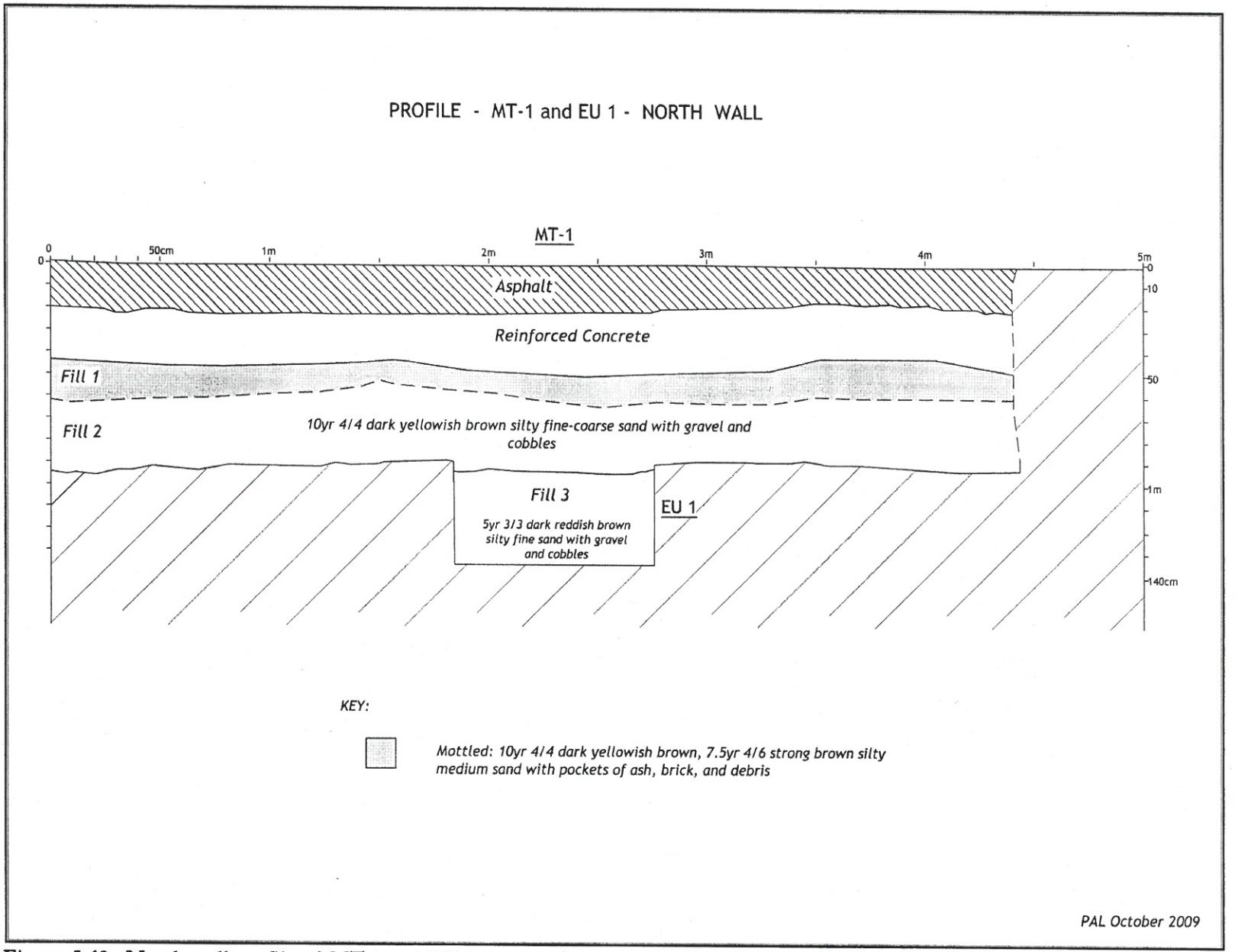

Figure 5-12. North wall profile of MT-1 and EU 1, 0 to 90 cmbs, GOIS Pier 102 Phase IB Survey.

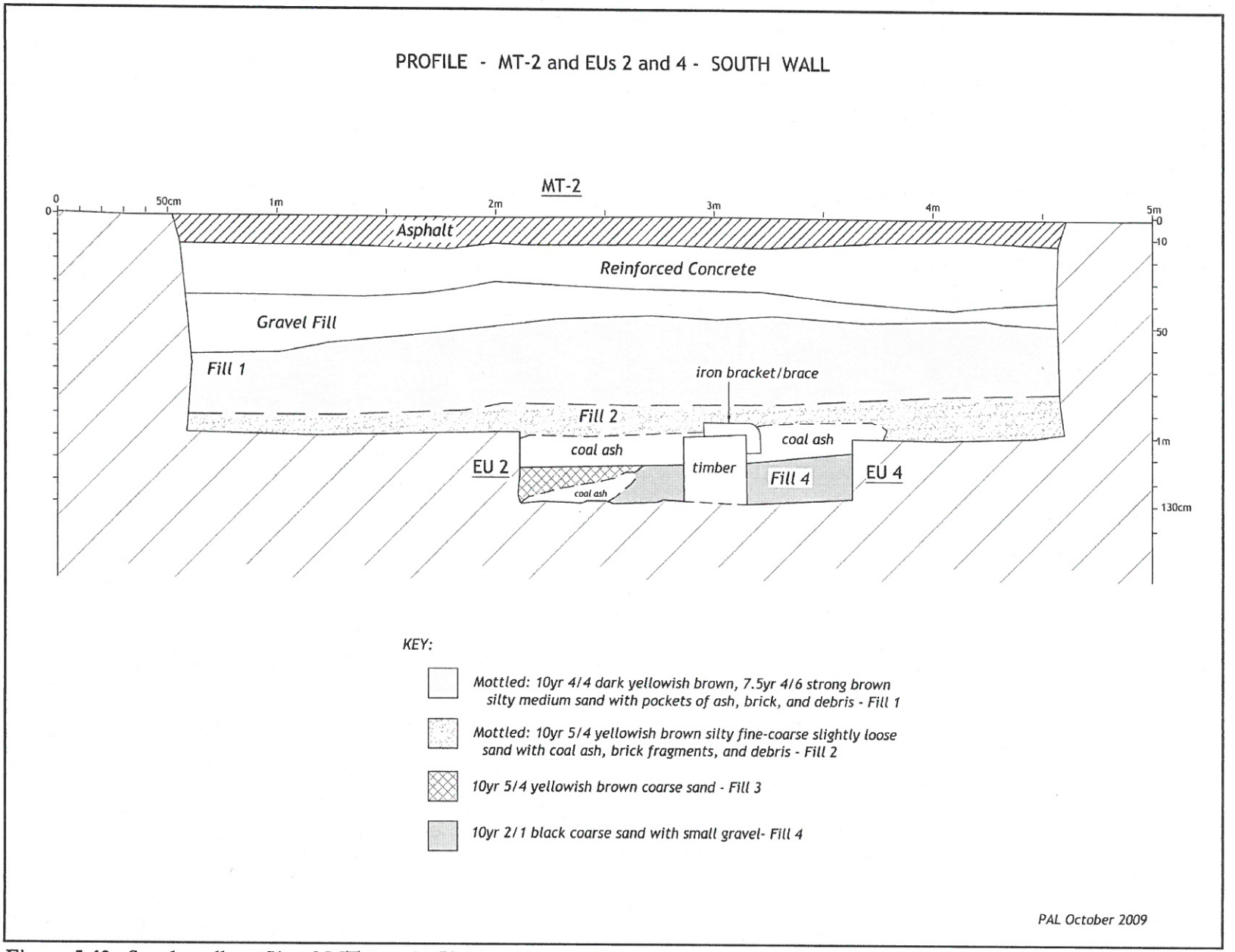

Figure 5-13. South wall profile of MT-2 and EUs 2 and 4, 0 to 120 cmbs, GOIS Pier 102 Phase IB Survey.

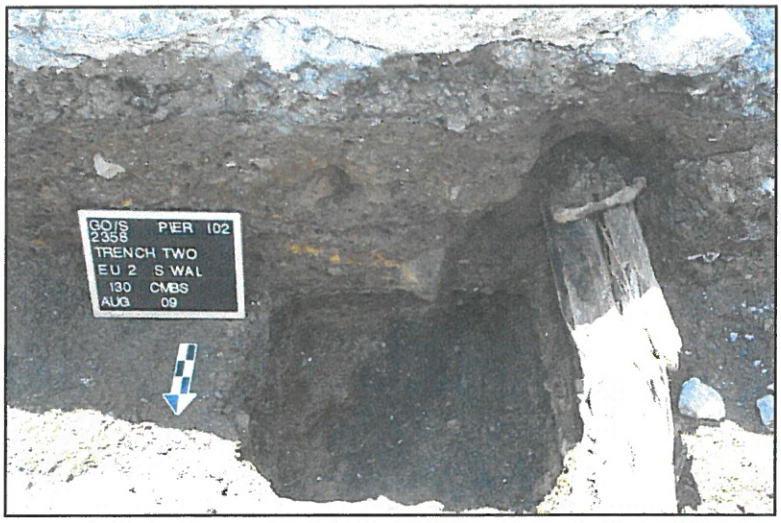

Figure 5-14. Photo of MT-2 and EU 2, view south, GOIS Pier 102 Phase IB Survey.

decomposed wood was identified in the EU floor. The integrity of the wood was extremely poor and excavation continued through it into a dark yellow brown (10YR 3/4) Fill 4 to the maximum excavation depth of 130 cmbs. The wood did not appear to represent an intact feature but this interpretation is tentative based on the small area exposed in EU 3. Cultural materials collected from Fill 2 in EU 3 included undecorated whiteware and red earthenware sherds, machine molded bottle glass fragments, brick and mortar fragments, one clay tobacco pipe stem, and one clay tobacco pipe bowl (Appendix A). Fill 4 contained undecorated whiteware and stoneware sherds, machine molded bottle glass fragments, and animal bone fragments.

No hand-excavated testing was completed within MT-3A; however the trench wall profile was recorded on a scaled drawing and photodocumented (Figures 5-15 and 5-16). The only cultural materials collected from the machine-excavated Fill 1 were two ceramic sherds (Appendix A).

Following completion of all project mapping and photodocumentation, each trench was backfilled with excavated soil and process gravel to replace the reinforced concrete and to provide a base for the asphalt patch.

Conclusions and Recommendations

Previously completed archival and documentary research had indicated the possible location of the circa 1879 Post Traders Site (ASMIS 00032) within the vicinity of the GOIS Pier 102 area. Prior to the survey, no maps, plans or photographs had been identified that depicted the exact location of the structure in relation to the present-day pier (Wright and Binzen 2003). Little was known about the structure(s) that were located on the pier, which first appears on the 1879 map of the island.

The additional cartographic documents reviewed as past of the Phase IB survey and the identification of a probable nineteenth century photograph provide a clearer picture about the historic development of the Pier 102 area. Based on this data, the earliest wharf or pier in this area was constructed sometime before 1813. The available map data indicate that some type of shoreline extension has been continuously present at this location to the present day, although it is unknown if elements of the original pier structure remain or if the pier was rebuilt or replaced over the past nearly 200 years. The Post Traders building is first identified on the 1879 map of the island and appears to have been removed sometime between

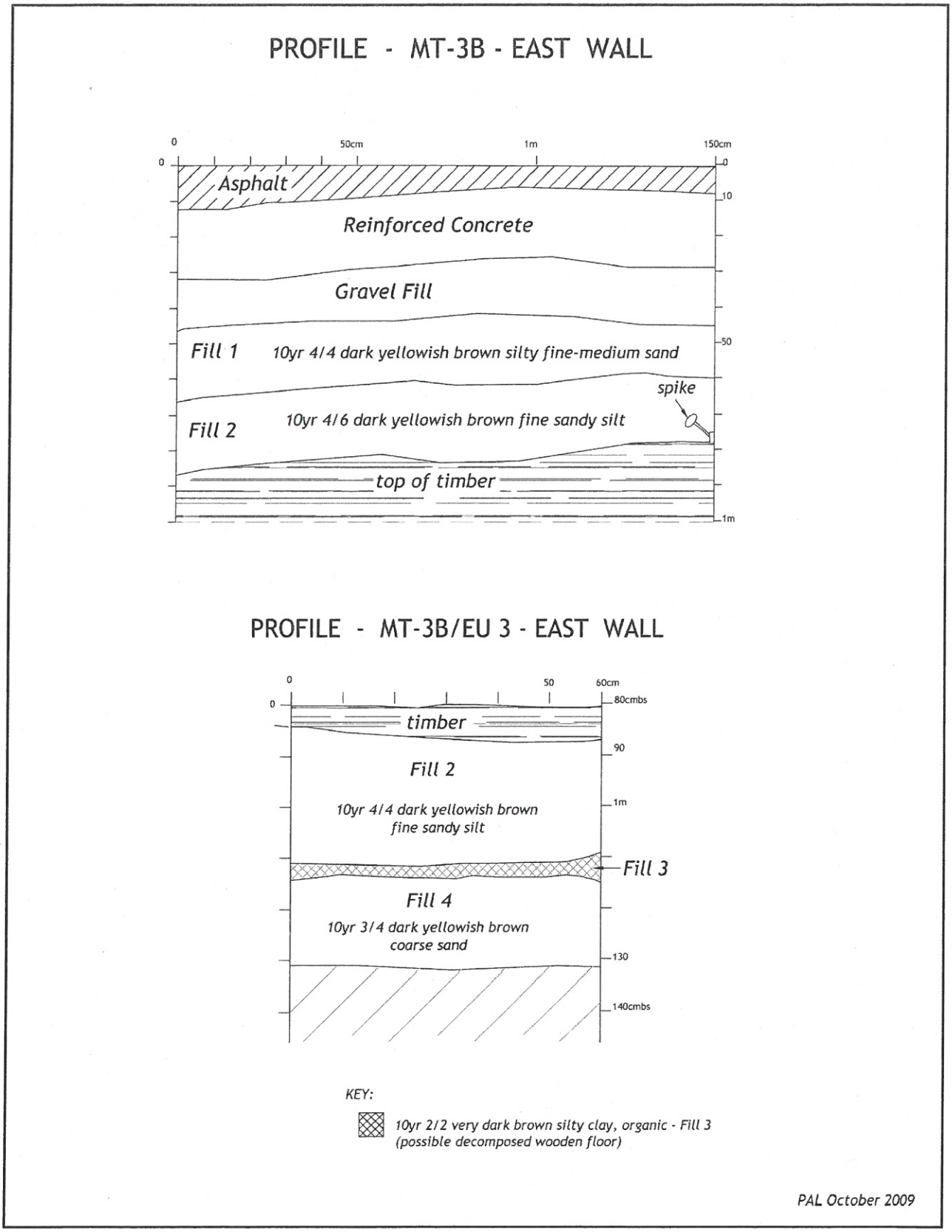

Figure 5-15. East wall profile of MT-3B and EU 3, 0 to 130 cmbs , GOIS Pier 102 Phase IB Survey.

1908 and 1934. Additional documentary and/or photographic sources may help to clarify the location(s) of buildings on the pier.

Unfortunately because no written documentation is available regarding the improvements to Pier 102, it is impossible to ascertain from maps alone when and what types of structural improvements were made throughout its history. The historic photograph reviewed during the survey indicates that the granite retaining wall likely dates to the late nineteenth century, but it may have been constructed much earlier.

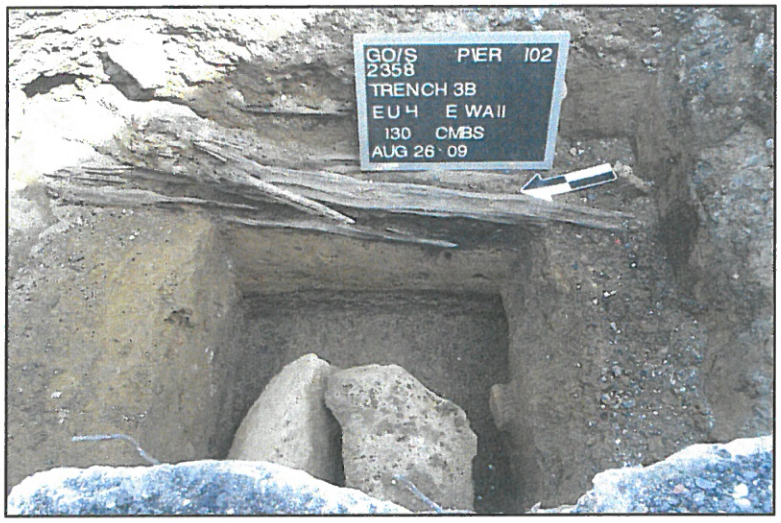

Figure 5-16. Photo of MT-3B and EU 3, view west, GOIS Pier 102 Phase IB Survey.

The archeological investigations identified four wooden timbers oriented along north/south and east/west lines within the existing pier footprint. The initial impression that these timbers may have represented footings or a sill for a building, possibly the store house, was rejected after the exposure of two closely spaced parallel timbers in MT-3A and -3B (see Figure 5-9). Instead, it appears that the timbers may represent interior cribbing associated with the construction and filling of the pier. The use of timber cribbing or pilings in nineteenth century wharf construction in New England and the Northeast has been documented at other archeological sites, including the Central and Derby Wharves in Salem (Donta et al. 1998; Garman et al. 1998). This technique utilized wooden timbers or beams to create a framework within the wharf or pier footprint around which stones and/or soil were filled to create a solid mass.

At Pier 102, the timbers exposed in the machine trenches may have served as internal dividers and/or braces within the stone seawall perimeter. Large stones were not located in the trenches to the limit of excavation (130 cmbs) so it appears that at least the upper portions of the pier were filled with soil. Based on the cultural materials located with the excavated soils (highly fragmented domestic debris and limited construction materials), the soil used to fill the pier were likely collected from other sections of the island or possibly even from an off-island location (a common land-making practice in other sections of the island).

The timbers identified in the project area represent what appears to be an intact construction level within the historic Pier 102 and represent potentially significant archeological deposits. These timbers and the fill soils below them could document the original construction of Pier 102 sometime in the early nineteenth century and/or any subsequent modifications to the structure.

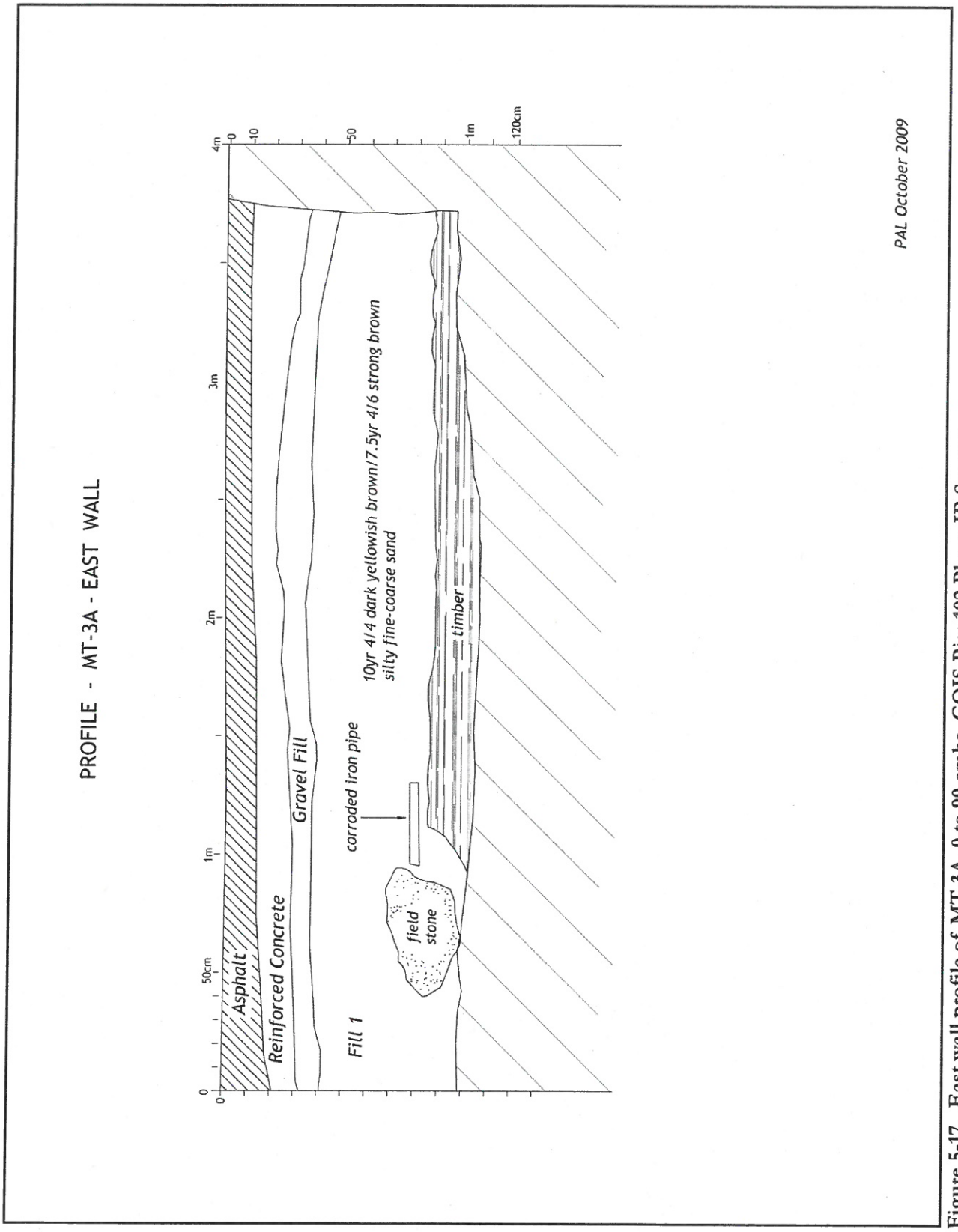

Figure 5-17. East wall profile of MT-3A, 0 to 90 cmbs, GOIS Pier 102 Phase IB Survey.

Figure 5-18. Photo of east wall profile in MT-3A, GOIS Pier 102 Phase IB Survey.

The Phase IB survey identified archeological deposits at a minimum depth of 80 cmbs (32 inches). It is recommended that any ground disturbance or construction impacts within the project area be limited to a depth of no more than 2 feet (61 cmbs) in order to avoid the potentially significant archeological deposits. If avoidance is not prudent or feasible, additional archeological investigations at the Phase II level are recommended.

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Appendix A

CATALOG OF CULTURAL MATERIAL

Site	Provenience	Catalog Number	Object Name	Material and Object Description	Count
GOVERNORS ISLAND PIER 102					
	MT-01, 40-80CMBS (FILL 2)				
		GOIS 501	STRUCTURAL MATERIAL	STONEWARE DRAIN PIPE	1
		GOIS 502	BODY SHERD, BOTTLE	GLASS INDETERMINATE DARK OLIVE	1
		GOIS 503	NECK SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED AQUA TINT	1
		GOIS 504	WINDOWPANE FRAGMENT	GLASS INDETERMINATE AQUA TINT	3
		GOIS 505	NAIL	IRON INDETERMINATE	1
				MT-01, 40-80CMBS (FILL 2)	*7.00*
	MT-01, 80-90CMBS (FILL 2)				
		GOIS 506	STRUCTURAL MATERIAL	CONCRETE POSSIBLE BUILDING STONE OR MARKER INDETERMINATE MAKERS MARK (...ER...TON...K)	1
				MT-01, 80-90CMBS (FILL 2)	*1.00*
	MT-01, EU-01, 088-091CMBS (FILL 2)				
		GOIS 507	STRUCTURAL MATERIAL	EARTHENWARE BRICK	1
		GOIS 508	SLAG	SLAG SLAG	1
		GOIS 509	ASH	ASH ASH	1
		GOIS 510	SPECIMEN (UNWORKED)	SHELL BIVALVE MERCENARIA	1
				MT-01, EU-01, 088-091CMBS (FILL 2)	*4.00*
	MT-01, EU-01, 090-108CMBS (FILL 3)				
		GOIS 511	BODY SHERD, FLOWERPOT	CERAMIC TERRA COTTA UNDECORATED	1
				MT-01, EU-01, 090-108CMBS (FILL 3)	*1.00*
	MT-01, EU-01, 108-118CMBS (FILL 3)				
		GOIS 512	WINDOWPANE FRAGMENT	GLASS INDETERMINATE AQUA TINT	1
		GOIS 513	COAL	COAL COAL	1
				MT-01, EU-01, 108-118CMBS (FILL 3)	*2.00*
	MT-02, 50-60CMBS (FILL 1)				
		GOIS 514	WHOLE VESSEL, BOTTLE	GLASS MOLDED CONTACT MOLDED, MACHINE-MADE MANUFACTURE CONTINUOUS THREAD EMBOSSED BODY ("RICKSECKER PERFUMER NEW YORK"),	1
		GOIS 515	NAIL	IRON INDETERMINATE	1
		GOIS 516	SPECIMEN (UNWORKED)	BONE MAMMAL DIAGNOSTIC RIB	1
		GOIS 517	SPECIMEN (UNWORKED)	BONE BIRD DIAGNOSTIC LONG BONE	1
				MT-02, 50-60CMBS (FILL 1)	*4.00*
	MT-02, 80-90CMBS (FILL 2)				
		GOIS 518	TOBACCO PIPE	CERAMIC BOWL AND STEM FRAGMENT, 4/64THS BORE MOLDED FACE, SLIP DECORATION (RED AND YELLOW) WHITE CLAY	1
		GOIS 519	BASAL SHERD, BOTTLE	GLASS MOLDED INDETERMINATE AQUA TINT, PONTIL MARK (OPEN PONTIL)	1
		GOIS 520	WINDOWPANE FRAGMENT	GLASS INDETERMINATE AQUA TINT	1

Site	Provenience	Catalog Number	Object Name	Material and Object Description	Count
		GOIS 521	COIN	COPPER ALLOY PENNY, UNITED STATES OBVERSE, INDIAN HEAD, "UNITED STATES OF AMERICA," REVERSE, WHEAT, "ONE CENT"	1
		GOIS 522	SLAG	SLAG SLAG	1
		GOIS 523	SPECIMEN (UNWORKED)	BONE MAMMAL DIAGNOSTIC SCAPULA	2
		GOIS 524	SPECIMEN (UNWORKED)	BONE MAMMAL DIAGNOSTIC CALCANEOUS	1
				MT-02, 80-90CMBS (FILL 2)	*8.00*
	MT-02, EU-02, 100-110CMBS (FILL 2)				
		GOIS 525	BODY SHERD,	EARTHENWARE WHITEWARE PLAIN	3
		GOIS 526	TOBACCO PIPE	CERAMIC STEM, 5/64THS BORE DIAMETER MOLDED WHITE CLAY	1
		GOIS 527	STRUCTURAL MATERIAL	EARTHENWARE POSSIBLE BRICK OR TILE TAN SLIP	1
		GOIS 528	LIP SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED APPLIED LIP DARK OLIVE	1
		GOIS 529	ASH	ASH ASH	1
		GOIS 530	SPECIMEN (UNWORKED)	BONE MAMMAL UNDIAGNOSTIC	4
				MT-02, EU-02, 100-110CMBS (FILL 2)	*11.00*
	MT-02, EU-02, 110-120CMBS (FILL 3)				
		GOIS 531	BODY SHERD,	EARTHENWARE WHEILDON WARE	1
		GOIS 532	BODY SHERD,	EARTHENWARE WHITEWARE PLAIN	1
		GOIS 533	BASAL SHERD,	EARTHENWARE WHITEWARE PLAIN	4
		GOIS 534	BODY SHERD,	EARTHENWARE WHITEWARE TRANSFER-PRINTED, GREEN	1
		GOIS 535	RIM SHERD, INDETERMINATE	EARTHENWARE WHITEWARE ANNULAR	1
		GOIS 536	BODY SHERD,	EARTHENWARE ROCKINGHAM/BENNINGTON	1
		GOIS 537	RIM SHERD, BOWL	EARTHENWARE YELLOWARE ANNULAR	1
		GOIS 538	BODY SHERD,	EARTHENWARE UNIDENTIFIED WHITE BODIED EARTHENWARE PLAIN	2
		GOIS 539	BASAL SHERD,	EARTHENWARE UNIDENTIFIED BUFF BODIED EARTHENWARE INTERIOR, BROWN SLIP, EXTERIOR, GREY/BLUE SLIP	1
		GOIS 540	TOBACCO PIPE	CERAMIC STEM, 5/64THS BORE DIAMETER WHITE CLAY	1
		GOIS 541	BODY SHERD,	GLASS MOLDED CONTACT MOLDED OLIVE	5
		GOIS 542	BODY SHERD,	GLASS MOLDED CONTACT MOLDED COLORLESS	3
		GOIS 543	WINDOWPANE FRAGMENT	GLASS INDETERMINATE COLORLESS	2
		GOIS 544	NAIL	IRON INDETERMINATE	2
		GOIS 545	UNWORKED STONE	CHERT RAW MATERIAL SAMPLE HEAT ALTERED (1)	2
		GOIS 546	COAL	COAL COAL	3
				MT-02, EU-02, 110-120CMBS (FILL 3)	*31.00*
	MT-02, EU-02, 120-130CMBS (FILL 3)				
		GOIS 547	BODY SHERD,	EARTHENWARE WHITEWARE PLAIN	2
		GOIS 548	RIM SHERD, INDETERMINATE	EARTHENWARE WHITEWARE PLAIN	1
		GOIS 549	BASAL SHERD,	EARTHENWARE WHITEWARE PLAIN	1
		GOIS 550	BODY SHERD,	STONEWARE DOMESTIC STONEWARE INTERIOR, ALBANY SLIP, EXTERIOR, SALT GLAZE	1

Site	Provenience	Catalog Number	Object Name	Material and Object Description	Count
		GOIS 551	TOBACCO PIPE	CERAMIC BOWL WHITE CLAY	1
		GOIS 552	TOBACCO PIPE	CERAMIC STEM, 5/64THS BORE DIAMETER WHITE CLAY	1
		GOIS 553	BODY SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED OLIVE	2
		GOIS 554	BODY SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED AQUA	1
		GOIS 555	BODY SHERD,	GLASS MOLDED CONTACT MOLDED COLORLESS	1
		GOIS 556	WINDOWPANE FRAGMENT	GLASS INDETERMINATE COLORLESS	1
		GOIS 557	BUTTON	GLASS MOLDED 4 HOLES WHITE	1
		GOIS 558	INDETERMINATE METAL	IRON ROUND FLAT METAL DISC	1
		GOIS 559	CHARCOAL	CHARCOAL CHARCOAL SAMPLE	0
		GOIS 560	SPECIMEN (UNWORKED)	BONE MAMMAL DIAGNOSTIC PHALANGE	1
		GOIS 561	SPECIMEN (UNWORKED)	TOOTH MAMMAL DIAGNOSTIC CANINE	1
				MT-02, EU-02, 120-130CMBS (FILL 3)	*16.00*
	MT-02, EU-02, 120-130CMBS (FILL 4)				
		GOIS 562	BASAL SHERD,	EARTHENWARE PEARLWARE HANDPAINTED, BLUE	1
		GOIS 563	BODY SHERD,	EARTHENWARE WHITEWARE PLAIN	5
		GOIS 564	RIM SHERD, INDETERMINATE	EARTHENWARE WHITEWARE PLAIN	2
		GOIS 565	BODY SHERD,	EARTHENWARE WHITEWARE HANDPAINTED, BLUE	1
		GOIS 566	BASAL SHERD,	EARTHENWARE WHITEWARE (PORCELANEOUS) PLAIN	1
		GOIS 567	BASAL SHERD,	EARTHENWARE WHITEWARE (PORCELANEOUS) HANDPAINTED, BLUE	1
		GOIS 568	BODY SHERD,	EARTHENWARE UNIDENTIFIED BUFF BODIED EARTHENWARE BROWN GLAZE INTERIOR AND EXTERIOR	1
		GOIS 569	NECK/RIM SHERD, BOTTLE	STONEWARE DOMESTIC STONEWARE INTERIOR, ALBANY SLIP, EXTERIOR SALT GLAZE	1
		GOIS 570	TOBACCO PIPE	CERAMIC STEM, 6/64THS BORE DIAMETER	1
		GOIS 571	BASAL SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED DARK OLIVE, PONTIL MARK (BARE IRON PONTIL)	1
		GOIS 572	BODY SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED GREEN TINT	1
		GOIS 573	BODY SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED AMBER	1
		GOIS 574	BODY SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED OLIVE	5
		GOIS 575	BODY SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED AQUA	1
		GOIS 576	NECK SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED AQUA TINT	1
		GOIS 577	WINDOWPANE FRAGMENT	GLASS INDETERMINATE AQUA TINT	1
		GOIS 578	WINDOWPANE FRAGMENT	GLASS INDETERMINATE COLORLESS	1
		GOIS 579	UNWORKED STONE	FLINT RAW MATERIAL COBBLE FRAGMENT	1
		GOIS 580	SLAG	SLAG SLAG	2
		GOIS 581	SPECIMEN (UNWORKED)	BONE MAMMAL DIAGNOSTIC RIB	1
		GOIS 582	SPECIMEN (UNWORKED)	BONE MAMMAL DIAGNOSTIC	1
		GOIS 583	SPECIMEN (UNWORKED)	BONE BIRD DIAGNOSTIC	2
				MT-02, EU-02, 120-130CMBS (FILL 4)	*33.00*

Site	Provenience	Catalog Number	Object Name	Material and Object Description	Count
	MT-02, EU-04, 074-084CMBS (FILL 2)				
		GOIS 584	STRUCTURAL MATERIAL	EARTHENWARE BRICK	1
		GOIS 585	MORTAR	MORTAR MORTAR	1
				MT-02, EU-04, 074-084CMBS (FILL 2)	*2.00*
	MT-02, EU-04, 084-094CMBS (FILL 2)				
		GOIS 586	STRUCTURAL MATERIAL	EARTHENWARE BRICK	1
		GOIS 587	BODY SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED OLIVE/AMBER	1
		GOIS 588	INDETERMINATE METAL	FERROUS INDETERMINATE RUSTY METAL CHUNK	1
		GOIS 589	STRUCTURAL MATERIAL	MORTAR MORTAR	1
		GOIS 590	COAL	COAL COAL	1
				MT-02, EU-04, 084-094CMBS (FILL 2)	*5.00*
	MT-02, EU-04, 094-104CMBS (FILL 2)				
		GOIS 591	STRUCTURAL MATERIAL	EARTHENWARE BRICK	1
		GOIS 592	BODY SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED OLIVE/AMBER	1
		GOIS 593	NAIL	IRON INDETERMINATE	1
		GOIS 594	INDETERMINATE METAL	FERROUS INDETERMINATE RUSTY METAL CHUNK	1
		GOIS 595	STRUCTURAL MATERIAL	MORTAR MORTAR	1
		GOIS 596	COAL	COAL COAL	1
				MT-02, EU-04, 094-104CMBS (FILL 2)	*6.00*
	MT-02, EU-04,094-104CMBS (FILL 2)				
		GOIS 597	SLAG	SLAG SLAG	1
				MT-02, EU-04,094-104CMBS (FILL 2)	*1.00*
	MT-02, EU-04, 104-106CMBS (FILL 3)				
		GOIS 598	STRUCTURAL MATERIAL	WOOD --IRON WOOD WITH WIRE NAIL ATTACHED	2
				MT-02, EU-04, 104-106CMBS (FILL 3)	*2.00*
	MT-02, EU-04, 106-114CMBS (FILL 4)				
		GOIS 599	BODY SHERD,	EARTHENWARE WHITEWARE PLAIN	2
		GOIS 600	RIM SHERD, INDETERMINATE	EARTHENWARE WHITEWARE PLAIN	1
		GOIS 601	BODY SHERD,	GLASS MOLDED CONTACT MOLDED AQUA TINT	2
		GOIS 602	BODY SHERD,	GLASS MOLDED CONTACT MOLDED COLORLESS	2
		GOIS 603	BODY SHERD,	GLASS MOLDED CONTACT MOLDED AMBER	1
		GOIS 604	WINDOWPANE FRAGMENT	GLASS INDETERMINATE AQUA TINT	3
		GOIS 605	BUTTON	GLASS MOLDED 4 HOLES WHITE	1
		GOIS 606	NAIL	IRON INDETERMINATE	2
		GOIS 607	CHARCOAL	CHARCOAL CHARCOAL	1
		GOIS 608	SPECIMEN (UNWORKED)	SHELL BIVALVE CRASSOSTREA VIRGINICA	2
		GOIS 609	SPECIMEN (UNWORKED)	TOOTH MAMMAL DIAGNOSTIC TOOTH	1
				MT-02, EU-04, 106-114CMBS (FILL 4)	*18.00*

Site	Provenience	Catalog Number	Object Name	Material and Object Description	Count
MT-02, EU-04, 114-124CMBS (FILL 4)					
	GOIS	610	BODY SHERD,	EARTHENWARE WHITEWARE PLAIN	2
	GOIS	611	RIM SHERD, INDETERMINATE	EARTHENWARE WHITEWARE PLAIN	1
	GOIS	612	STRUCTURAL MATERIAL	CERAMIC BRICK	1
	GOIS	613	BODY SHERD,	GLASS MOLDED CONTACT MOLDED OLIVE	3
	GOIS	614	BODY SHERD,	GLASS MOLDED CONTACT MOLDED AQUA TINT	1
	GOIS	615	WINDOWPANE FRAGMENT	GLASS INDETERMINATE AQUA TINT	3
	GOIS	616	WINDOWPANE FRAGMENT	GLASS INDETERMINATE COLORLESS	1
	GOIS	617	NAIL	IRON INDETERMINATE	2
	GOIS	618	STRUCTURAL MATERIAL	MORTAR MORTAR	1
	GOIS	619	COAL	COAL COAL	1
	GOIS	620	SLAG	SLAG SLAG	1
	GOIS	621	ASH	ASH ASH	1
	GOIS	622	SPECIMEN (UNWORKED)	SHELL BIVALVE MERCENARIA	1
				MT-02, EU-04, 114-124CMBS (FILL 4)	*19.00*
MT-03A, 40-50CMBS (FILL 1)					
	GOIS	623	RIM SHERD, INDETERMINATE	STONEWARE DOMESTIC STONEWARE INTERIOR, ALBANY SLIP, EXTERIOR, SALT GLAZE	1
				MT-03A, 40-50CMBS (FILL 1)	*1.00*
MT-03A, 90-90CMBS (FILL 1)					
	GOIS	624	PARTIAL VESSEL, PLATE	EARTHENWARE WHITEWARE PLAIN MEND MAKER'S MARK (1)	2
				MT-03A, 90-90CMBS (FILL 1)	*2.00*
MT-03B, EU-03, 100-110CMBS (FILL 2)					
	GOIS	625	BODY SHERD,	EARTHENWARE REDWARE LEAD GLAZED 2 SURFACES	1
	GOIS	626	BODY SHERD,	EARTHENWARE WHITEWARE PLAIN	4
	GOIS	627	RIM SHERD, INDETERMINATE	EARTHENWARE WHITEWARE PLAIN	1
	GOIS	628	BASAL SHERD,	EARTHENWARE WHITEWARE PLAIN	1
	GOIS	629	TOBACCO PIPE	CERAMIC BOWL MOLDED WHITE CLAY	1
	GOIS	630	TOBACCO PIPE	CERAMIC STEM, 4/64THS BORE DIAMETER MOLDED WHITE CLAY	1
	GOIS	631	NECK/RIM SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED LIPPING TOOL FINISH AQUA TINT	1
	GOIS	632	BODY SHERD,	GLASS MOLDED CONTACT MOLDED AQUA TINT	1
	GOIS	633	BODY SHERD,	GLASS MOLDED CONTACT MOLDED OLIVE	2
	GOIS	634	INDETERMINATE METAL	LEAD POSSIBLE LEAD/PEWTER CAP-LIKE OBJECT	1
	GOIS	635	STRUCTURAL MATERIAL	MORTAR MORTAR	1
	GOIS	636	SPECIMEN (UNWORKED)	BONE MAMMAL DIAGNOSTIC	2
				MT-03B, EU-03, 100-110CMBS (FILL 2)	*17.00*
MT-03B, EU-03, 110-120CMBS (FILL 4)					
	GOIS	637	BODY SHERD,	EARTHENWARE JACKFIELD-TYPE	1
	GOIS	638	BODY SHERD,	EARTHENWARE WHITEWARE PLAIN	5

Site	Provenience	Catalog Number	Object Name	Material and Object Description	Count
		GOIS 639	PARTIAL VESSEL, JUG	STONEWARE DOMESTIC STONEWARE INTERIOR, ALBANY SLIP, EXTERIOR, SALT GLAZE	1
		GOIS 640	TOBACCO PIPE	CERAMIC BOWL MOLDED WHITE CLAY	1
		GOIS 641	TOBACCO PIPE	CERAMIC STEM, 5/64THS BORE DIAMETER MOLDED WHITE CLAY	1
		GOIS 642	BODY SHERD,	GLASS MOLDED CONTACT MOLDED AQUA TINT	2
		GOIS 643	BODY SHERD,	GLASS MOLDED CONTACT MOLDED OLIVE	1
		GOIS 644	INDETERMINATE METAL	COPPER SMALL FLAT COPPER STRIP	1
		GOIS 645	FOOD REMAINS	BONE MAMMAL UNDIAGNOSTIC LONG BONE, BUTCHER MARKS (SAWN)	2
		GOIS 646	SPECIMEN (UNWORKED)	BONE MAMMAL DIAGNOSTIC RIB	1
		GOIS 647	SPECIMEN (UNWORKED)	BONE MAMMAL DIAGNOSTIC VERTEBRA	2
		GOIS 648	SPECIMEN (UNWORKED)	BONE MAMMAL DIAGNOSTIC	1
		GOIS 649	SPECIMEN (UNWORKED)	BONE MAMMAL UNDIAGNOSTIC CALCINED	1
				MT-03B, EU-03, 110-120CMBS (FILL 4)	*20.00*
	MT-03B, EU-03, 120-130CMBS (FILL 4)				
		GOIS 650	BODY SHERD,	STONEWARE DOMESTIC STONEWARE INTERIOR, ALBANY SLIP, EXTERIOR SALT GLAZE	1
		GOIS 651	BASAL SHERD, BOTTLE	GLASS MOLDED CONTACT MOLDED OLIVE	1
		GOIS 652	BODY SHERD,	GLASS MOLDED CONTACT MOLDED OLIVE	2
		GOIS 653	BODY SHERD,	GLASS MOLDED CONTACT MOLDED AQUA TINT	3
		GOIS 654	FOOD REMAINS	BONE MAMMAL DIAGNOSTIC RIB, BUTCHER MARKS (INDETERMINATE)	1
		GOIS 655	SPECIMEN (UNWORKED)	TOOTH MAMMAL DIAGNOSTIC TOOTH	1
				MT-03B, EU-03, 120-130CMBS (FILL 4)	*9.00*
				GOVERNORS ISLAND PIER 102	**220.00**

Appendix B

ARCHAEOLOGICAL SITE FORMS

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

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

Bernadette Castro
Commissioner

For Office Use Only -- Site Identifier

Project Identifie NPS GOIS Pier 102 Rehabilitation Date 10/20/2009

Your Name Holly Herbster Phone _____
Address _____

Organization (if any) _____

1. SITE IDENTIFIER(S Pier 102 Site
2. COUNTY New York One of the following: CITY New York
TOWNSHIP _____
INCORPORATED VILLAGE _____
UNICORPORATED VILLAGE _____

3. PRESENT OWNER National Park Service
Address

4. SITE DESCRIPTION (check all appropriate categories):
Structure/site

Superstructure: complete ___ partial ___ collapsed ___ not evident X
Foundation: above ___ below ___ (ground level) not evident ___
X Structural subdivisions apparent ___ Only surface traces visible
X Buried traces detected
List construction materials
Wooden timbers, possibly forming internal cribbing or structural support for pier.

Grounds

___ Under cultivation ___ Sustaining erosion ___ Woodland ___ Upland
___ Never cultivated ___ Previously cultivated ___ Floodplain ___ Pastureland
Soil Drainage: excellent ___ good ___ fair ___ poor ___
Distance to nearest water from structure (approx.) adjacent
Elevation: _____

5. SITE INVESTIGATION (append additional sheets, if necessary)
Surface--date(s) _____ Site map (submit with form*
Collection _____
Subsurface--date(s)
Testing: shovel ___ coring ___ other X unit size 5 m- x- x .75 m
no units 3 (Submit plan of units with form*)
Excavation: unit size .75- x- .75 m no units 4
(Submit plan of units with form*)
* Submission should be 8 1/2" by 11", if feasible

Investigator Holly Herbster

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

Present repository of materials NPS

6. SITE INVENTORY

a. Date constructed or occupation period possibly circa 1813 through present

b. Previous owners, if known U. S. Army, U.S. Coast Guard

c. Modifications, if known unknown construction sequence

(append additional sheets, if necessary)

7. SITE DOCUMENTATION (append additional sheets, if necessary):

a. Historic map references

1) Name Mangin Date 1813 Source Tompkins 1985

Present location of original, if known

2) Name Buildings & Utilities Date 1879 Source Tompkins 1985

Present location of original, if known

b. Representatation in existing photography

1) Photo date 00/00/00 Where located NPS GOIS Archives (undated photo)

2) Photo date Where located

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

Tompkins, Sally Kress (editor)
1985 Historic Structures Inventory, Governors Island, New York. Submitted to the Third Coast Guard District, Governors Island by the Historic American Buildings Survey/Historic American Engineering Record, National Park Service, Washington, D.C.

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):

N/A

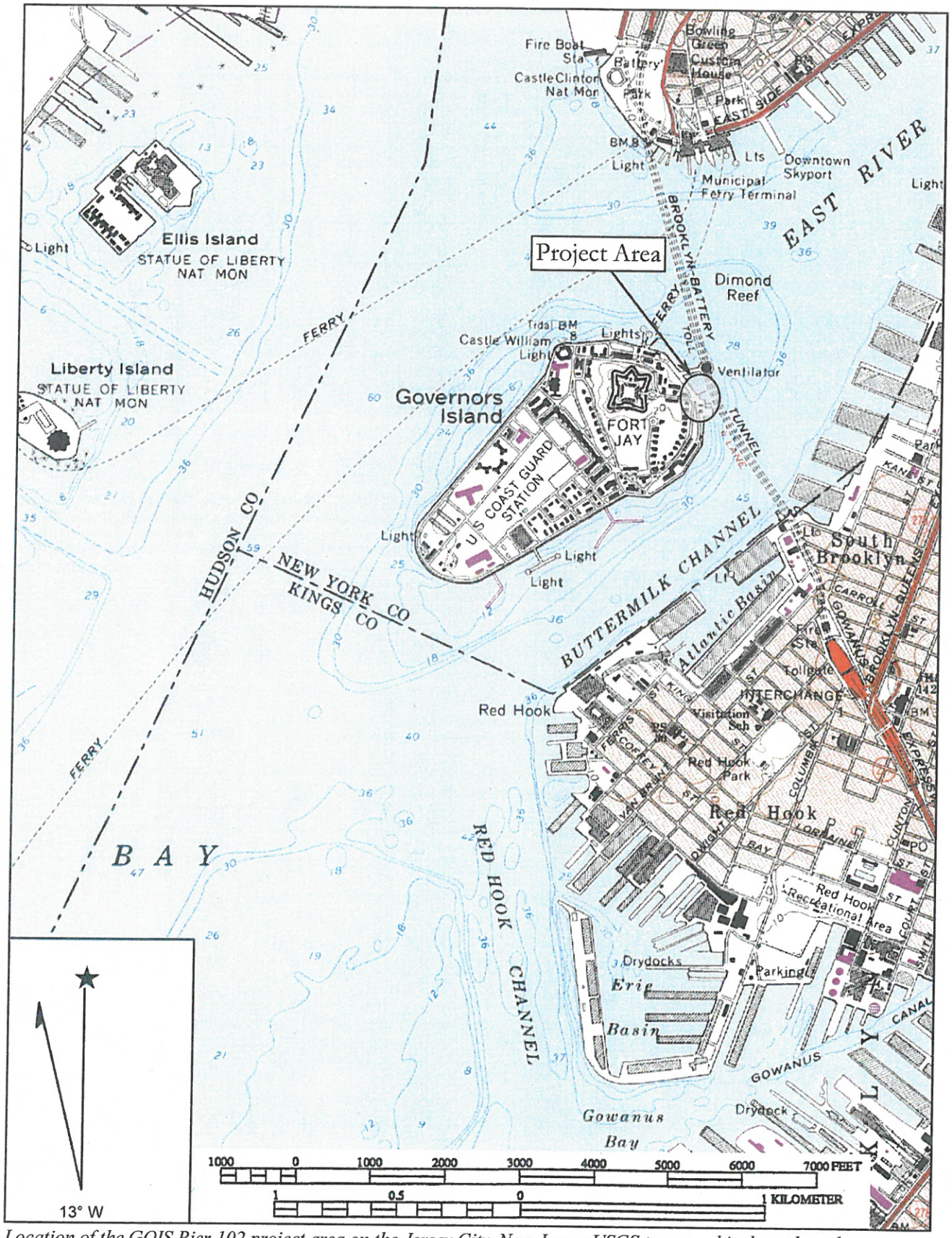
If prehistoric materials are evident, check here and fill out prehistoric site form. ___

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 8 1/2" x 11", if possible.

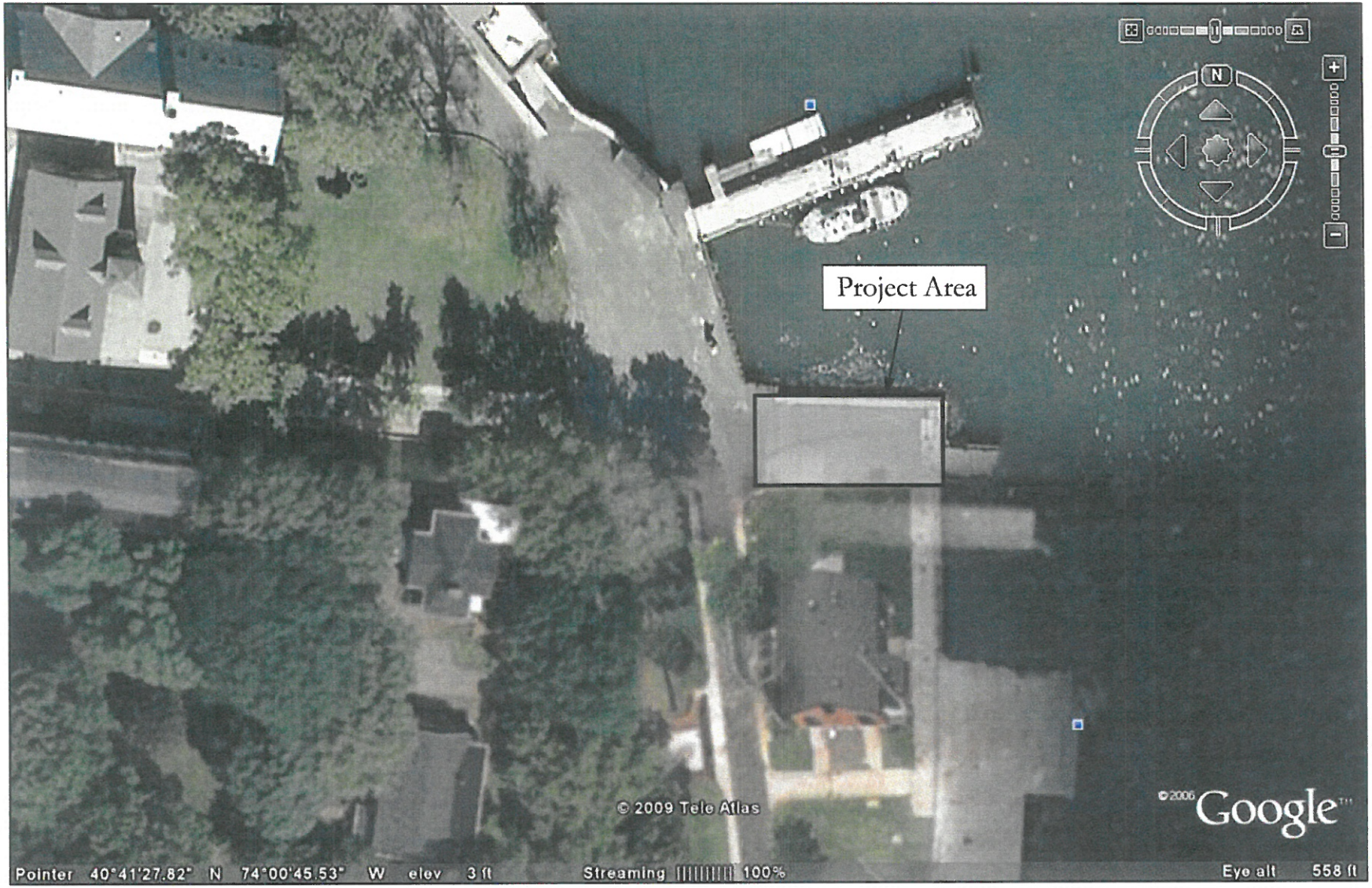
USGS 7.5 Minute Series Quad Name Jersey City, New Jersey

For Office Use Only--UTM Coordinates

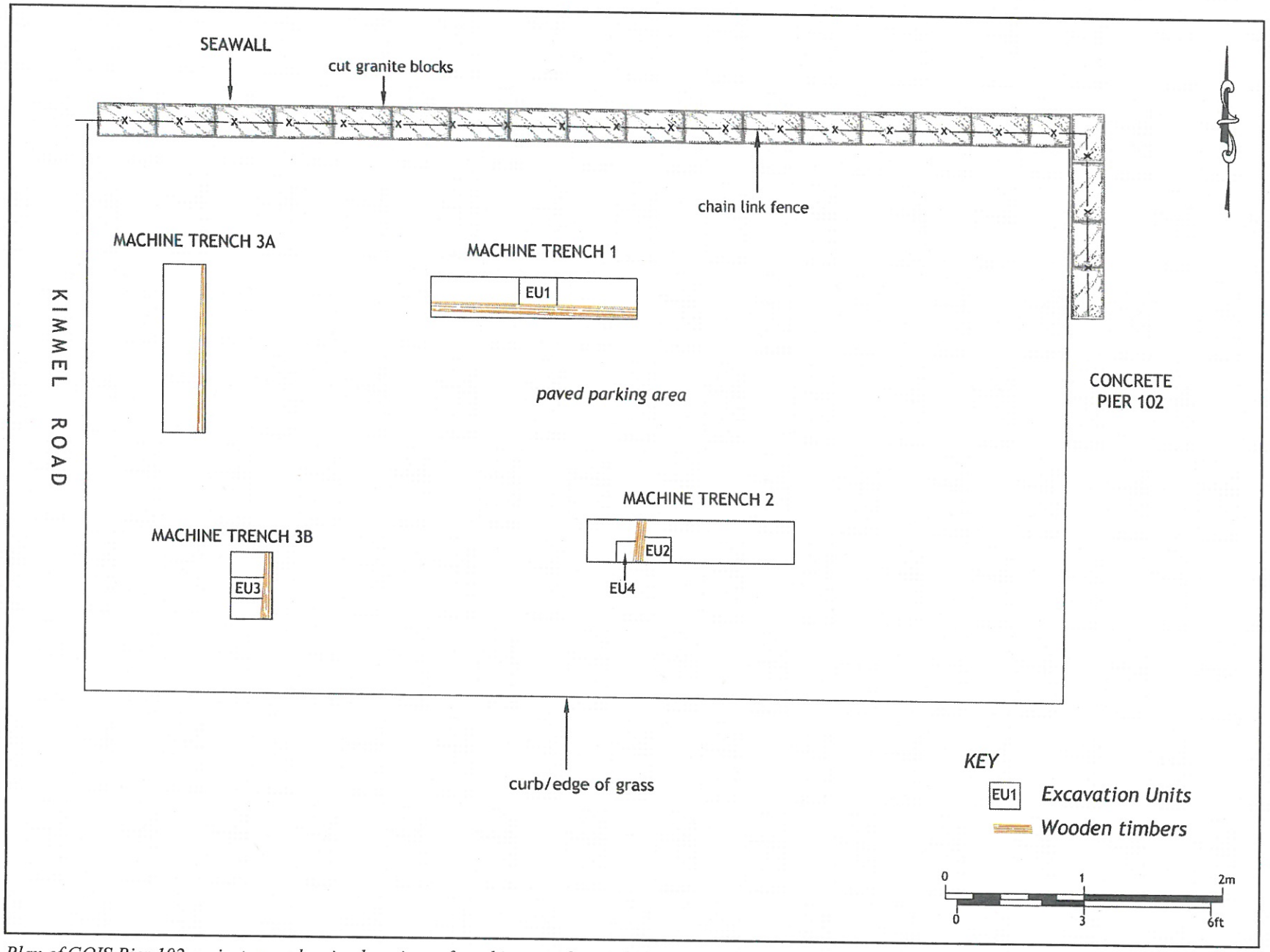
10. PHOTOGRAPHY (optional for environmental impact survey): Please submit a 5"x7" black and white print(s) showing the current state of site. Provide a label for the print(s) on a separate sheet.



Location of the GOIS Pier 102 project area on the Jersey City, New Jersey USGS topographical quadrangle.



Aerial photograph of Governors Island showing location of GOIS Pier 102 project area.



Plan of GOIS Pier 102 project area showing locations of machine trenches and identified features, Governors Island NY.

Plan photo of MT-1 showing exposed timber, view west, GOIS Pier 102 Phase IB Survey.