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FINAL

A Phase IA/B Archaeological Survey of Fort Totten, Queens County, New York City, New York

by

Paula Bienenfeld, Ph.D. and Hope Leininger

Submitted to:

Planning and Environment Division
Mobile District
U.S. Army Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Submitted by:

Tetra Tech, Inc.
5203 Leesburg Pike, Suite 900
Falls Church, Virginia 22041

May 15, 1998

Contract Number DACA01-96-D-0011
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A Phase IA/B archaeological survey was conducted for the BRAC excess parcel at Fort Totten, Queens County, New York City, New York. The area to be excavated was divided into six sections, A through F, and 210 shovel test pits were excavated at 15.24 meter (50-foot) intervals across approximately 6 hectares (15 acres) of open land within the BRAC parcel. Most of the STPs were excavated within the parade ground. A total of 1,377 artifacts were found. All but nine of the artifacts date to the historic or modern periods. The remaining nine were isolated quartz and quartzite flakes and flake fragments. No intact prehistoric sites were found. Features relating to the historic 19th-century military occupation were found in Sections A,B, C, D, and F, and portions of Sections A, B, and F may contain archaeological remains that may be potentially eligible for listing on the National Register of Historic Places.

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MANAGEMENT SUMMARY

In the fall of 1996, a Phase IA/B archaeological investigation was conducted for the BRAC excess parcel at Fort Totten, Queens County, New York City, New York. The excess parcel is approximately 54 hectares (135 acres) in size. This parcel includes most of the land north and east of Totten and Murray Avenues excluding the U.S. Coast Guard property on the northwestern portion of the Fort, and Buildings 319 and 330. A small strip of land south of Duane Road is also being excessed. The area to be excavated was divided into six sections, A through F, and 210 shovel test pits (STPs) were excavated across approximately 6 hectares (15 acres) of open land within the BRAC parcel. The majority (143) of the STPs were located in the parade ground and the open area to its east. One hundred and fifty positive STPs were excavated and 1,377 artifacts were found. All but nine of the artifacts recovered date to the historic or modern periods. Prehistoric material was limited to isolated flakes and flake fragments. One quartz flake fragment and two whole flakes were recovered from Section A. Six quartzite flakes were found in Section B. All of these came from levels producing historic artifacts. No pattern is apparent in their distribution and the density does not suggest the presence of an intact prehistoric site within the project area. Features relating to the historic 19th-century military occupation of the site were found in Sections A, B, C, D, and F. These features may be related to the mid-19th century hospital complex in the area that is now the parade ground, or to camps or hutments from the period of Camp Morgan. Portions of Sections A, B, and F contain archaeological remains that may be eligible for listing on the National Register of Historic Places. Phase II investigations are recommended for archaeological deposits identified in Sections A and B. Should construction or similar activities be undertaken in the northern portion of the excess parcel, near the standing fortifications or in the former location of the Battery King, archaeological monitoring is recommended. Features associated with the construction of these 19th-century fortifications may be present there under deep fill deposits.

1.0 INTRODUCTION

This report presents results of a Phase IA/B archaeological survey of those portions of Fort Totten that are to be excessed as part of the Base Realignment and Closure Action (BRAC). The project was sponsored by the U.S. Army Corps of Engineers (COE), Mobile District and U.S. Army Forces Command (FORSCOM). The COE Point of Contact is Dr. Neil Robison, Mobile District Archaeologist. Tetra Tech, Inc. was contracted to conduct this survey on May 24, 1996 (Contract No. DACA01-96-D-011) to complete work necessary under Section 106 of the *National Historic Preservation Act* (NHPA) and the *National Environmental Policy Act* (NEPA).

Fort Totten occupies a 76.9-hectare (ha) (190-acre) tract of land in northeast Queens County, a borough of New York City located at the southwestern end of Long Island (Figure 1). The Fort is situated on a ridge that forms a peninsula which juts into Long Island Sound. Fort Totten is bordered to the north, west, and south by water. The entrance is located on the eastern portion of the facility near a densely populated residential community (Figure 2).

Approximately 54 ha (135 acres) of the reservation were declared excess following the BRAC Commission recommendations. The BRAC parcel at Fort Totten includes all of the land south of Weaver Avenue and east of Murray Avenue except for the buildings and land immediately surrounding Buildings 330 and 319; a strip of land west of Duane Avenue near the Fort's main entrance, which includes Buildings 102 through 113; all of the land surrounding Building 203 on the south side of Totten Avenue and Willets Street; and the land north of Totten and Weaver Avenues, except for property belonging to the U.S. Coast Guard (Figure 3). A Phase IA/B survey is defined by the scope of work as being one that is sufficient to locate all probable archaeological sites within the areas designated for survey (undeveloped intact land within the BRAC parcel, in this case). The investigation and report conform to the guidelines presented in "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State" (The New York Archaeological Council 1994). Because they will remain under Federal ownership, the Coast Guard property and the U.S. Army Reserve Enclave were not part of this Phase IA/B study.

Outside entities such as the New York City Police Department, the New York City Fire Department, and the Bayside Historical Society use some of the facilities at the Fort. Recreational activities take place on the parade grounds during the weekend; Bayside, where Fort Totten is located, is a densely populated residential community.

The research staff included Dr. Paula Bienenfeld, who served as Project Manager and Principal Investigator; Hope Leininger, Field Director; Dawn Anuszewski, J. Andrew Ross, and Sarah Shea as Field Assistants; and David Shonyo, Archaeology Laboratory Assistant.

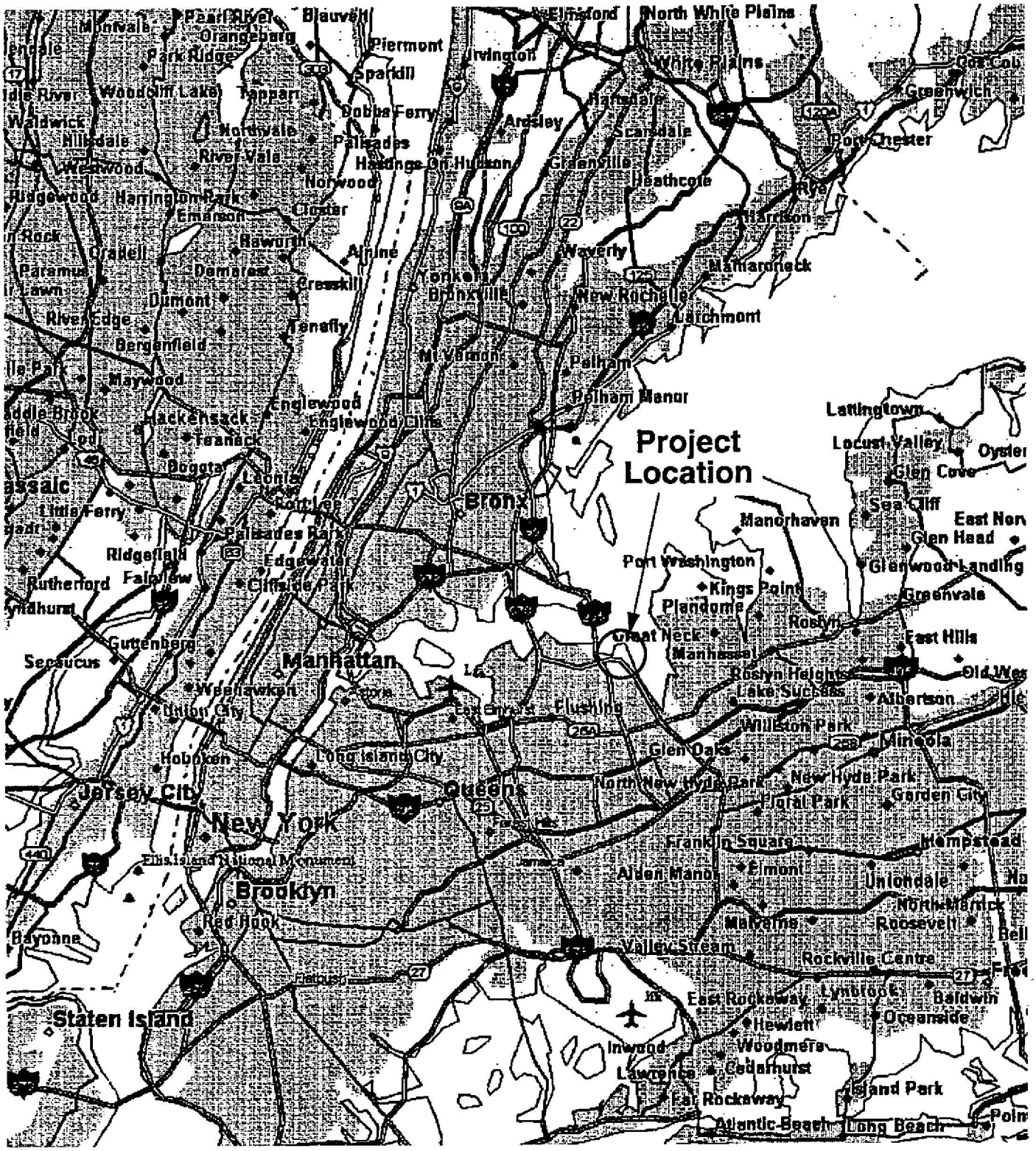

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Figure 1. Regional Map showing Project Area.

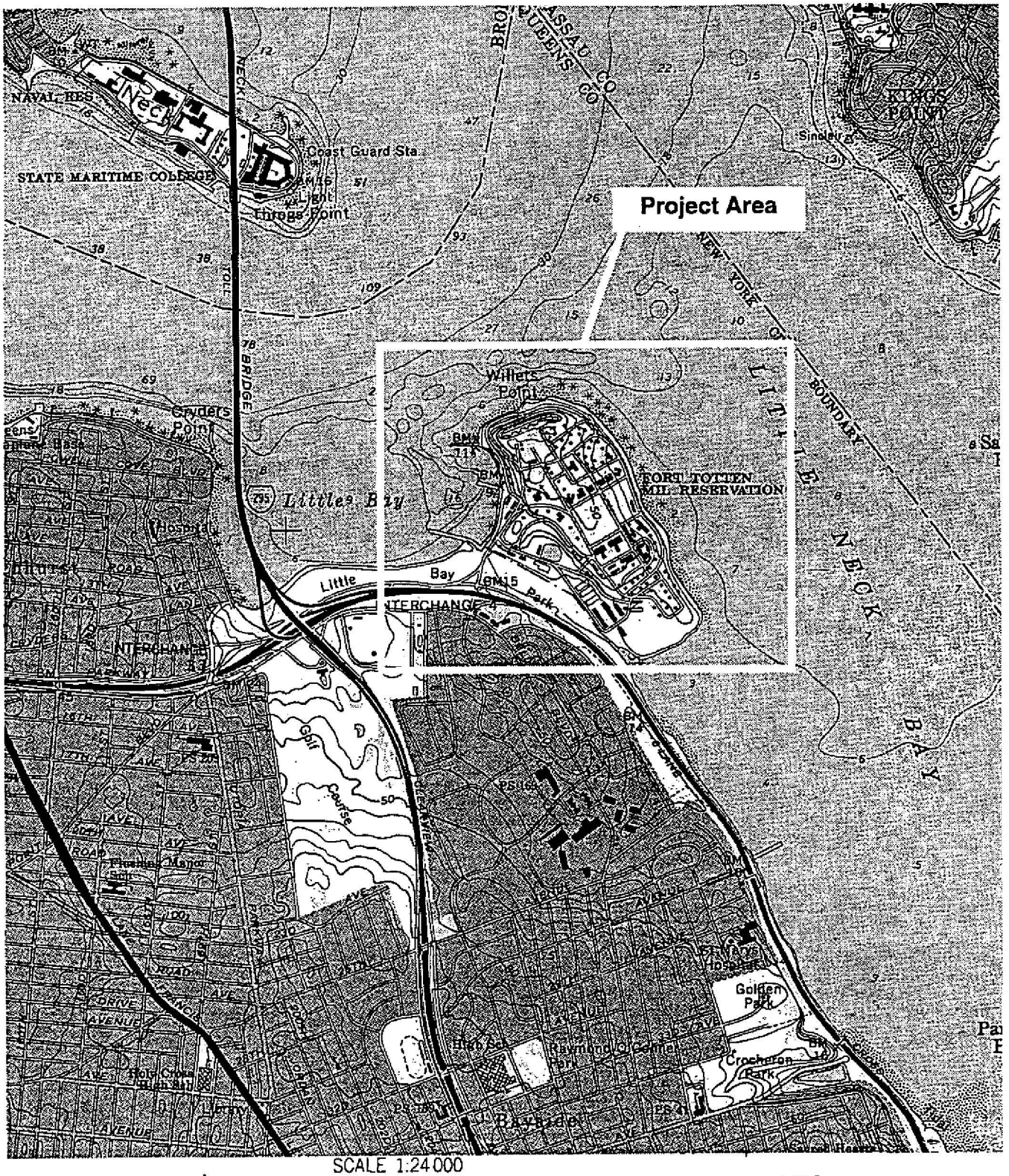

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Figure 2. Project Location.

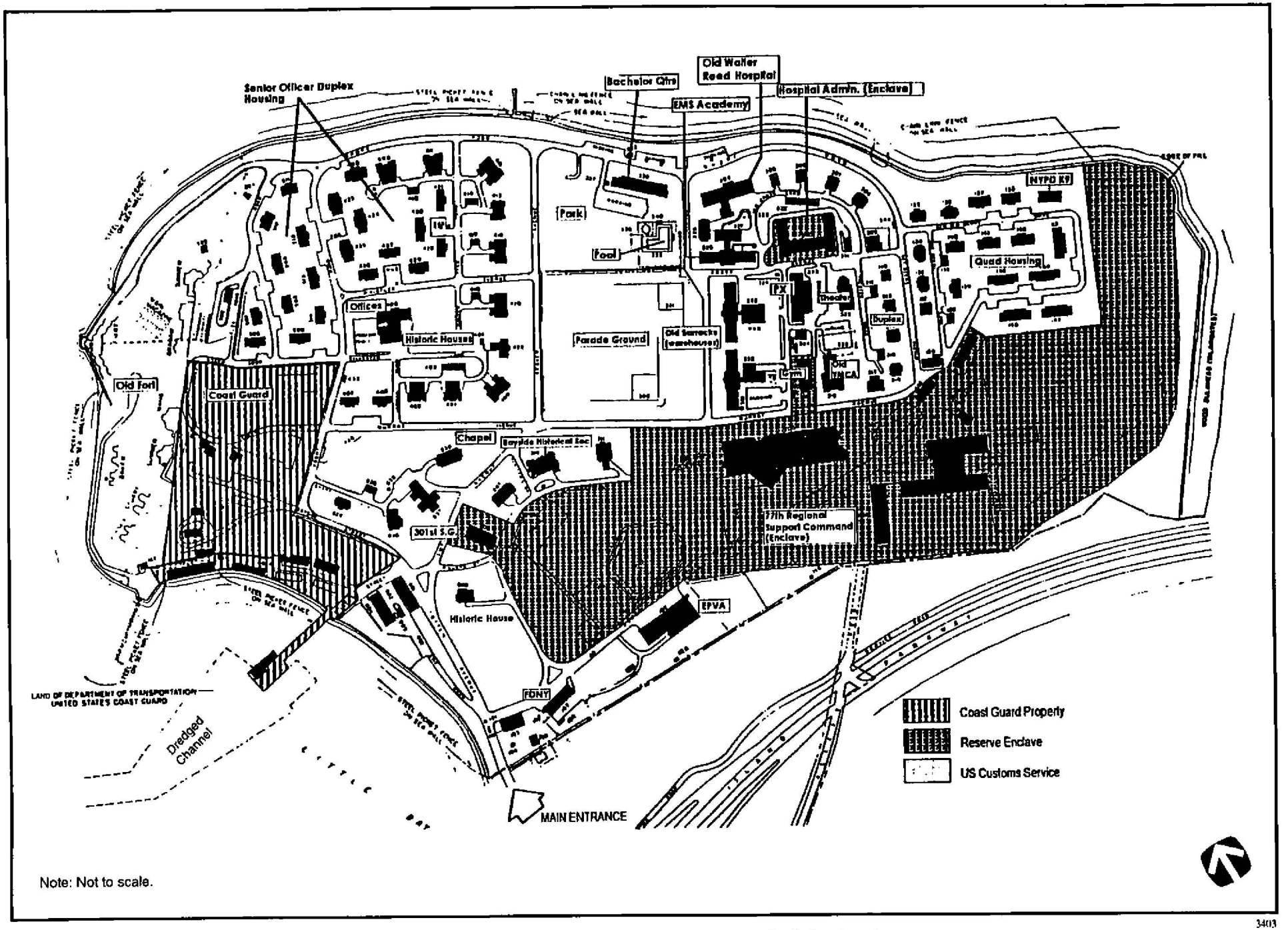


Figure 3. Map Depicting the Reserve Enclave, U.S. Coast Guard Property, and Archaeological Testing Area.

Background research was conducted during October 1996, and field investigations took place from November 14 through November 23, 1996. Jack Fein, the Fort's Historian, kindly provided a wealth of background information. Peter Koutrobis, Fort Totten BRAC Environmental Coordinator, was of great help during our fieldwork and answered our many questions. The report, field data and artifacts, and other important project materials will be curated temporarily by the U.S. Army until an appropriate permanent repository is identified.

2.0 ENVIRONMENTAL AND PHYSICAL SETTING

A variety of environmental and physical conditions affect a location's potential for containing archaeological resources. Areas with a high probability for containing prehistoric sites would be locations that are either very close to fresh water; rich in plant and animal life; well-drained and suitable for habitation; or rich in lithic resources required for tool production. Historic sites are also likely to occur in areas containing good natural resources such as fresh water, and well-drained land suitable for farming, timber, and game. In addition, good preservation conditions must exist within the area. For example, areas subject to soil deposition are more likely to contain archaeological deposits than those subject to erosion. Furthermore, historic and modern ground-disturbing activities must remain at a minimum for the preservation of resources.

Few archaeological investigations have been conducted in the vicinity of Fort Totten. Records on file at the New York State Museum and the New York State Office of Parks, Recreation and Historic Preservation indicate that no prehistoric archaeological sites have been identified within a 1.6 kilometer (km) (one-mile) radius of the project area, but that shell middens, sometimes associated with evidence for long-term site occupation, have been identified nearby in similar geographic settings. Historic period sites identified within a 1.6-km (one-mile) radius of the project area are limited to one Civil War Period earthwork, which is located on the U.S. Coast Guard's portion of the peninsula containing Fort Totten. Environmental factors affecting the potential for archaeological resources within the project area are discussed below.

2.1 PHYSIOGRAPHY AND SOILS

The project area is located in northern Queens County on the northwestern edge of Long Island. It occupies a ridge that creates a peninsula into Long Island Sound. The Fort Totten ridge is surrounded on three sides by water—Little Neck Bay and Little Bay are located to the north and west, and Long Island Sound is to the east. There are no naturally occurring surface water bodies on Fort Totten. The land joining Fort Totten to Long Island was originally a marsh or mud flat which has been filled. Long Island is considered to be part of the Atlantic Coastal Plain physiographic region, the flat low-lying area that stretches from north to south along the eastern portion of the Mid-Atlantic Region. The northern portions of Long Island, where Fort Totten is located, are covered by terminal moraine deposits. These deposits are associated with the Wisconsin glacial

retreat, which resulted a hilly or rolling and irregular topography. Ground elevations range from sea level to 21.34 meters (m) (70 feet [ft]) above sea level.

The exposed Upper Pleistocene glacial deposits at Fort Totten extend to a depth of approximately 10 m to 45 m (30 ft to 150 ft) below surface. Land at Fort Totten is not characterized by substantial post-glacial fluvial soil deposition. Because glaciers act, in a sense, like giant bulldozers, the actual stratigraphy of the project area varies enormously. Silty and sandy soils were found within 30 m (100 ft) of each other. Frequently, a layer of glacially deposited cobbles and angular rocks was present at the interface between the surface level and the subsoil (Figure 4). In addition, most of the soils encountered within the test areas were very compact. In some areas, the soils resemble the Montauk silt loams present elsewhere on Long Island. The Montauk soil profile consists of a surface layer of dark grayish brown silt loam, underlain by a yellowish brown silt loam. The subsoil becomes more brown and sandy with depth. Riverhead-Plymouth soils are also present at Fort Totten. The Riverhead-Plymouth profile consists of a surface level of brown sandy loam underlain by a strong brown or yellowish brown sandy loam subsoil. The northern shorelines are generally narrow and characterized by gravel, cobbles, and shell fragments. The beaches are inundated by saltwater twice a day during high tide (Wulforst 1987).

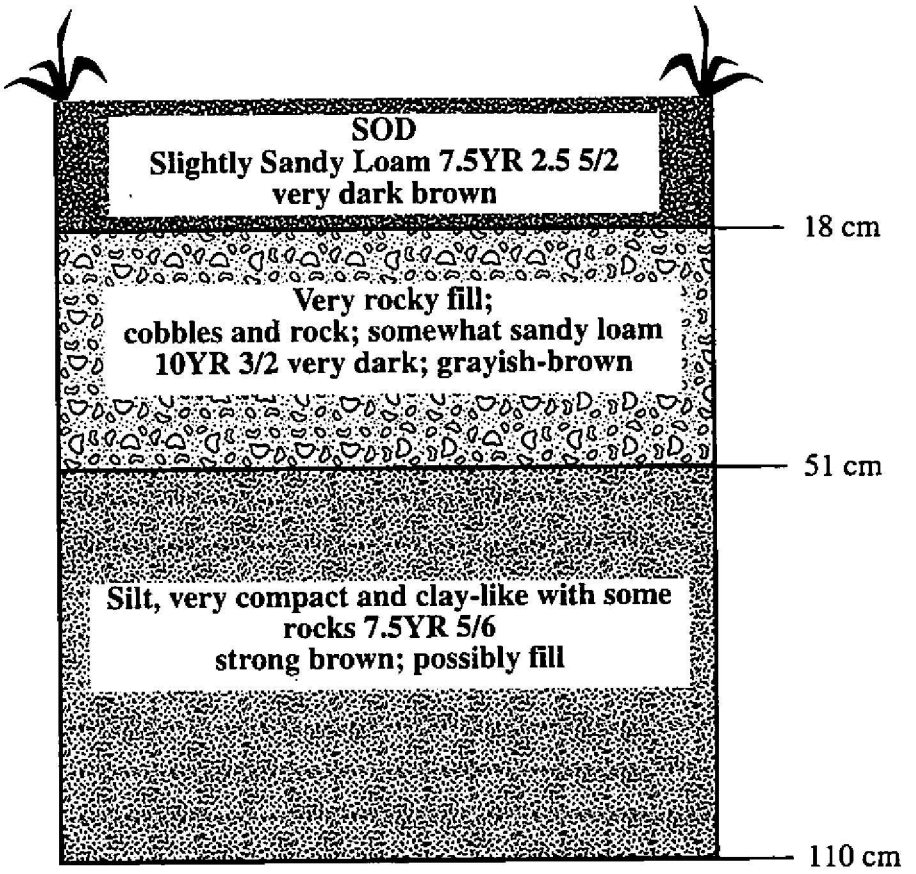
The vast majority of the natural land at Fort Totten has been disturbed, first by clearing and plowing during the 17th, 18th, and 19th centuries, and then by military activity following U.S. Government acquisition of the property in the mid-1800s. In addition, some areas of the Fort contain substantial fill deposits (Louis Berger and Associates 1986). The reserve enclave and an excess housing area (located just to the south and west of the excess parcel) sit almost entirely on manmade land.

2.2 CLIMATE

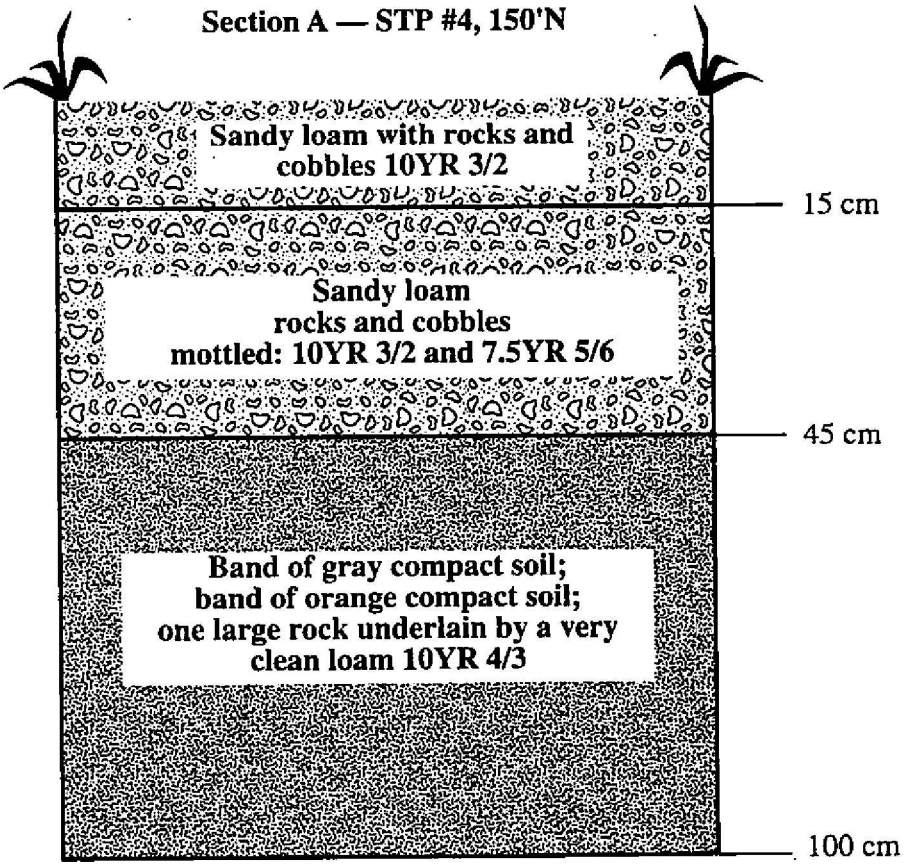
The climate of Long Island is influenced both by its proximity to the Atlantic Ocean and to Long Island Sound. The winter months are cold and snowy. January is generally the coldest month with an average temperature of 32 degrees Fahrenheit (°F). Summers are usually hot and humid, typical of the Atlantic coast. The average temperature in the month of July is 83 °F. Spring and fall are generally mild. Regional precipitation averages around 106.68 centimeters (cm) (42 inches [in]) a year. Fort Totten is bounded on three sides by water which moderates temperatures and increases winds (Woodward-Clyde Federal Services 1996).

2.3 FLORA AND FAUNA

Prior to development and clearing, the central and interior portions of the project area were most likely covered by a variety of trees—hardwoods such as oak, beech, and maple, mixed with some pine species. The eastern portion of the installation, where the ridge or peninsula attaches to Long Island, was most likely a marsh or mud flat. The varied conditions promoted a diverse ecological situation at Fort Totten, including a wide



Section A — STP #4, 150'N



Section B — STP #3, 100'S (baseline)

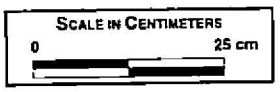


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Figure 4. Sample Shovel Test Pit Soil Profiles.

variety of woodland and wetland plant life. Fauna would have included numerous species of brackish and saltwater aquatic life; diverse and plentiful waterfowl; and typical woodland mammals. The East River, located to the north of the project area, may have had a salinity level low enough to support a variety of freshwater species as well.

2.4 RECENT HUMAN AND NATURAL DISTURBANCE

Since the U.S. Army acquired the property in the mid 1800s, there has been extensive land disturbance. As depicted in Figure 3, numerous buildings and defensive structures are located throughout the project area. In addition to construction activities, military training exercises during the mid- to late-19th century and the first half of the 20th century probably resulted in extensive soil displacement. These exercises probably included instruction in foxhole and trench excavation, and the construction of earthen fortifications.

Very recent land disturbance within the project area at Fort Totten is minimal. Most of the buildings within the project area are vacant housing. This includes large apartment-style facilities and free-standing single family homes and duplexes. Defense Intelligence Agency activities take place in Building 601. Other tenants include Johnson Controls (maintenance contractors who work out of a part of Building 107 and all of Building 604), and the New York City Emergency Medical Service, which runs a training operation in Building 325. The New York City Police Department uses Buildings 318, 334, 412, and 417; the New York City Fire Department uses part of Building 107; and the Bayside Historical Society is located in Building 208. None of these groups are engaged in ground disturbing activities within the Fort.

Natural disturbance is also limited within the project area. The coast lines of the peninsula have been drastically altered and reinforced to maximize land area. Most of the land is paved or grass-covered, preventing extensive erosion.

3.0 BACKGROUND RESEARCH AND SENSITIVITY ASSESSMENT

3.1 PREHISTORIC OVERVIEW

3.1.1 The Paleo-Indian Period (ca. 10,000 B.C. to ca. 8,000 B.C.)

Paleo-Indians, the first inhabitants of New York State, arrived in the region approximately 10,000 to 12,000 years ago. These people were nomadic hunters and gatherers who traveled in small groups. Paleo-Indian people maintained low population densities, and their settlements were small and temporary. For food, they gathered fruit and nuts and relied heavily on large Pleistocene herbivores such as mastodon, mammoth, and caribou. Most of the archaeological evidence for these people is in the form of stone tools. The spears that they used for hunting are identified by a manufacturing technique called fluting, where one large flake is driven off the spearpoint longitudinally. Other tools used by

Paleo-Indian people include gravers, awls, scrapers, and knives. Many tools dating to the Paleo-Indian period are unifacially worked.

3.1.2 The Archaic Period (ca. 8,000 B.C. to ca. 1,000 B.C.)

During the Archaic Period, substantial ecological changes occurred across the North American continent. The cold, dry, climate of the Pleistocene, with its associated flora and fauna, gave way to the warmer, wetter, Holocene Period. Wetland areas increased, sea levels rose, coniferous forests were replaced by deciduous forests, and the fauna changed accordingly. Bear, moose, white-tailed deer, and other mammals replaced the megafauna of the Pleistocene Period. Wetlands species diversified and multiplied. Changes were underway in the subsistence strategies and settlement patterns of Native Americans during this period as well.

The people of the Archaic Period continued to live highly mobile lives although a trend toward increased sedentism emerged during this period. Groups of people moved from place to place to take advantage of seasonal food surpluses. The preferred location for their campsites was near rivers and lakes with access to fresh water, waterfowl, fish, and game animals. Evidence of shellfish exploitation appears at Archaic Period sites in the form of shell middens along coastal areas. Other types of sites include stone quarries and stone tool-making workshops. Archaic Period sites are identified by the presence of notched and bifurcate tools, especially projectile points. Other artifacts found in association with Archaic Period sites include groundstone tools used for nut and seed processing (mortars and pestles, for example); adzes and axes reflecting an increased manipulation of the forest environment; and netsinkers and fishweirs. Bifacially worked tools replace the unifaces of the Paleo-Indian Period, and food storage pits, and carved stone containers appear in the later portion of the Archaic Period as evidence of longer-term food storage.

3.1.3 The Woodland Period (ca. 1,000 B.C. to ca. A.D. 1524)

The trend toward sedentism increased in the Woodland Period and it is during this time that the first evidence for long-term site occupation appears. The archaeological record also indicates an increased reliance on shellfish and other estuarine resources. Most Woodland village sites on Long Island are situated on tidal streams and bays. During the Woodland Period Native Americans began to rely increasingly on domesticated plants. However, little evidence of agriculture has been discovered in coastal New York, possibly because the environment naturally produced an abundance of food. Bows and arrows were used for hunting. Shell, bone, wood, and antlers were fashioned for use as tools. The Woodland Period is also characterized archaeologically by the presence of small triangular projectile points and the appearance of true ceramic pottery.

3.1.4 Contact Period (ca. 1524 to ca. 1700)

Giovanni da Verazzano explored the New York Bay in 1524 and Henry Hudson followed with the exploration of the Hudson Bay in 1609. At this time, Long Island was occupied by the Munsee-speaking Canarsee and Rockaway Indians, members of the Delaware culture group. The Delaware, in turn, are part of the larger Algonquin group which occupied much of the Hudson Valley and current-day Manhattan. At this time the Native Americans were living in the fashion described for the Woodland Period. They subsisted on a combination of cultivated plants (predominantly corn); game animals such as deer, rabbit, and waterfowl; and fish and shellfish. Both larger villages and smaller, temporary hunting or fishing camps existed at this time.

In the face of expanding European contact, trade, and settlement, Native American villages grew in size and became more permanent. People increasingly relied upon domesticated plants for food. Trade was common between ethnic groups, and Indians traded shell beads, wampum, and land in exchange for European items such as axes and guns. By the late 17th century, the Native American population on Long Island had been decimated by the combined effects of land trades, warfare, and disease.

3.2 HISTORIC OVERVIEW

3.2.1 Settlement to Government Acquisition (1639 to 1857)

The land on which Fort Totten is located was taken by the Dutch from the Matinecoc Indians (a subset of the Canarsee Indians) in 1639. The first long-term European settler on the tract was an Englishman named William Thorne who obtained the land through a patent from William Kieft, the Governor General of the New Netherlands. Thorne farmed the property, and his farmstead became known as "one of the most valuable and handsome" in the area (Timelines, Inc. 1989a). The property became known as Thorne's Point and Thorne's Neck and was held by Thorne and his male heirs until the late 1700s. In 1788, Ann Thorne, the last remaining family heir, married William Wilkins. Together, they held the land, which came to be known as Wilkins Point and Wilkins Neck Point, for 40 years. In 1829, Thomas Willet purchased Wilkins Point and changed the name of the farm to Willets Point. In addition, a commercial venture was started on the tract sometime around 1830 when Jonathan Peck built a steamboat dock for the residents of Flushing and other adjacent neighborhoods. The Willet family eventually sold 44.51 ha (110 acres) of land on the Point to George Irving, a land speculator who then resold the tract to the Federal government for $200,000. An additional 10.52 ha (26 acres) of land on the Point were purchased by the government in 1863 (Timelines, Inc. 1989b).

The Thorne family held the land from the mid-1600s through the first quarter of the 19th century. The parcel was fairly large (61.5 ha [152 acres]) when transferred to William Wilkins and reportedly farmed. Based on the duration of ownership and the size of the parcel it is likely that some structures existed on the Point at the time. Possibilities include a farmhouse or dwelling for the Thorne family; dependencies such as barns, corn cribs, a

kitchen, and privy; and perhaps slave, servant, or tenant quarters. Based on government records, an old farmhouse which had been converted for use as a tavern stood on the 10.4-ha (26-acre) parcel acquired in 1863. This building was razed prior to 1890 and may have been the Thorne house.

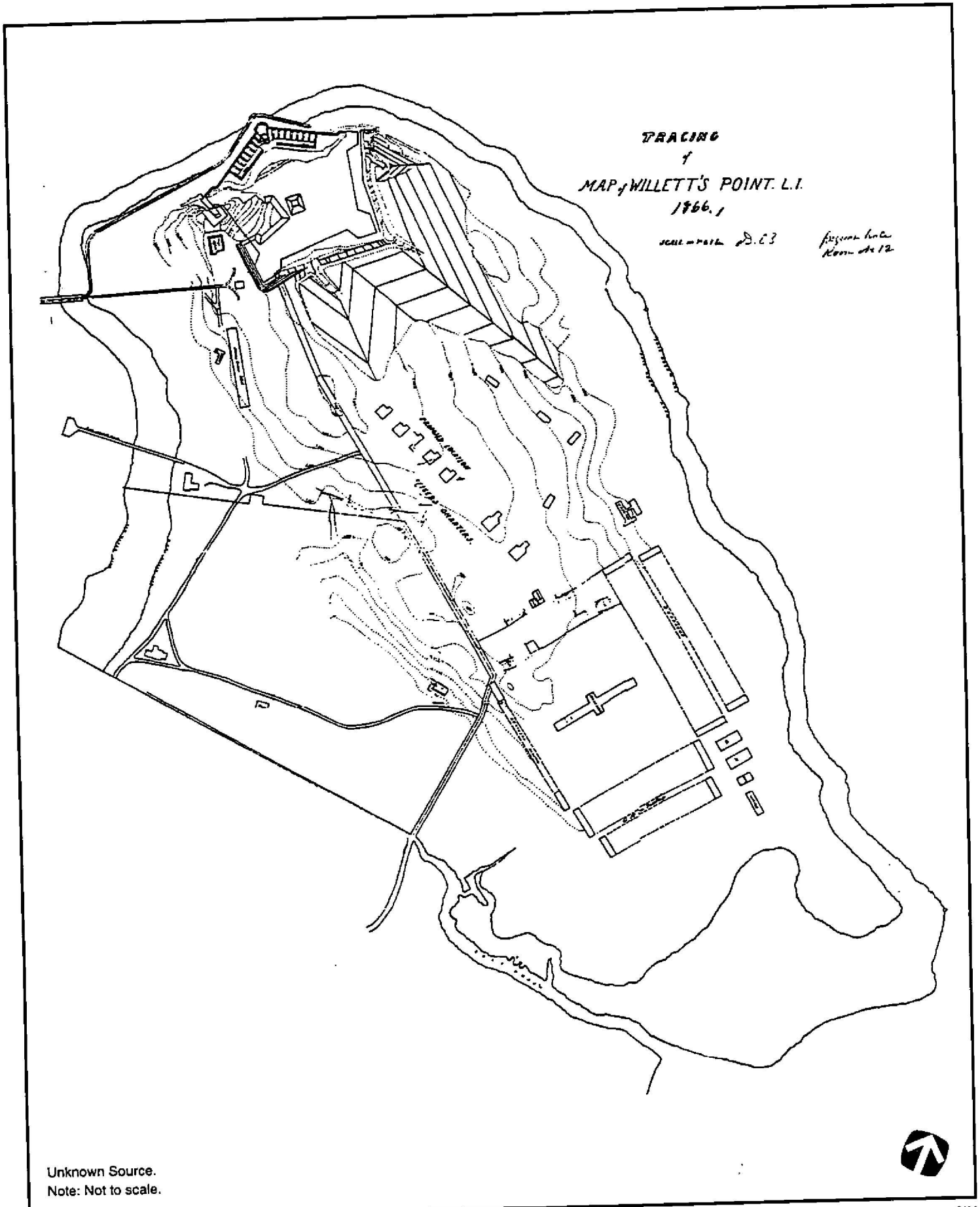
Charles Willets established a nursery on the land, which his family and tenant farmers worked. He reportedly built a large villa or estate on the tract which may have been his year round or summer home. Historic documents suggest that when the U.S. Government acquired the original 44.5-ha (110-acre) parcel that is now Fort Totten, extant structures included a large double house facing the river. This was probably the Willets estate. The building was used as an engineer's office, while the stone fort, still standing, was under construction. The home (now Building 211) has, however, been moved from its original location to Murray Avenue. Beginning in 1867 it was used as the Commanding Officer's quarters (Trieschmann and Gettings 1997).

3.2.2 Acquisition to Reconstruction (1857 to 1885)

The land on which Fort Totten is located had been of military interest since the early 1800s which eventually led to its purchase in 1857. Fortifying Willets Point was part of a program, developed by military and civil engineers, known as the Third System of Coastal Defense. This program was the first of its kind, broad-ranging, innovative, and an attempt to standardize military construction projects. A key figure in the development of the Third System was General Joseph G. Totten, a Chief Engineer of the U.S. Army, for whom Fort Totten was renamed. Because the Third System was an expensive and challenging endeavor, construction did not begin immediately after government purchase. Instead, Camp Morgan, a training post for Union recruits, was established on the Point in 1861. Here regiments from points north trained and waited to be sent off to war (Gaines 1996). These men probably lived in temporary camps on the southern portion of the Point until permanent structures could be built.

A perceived Confederate threat to New York Harbor through Long Island Sound led to funding for the construction of defensive structures on Willets Point in the spring of 1863. The primary focus of construction was a stone battery on the Point's northern shore. Originally planned to be a pentagonal four-tiered stone battery, technological advances during the Civil War rendered the fortification style obsolete by 1864 (Figure 5). Construction of the two seaward walls, two tiers in height, was complete by this time and this portion of the Fort still stands today.

The primary activity on the Point between 1861 and 1864 was the construction of defensive structures. The battery was constructed of massive granite blocks. Based on plans, the foundation extends 3.65 m (12 ft) below sea level. The walls are 2.44 m (8 ft) thick and the fort is approximately 80 m (260 ft) long. Completed forts of similar construction can be found at Fort Sumter and Fort Delaware. In preparation for construction, substantial portions of the northern part of Willets Point were removed or excavated to create a level work surface (Gaines 1996). A cofferdam was placed in front



Unknown Source.
Note: Not to scale.

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Figure 5. 1866 Map of Fort Totten Showing the Proposed Pentagonal Fortification.

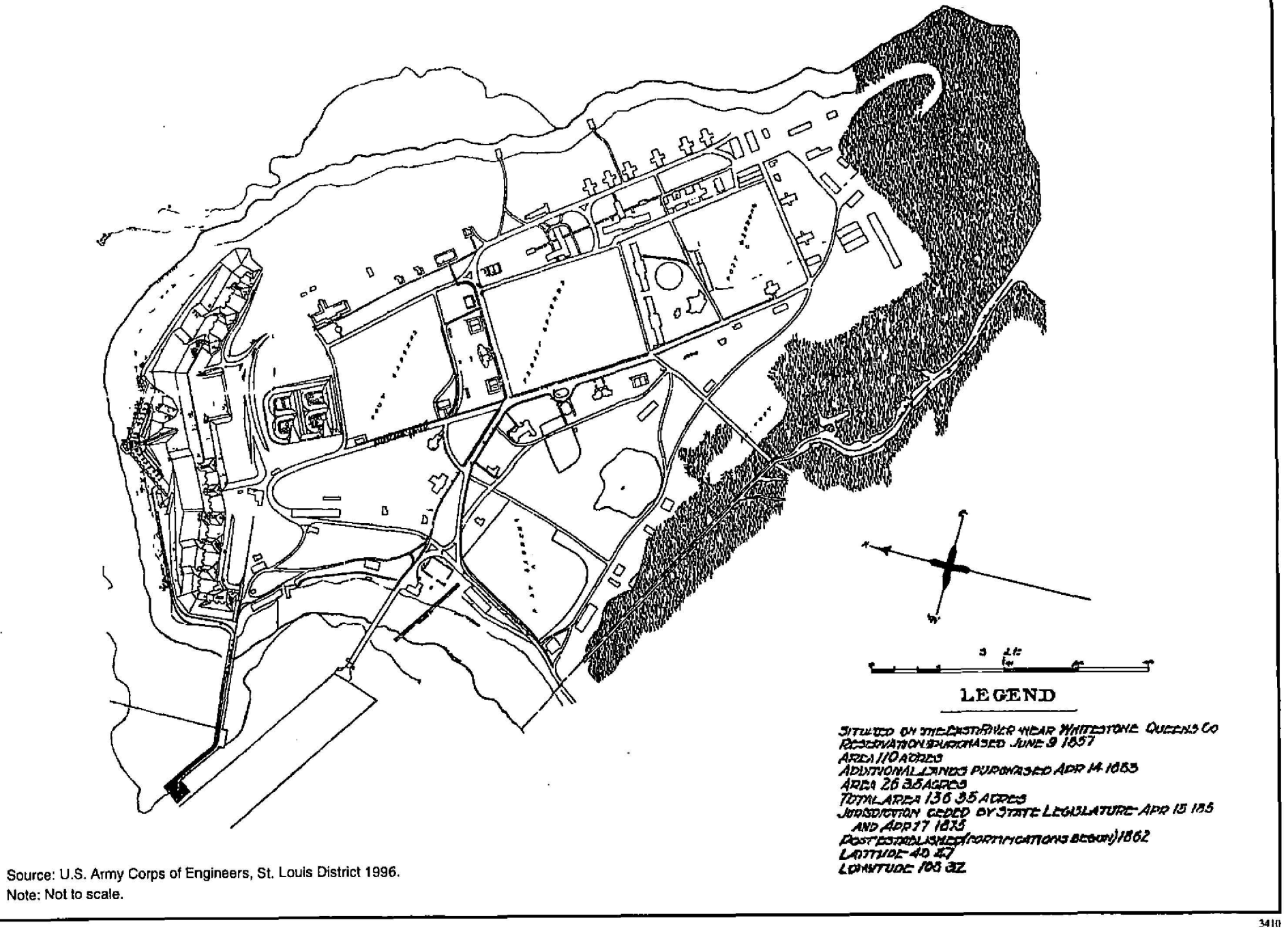
of the work site to hold back the surrounding water. This massive effort required various support structures, including a 140-m (460-ft) dock and structures for loading and unloading vessels; rail lines, which were laid in the north to move materials and equipment; storage sheds, stables, temporary housing for labor; and administrative offices. Money was eventually appropriated for the construction of permanent barracks capable of housing 3,000 men.

Project plans for the stone fortification were scaled back during the war, and in 1867 work on the Fort was terminated. The plan modification and later abandonment of the project were due to the reallocation of funds associated with the Civil War and to the obsolescence of the battery in the wake of technological advances. When this project stopped, the Fort's mission changed.

In 1864, the Fort at Willets Point became home to the Grant General Hospital. The hospital had the capacity to treat 1,500 soldiers housed in 37 wards. Although some form of the hospital endured for about four years, the first year was the busiest and over 5,000 Union casualties were treated. A new wharf was constructed on the west side of the peninsula, south of the original dock, to handle incoming wounded. The hospital was located around the parade grounds at the approximate center of the Point. Dr. Walter Reed, later recognized for his discoveries involving the prevention of yellow fever, was associated with this hospital. It is likely that some of the money appropriated for barracks supported the hospital—finished buildings may have been converted for use as wards and some task-specific facilities may have been constructed. Buildings probably included living quarters for the staff, a commissary, storage space, mess halls, and kitchens.

Throughout the 1860s, numerous engineers were posted at the Fort. By 1865 three of the U.S. Army's four engineering companies were located at Willets Point. In 1868, these engineers founded the Essayons Club, a scientific organization which became, in 1885, the Engineering School of Application. The school provided graduate education to West Point graduates. Scholarly and innovative, the engineers posted at Willets Point experimented with and studied a variety of subjects. Engineers at the Post pioneered technological advances, and noteworthy experimentation was conducted in photography, illumination, astronomy, surveying, bridge construction, mines, rockets, and torpedoes. Some of the buildings associated with the early U.S. Army Corps of Engineers at Willets Point include photographic laboratories, an astronomical observatory, a "model house" (where engineering ideas were transformed into scale models), and a torpedo laboratory. Some of these buildings are depicted on military maps dating to 1875, 1879, and 1890 (Figures 6, 7, and 8).

Additionally, some consideration was given to the fortification of the Point. Between 1868 and 1873 a very large (two-part) storage magazine was constructed behind the eastern portion of the stone fort. Construction of earthen batteries and a tunnel were also initiated on the bank behind the stone fort between 1870 and 1874, a very substantial mortar battery was constructed about 244 m (800 ft) behind the stone battery, and ordnance, artillery, and ammunition systems were modernized (Gaines 1996). In sum, a



Source: U.S. Army Corps of Engineers, St. Louis District 1996.
Note: Not to scale.

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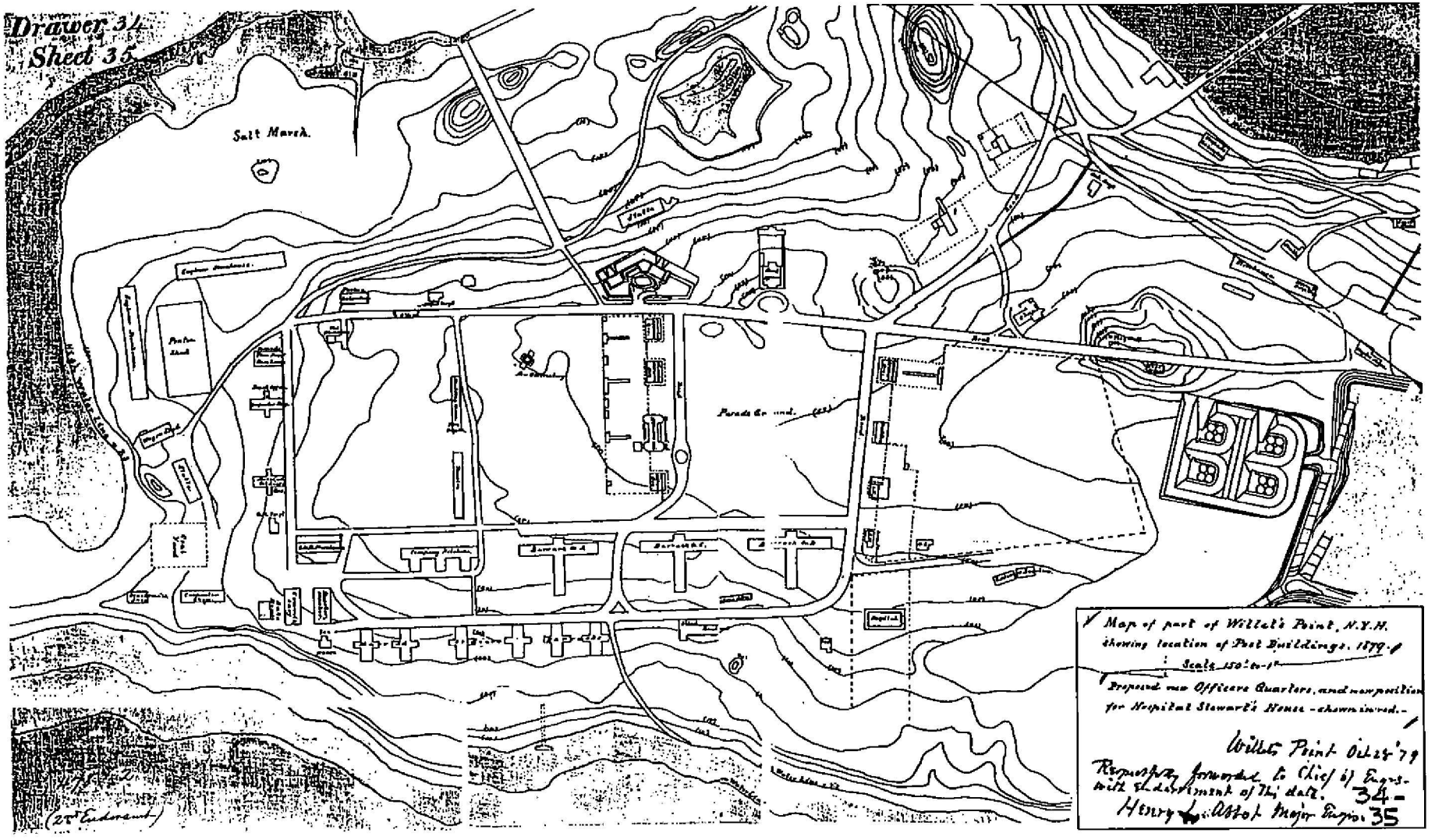
Figure 6. 1875 Map of Fort Totten.



Source: U.S. Army 1879.
Note: Not to scale.

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Figure 7. 1879 Map of Fort Totten.

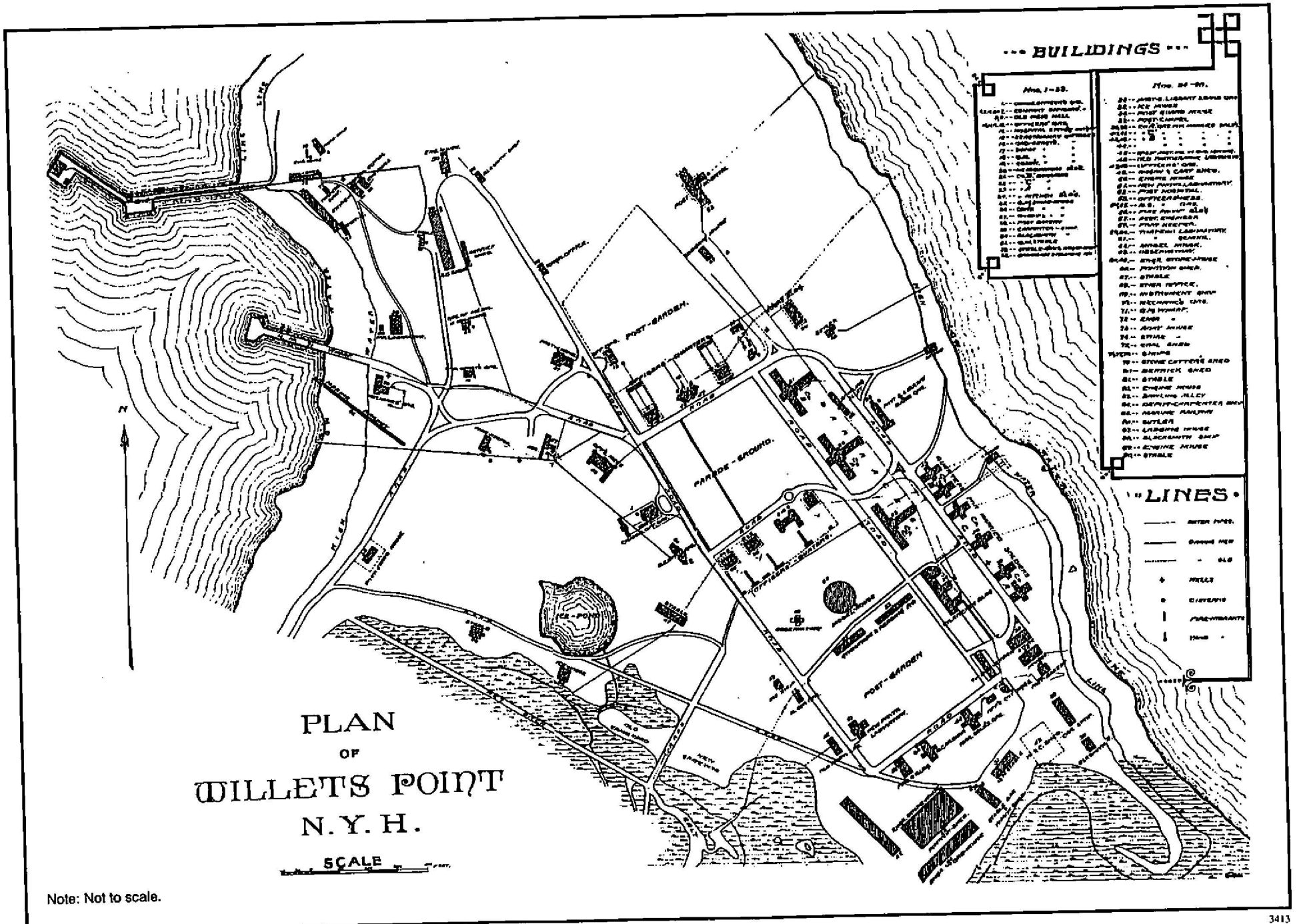


Figure 8. 1890 Map of Fort Totten.

variety of defensive projects were started in the first 30 to 40 years of the Fort. Many of these projects were abandoned, incomplete.

Historic maps and other documentation indicate that a wide variety of activities took place within the project area beyond the defensive, health, and engineering missions. Many facilities were constructed, particularly in the southern portion of the Fort. Permanent long-term housing developed for troops. Some two-story wood frame homes were built for the officers. These buildings may have had kitchens. They probably did not have running water or bathrooms. The barracks for the enlisted men, which were fairly large one-story buildings with basements, reportedly had bathrooms. Post gardens provided vegetables for the companies at the Fort. A separate garden reportedly existed for the hospital patients. In addition, chickens and cows were kept. Services included carpentry, tailoring, and shoemaking (Fort Totten n.d). Maps depict bake shops, kitchens, and mess halls. Leisure time was likely spent at the gymnasium, bowling alley, and reading rooms. The self-contained nature of the Fort is further evidenced by the presence of wood and tin shops, a sutler, and a church. There was a fire department and there may have been a school for the children of the married personnel. Ninety buildings and two graveyards are depicted on the 1890 map.

3.2.3 The Endicott-Taft Period (1885 to 1914)

Sweeping changes occurred in the late 19th and early 20th centuries at the Fort at Willets Point. A renewed national interest in coastal defense emerged during the presidency of Grover Cleveland. In 1885 he appointed a commission with the purpose of developing a new system for coastal defense. The Endicott Board, as the commission came to be known, identified the Fort at Willets Point as a target for defensive improvements. In 1891 money was appropriated for the construction of modern batteries on the north part of Willets Point.

The new batteries were constructed at the location of the 1870s earthen ones and were physically complete by 1901. The original mortar battery was updated with modern technology as well and became what is referred to as Battery King. A bomb-proof mine operating room/casemate was constructed on the northwestern portion of the Point to control mine fields in the nearby waters in 1898 and 1899 (Gaines 1996). Numerous buildings associated with torpedoes were constructed in the northwestern portion of the Point. Additional improvements include the installation of searchlights and electricity between the years 1905 and 1914 and advancements in precision methods of fire control for greater accuracy of artillery (Trieschmann and Gettings 1997). It was during this period, in 1898, that the Fort was renamed in honor of General Joseph G. Totten.

Physical changes took place in other portions of the Fort during the Endicott-Taft Period. Most of the frame structures around the parade grounds were razed in the early part of the 1900s, others were improved. Roadway and facility construction filled most of the open space. Some of the existing roads were probably realigned as was the configuration of the parade ground (Timelines, Inc. 1989b). Several 19th-century maps depict the parade

ground with a north-to-south alignment whereas the later maps show the orientation as running east-to-west. The Endicott-Taft Period saw the construction of approximately 80 permanent structures. Military maps dating to 1904, 1910, and 1911 demonstrate the changing land use patterns (Figures 9, 10, and 11).

The Fort's mission changed as well. The Army Engineering School of Application was relocated. Just prior to World War I, Fort Totten became a Headquarters to the Artillery District of New York and the North Atlantic Coast Artillery District (Gaines 1996).

3.2.3 World War I to World War II (1914 to 1945)

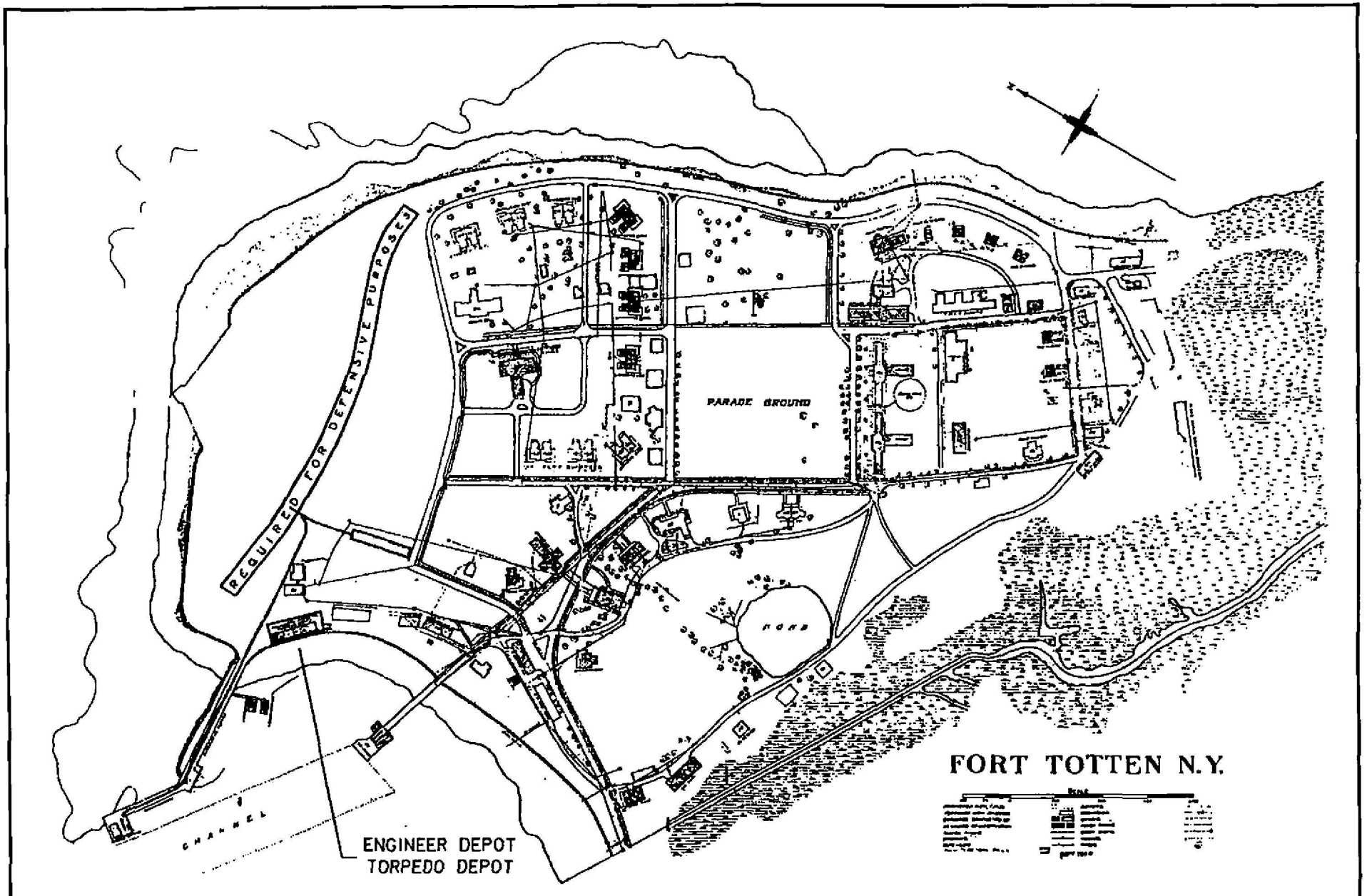
Innovations in military technology and changes in defense tactics again rendered many of the fortifications at Fort Totten obsolete by the onset of World War I. The Fort's wartime duties included acting as a training and staging area for numerous troops that were en route to Europe. The traditions of engineering and experimentation established in the late 1800s at the Fort continued despite the relocation of the Engineering School of Application. Most of the research was focused on torpedoes, naval mines, and antiaircraft technologies (Timelines, Inc. 1989a).

The period between World War I and World War II was one of housekeeping. Many of the facilities were upgraded and modernized. Roads were improved and the total land area of the Fort was increased by filling in wetlands areas. Twenty-three new buildings were constructed between 1933 and 1939 in response to the threat of war (Figures 12 and 13). This number includes six housing facilities and 17 utilitarian structures ranging in function from electrical transformer stations to all-purpose garages (Trieschmann and Gettings 1997). The defense mission at the Fort was largely anti-aircraft at this time and by 1938, the batteries were completely abandoned.

The onset of World War II again led to increased activity at the Fort. In 1941, the Eastern Defense Command established its Anti-Aircraft Command at Fort Totten. This group was responsible for aerial research and development and, accordingly, the Fort received the first radar installation on the east coast (Alperstein 1977). This group was also responsible for processing, training, and assigning units during the war. Numerous troops moved through the Fort. To accommodate the large number of soldiers, approximately 60 buildings were erected during this time, most of which were temporary (Trieschmann and Gettings 1997).

3.2.4 Post-World War II to Present

Since the close of World War II, activities at Fort Totten have included health care, anti-aircraft defense, and training and recruitment. Between 1947 and 1949, the Post served as the Fort Totten General Hospital. In this role, Fort Totten provided medical services for military personnel and their families living in Queens and the Bronx. Modern anti-aircraft defense units were moved to Fort Totten in 1950. In 1954, the First Region Army Air Defense Command was organized at Fort Totten to provide anti-aircraft defense for



Source: U.S. Army Corps of Engineers, St. Louis District 1996.
Note: Not to scale.

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Figure 9. 1904 Map of Fort Totten.

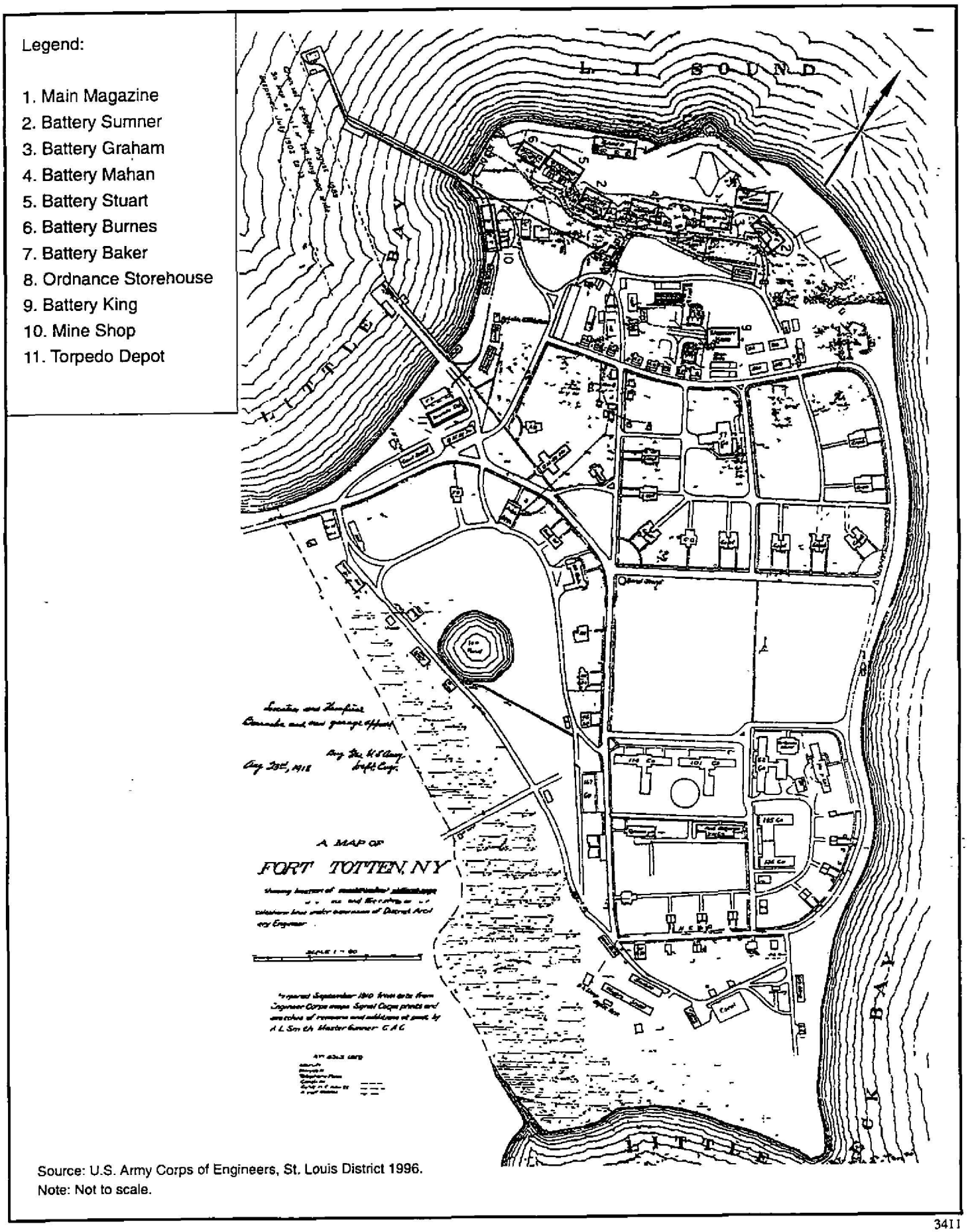

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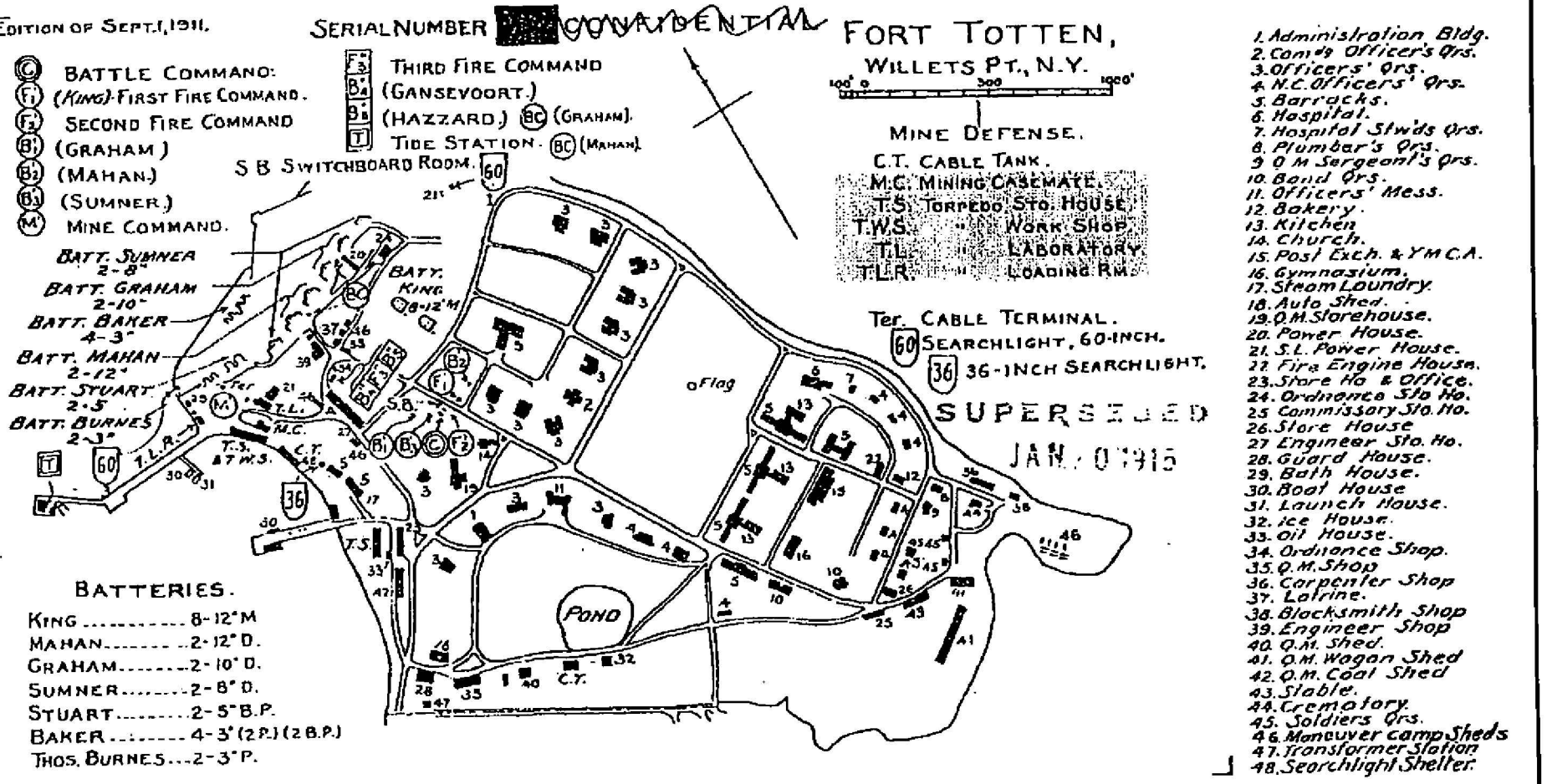
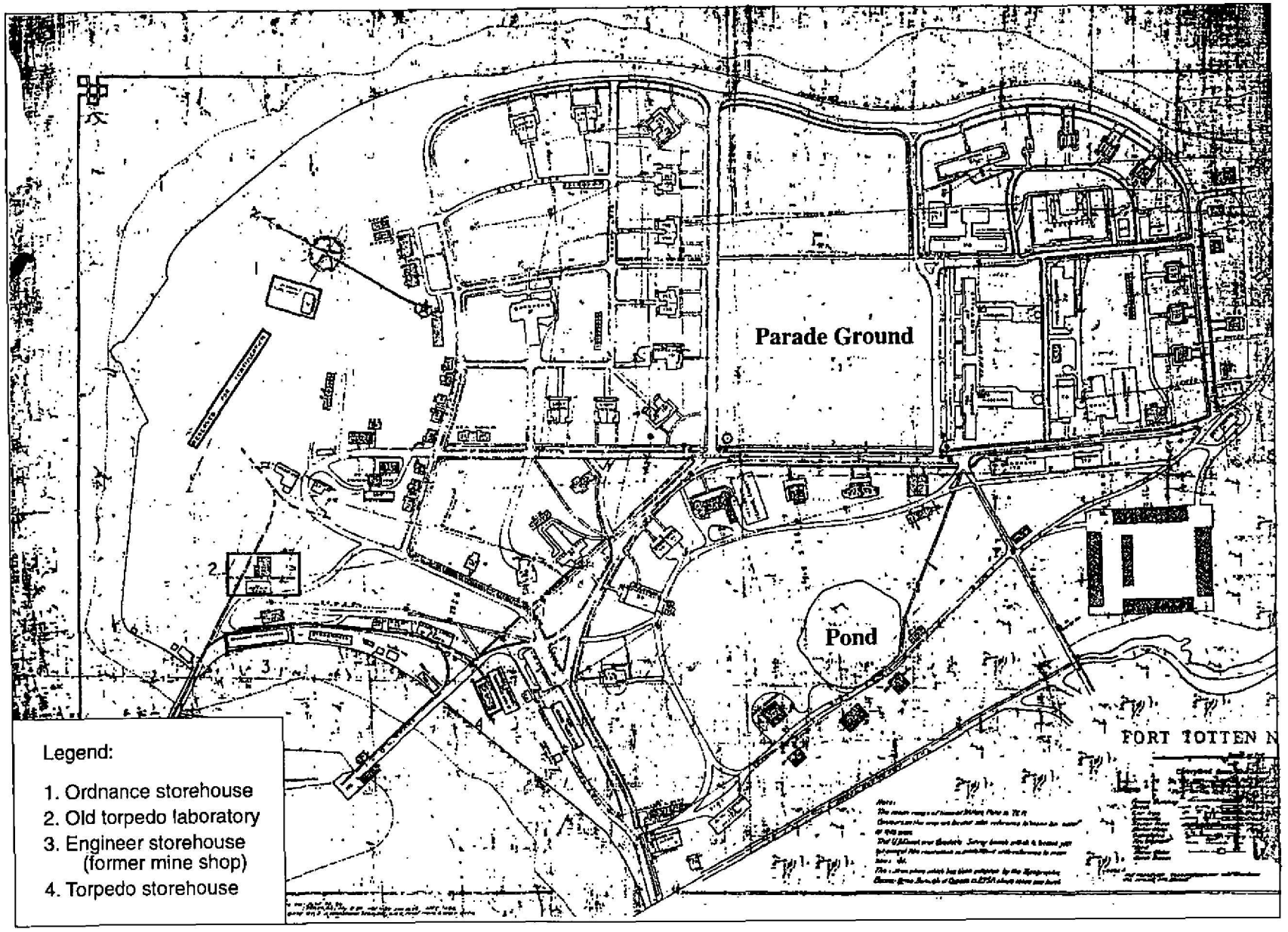
Figure 10. 1910 Map of Fort Totten.



Source: U.S. Army Corps of Engineers, St. Louis District 1996.

Figure 11. 1911 Map of Fort Totten.



Source: U.S. Army Corps of Engineers, St. Louis District 1996.
Note: Not to scale.

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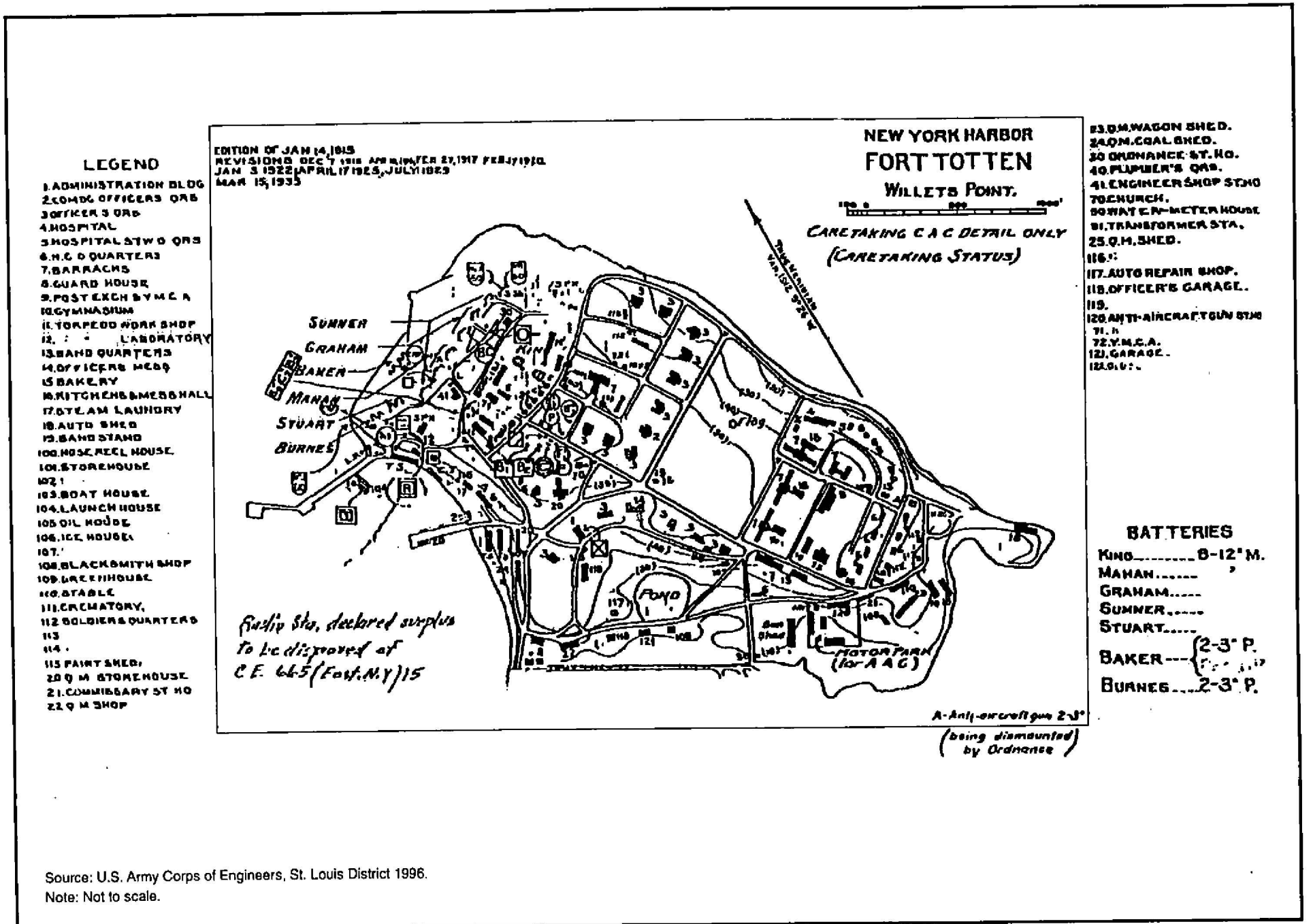
Figure 12. 1928 Map of Fort Totten.



Source: U.S. Army Corps of Engineers, St. Louis District 1996.
Note: Not to scale.

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Figure 13. 1935 Map of Fort Totten.

New England, New York, New Jersey, and U.S. bases in Greenland. By 1961, the responsibility for defending Virginia, Pennsylvania, and Washington D.C. was also Fort Totten's. This mission was terminated at Fort Totten in 1967.

Since then the Fort has been on inactive status. Since 1969 it has served as headquarters for the 77th Army Reserve Command. This is the largest Army Reserve Corps center in the U.S. Buildings associated with this mission are not included in the BRAC parcel.

3.3 PREVIOUS INVESTIGATIONS

3.3.1 Archaeological Sites

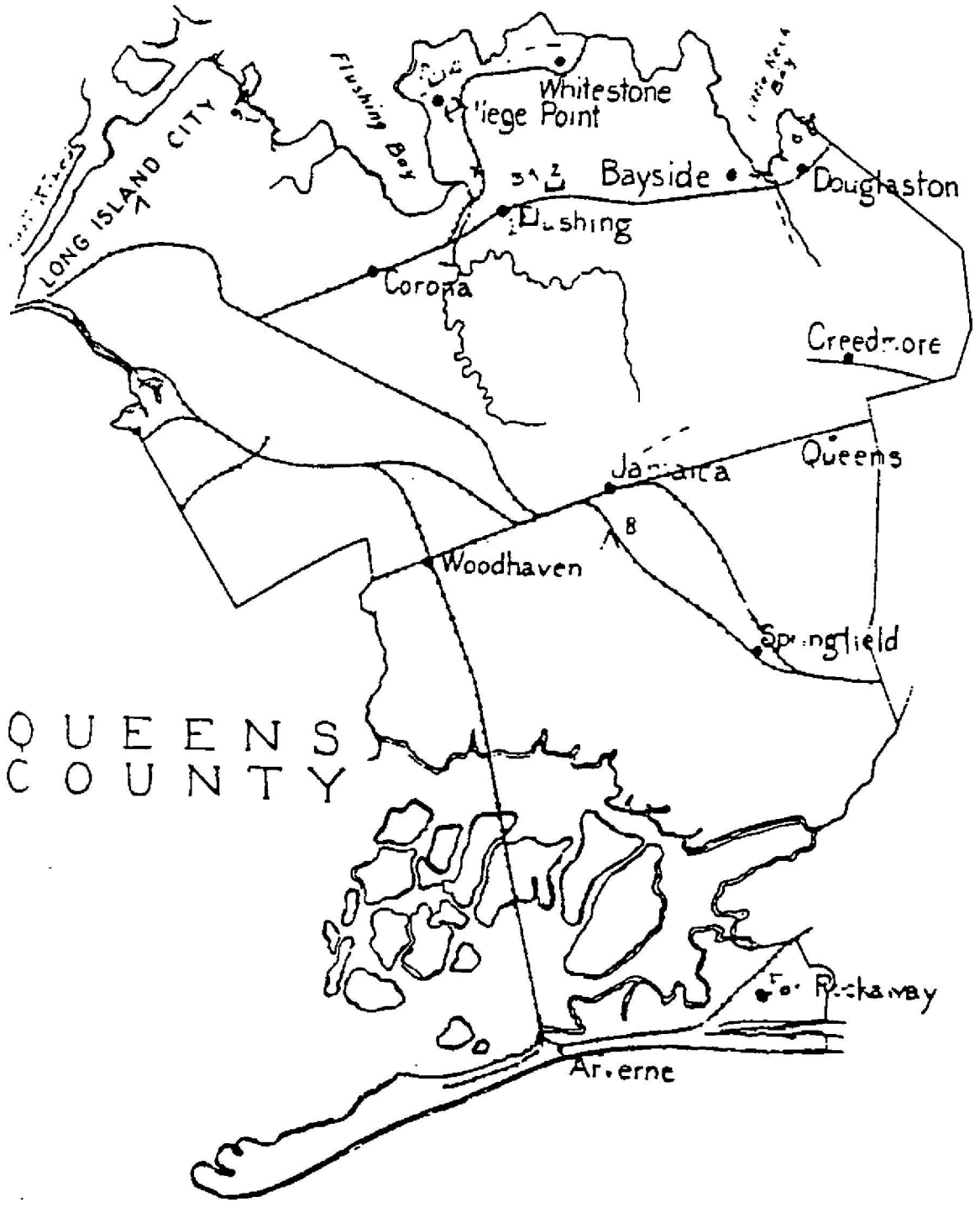
Information on known archaeological sites near Fort Totten was provided in part by the New York State Museum and the New York State Office of Parks, Recreation and Historic Preservation (Appendix E). Few archaeological investigations have been conducted in the vicinity of the project area. No prehistoric archaeological sites and one historic site, a Civil War Period earthwork, have been identified within a 1.6-km (one-mile) radius of the project area. The earthwork, called the Glacis Site, is actually located at Fort Totten, outside of the project area, on a parcel of land occupied by the U.S. Coast Guard (New York State Office of Parks, Recreation and Historic Preservation 1985).

Site files at the New York State Office of Parks, Recreation and Historic Preservation contain information on several prehistoric sites in the general vicinity of the project area. The Gugliotta Site, located in Bayside near the Cross Island Parkway, is a Woodland Period shell midden which produced decorated potsherds, projectile points, and bone fragments (Division for Historic Preservation, New York State Parks and Recreation 1969). Other shell middens identified in the vicinity of the project area include the Kaesar (or Pelham Bridge) Site on the Hutchison River and the High Island Site on Long Island Sound. The Kaesar site produced chert and quartz flakes, deer bones, and grit-tempered pottery linking it to the Woodland Period. No artifacts were found in association with the High Island shell midden.

3.3.2 Cultural Resources Investigations

Early prehistoric investigations include Arthur C. Parker's "The Archaeological History of New York" (1920), and Reginald Bolton's "Indian Life Long Ago in the City of New York" (1934). Both of these publications contain maps depicting the location of Native American settlements (Figures 14 and 15). Neither of these maps depict settlements on the ridge that forms the project area. Recent investigations include Phase IA evaluations of project areas along the Long Island Expressway between Maurice Avenue and the Grand Central Parkway (Pickman 1983) and in the Jamaica portion of Queens County (Edwards and Kelcey Engineers, Inc. and Historic Preservation 1996).

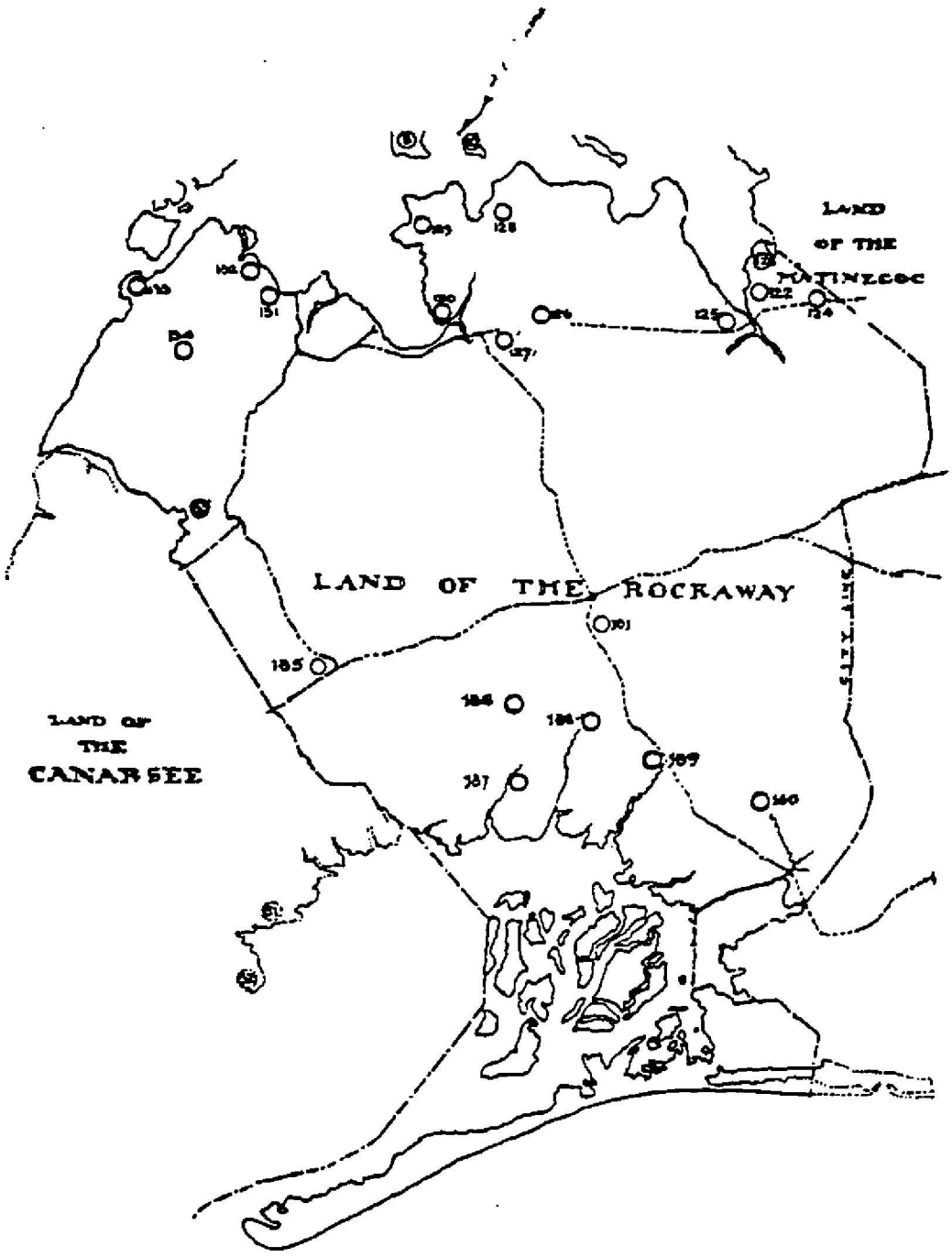
A listing of reports directly applicable to Fort Totten's history and cultural resources is provided in this Section, and also in Section 10.0.



Source: Parker 1920.
Note: Not to scale.

3402

Figure 14. 1920 Illustration of Archaeological Sites in Vicinity.



Source: Bolton, 1934.
Note: Not to scale.

3408

Figure 15. 1934 Illustration of Archaeological Sites in Vicinity.

"A Command Guide to the Management of Historic Resources at Fort Totten," prepared by Timelines, Inc. in 1989.

A Cultural Resource Overview and Management Plan for Fort Totten prepared by Louis Berger and Associates in 1986.

Environmental Baseline Survey Report Fort Totten, New York (draft) prepared for the U.S. Army Corps of Engineers by Woodward-Clyde Federal Services in 1996.

Fort Totten and the Coastal Defenses of Eastern New York prepared by William C. Gaines of Scarp Associates in 1996.

Fort Totten, New York An Evaluation of its Historical Significance prepared by John H. Lindenbusch, Executive Director of the Long Island Historical Society, no date.

"Fort Totten at Willet Point" prepared by David M. Alperstein, no date.

"Historic Preservation Plan for Fort Totten" prepared by Timelines, Inc. in 1989.

Historic Architectural Inventory Survey and Determination of Eligibility Fort Totten Bayside, Queens County, New York (draft) prepared by Laura Trieschmann and Kathryn Gettings of Traceries in 1997.

Installation Assessment of New York Command and Fort Hamilton, Brooklyn, New York, and its Sub-installations: Fort Wadsworth, Staten Island, New York; and Fort Totten, Flushing, New York prepared by Environmental Science and Engineering, Inc. in 1984.

Ordnance, Ammunition and Explosives Chemical Warfare Materials Archives Search Report prepared by the U.S. Army Corps of Engineers St. Louis District in 1996.

"New York Parks, Recreation and Historic Preservation Inventory Form for the State and National Register of Historic Places: The Fort at Willets Point/Fort Totten" prepared by Goldstone and Hinz Architects, P.C. for the Bayside Historical Society in 1983.

These documents provided information on changing missions at the Fort since its establishment in 1857; detailed information on the construction and functions of fortifications; land use histories; and discussions of non-defensive facilities within the Fort. Another source of information was Mr. Jack Fein, Chief Warrant Officer, U.S. Army (Retired), the Fort's Historian and curator of the Fort Totten Military Museum. He

maintains an extensive collection of photographs, documents, and artifacts relevant to the Fort, all of which are available for public review.

3.4 SENSITIVITY ANALYSIS

3.4.1 Prehistoric Resources

The New York State Museum has identified the project area as having, "a high probability of producing prehistoric archaeological data" based on environmental conditions. The terrain in the project area is similar to terrain in the general vicinity where recorded archaeological sites are indicated and the physiographic characteristics of the location suggest a high probability of prehistoric occupation or use. The project area sits upon a ridge jutting into Long Island Sound, Little Bay, and Little Neck Bay. The East River channel is to the north and the peninsula was originally connected to the mainland by tidal marshes and mud flats. These water bodies would have provided an excellent source of fish, shellfish, waterfowl, and wetland floral species. Woodland species (floral and faunal) were probably present on the point as well, although fresh water may have been a problem (high tides bring salt water to the beaches twice a day and there are no natural surface water bodies at Fort Totten). The northern beaches of Long Island are characterized by gravel and cobbles, some of which may have been suitable for stone tool manufacture. Some parts of the project area are well drained and suitable for habitation. Given this information, there is a high probability that prehistoric use of the land at Fort Totten did occur, and may have included subsistence activities and possibly lithic procurement. The probability for long term prehistoric occupation is somewhat compromised by fluctuating salinity levels in the water.

The issue, however, is whether or not this property has the potential to contain vestiges of prehistoric occupation. The project area, for the most part, does not. First, the northern portion of Fort Totten has been extensively disturbed by defense activities. The original hillside was cut away during the 1860s to make room for the stone fort or water battery. The hillside behind it was essentially removed during the construction of the Endicott Period concrete batteries. This disturbance most likely extends from the waterline south to Abbot Road and probably beyond (Gaines 1996; Louis Berger and Associates 1986). With the exception of the parade ground, the area from Abbot Road south to the reserve enclave has been extensively disturbed by construction activities. The eastern shore line has been reworked and filled to reinforce Shore Road and was identified as having a low preservation potential in Fort Totten's cultural resources management plan (Louis Berger and Associates 1986).

The parade ground, which has not been the site of extensive military construction activities, is one of the few portions of the project area with the potential for intact prehistoric remains. Even so, historic clearing and plowing may have compromised any sites in the parade ground. In addition, the cultural resources management plan identifies the southern portion of the Fort as having a medium potential for the preservation of prehistoric archaeological deposits. This area is currently filled and paved but may have

been exposed dry land 5,000 years ago (Louis Berger and Associates 1986). Similarly, the area south of Buildings 143, 144, and 147 has been identified as having a high potential for prehistoric resources below fill and pavement (Louis Berger and Associates 1986). Both of these areas fall outside of the BRAC parcel, within the U.S. Army Reserve Center enclave.

3.4.2 Historic Resources

Historic period occupation of Fort Totten is well documented. The property was occupied continuously from 1639, first by the Thorne family and then the Willets. Both the Thorne and Willett families farmed the land—the Willets were nurserymen. Structures associated with both families were standing when the U.S. government purchased the land in 1857. The Willets villa (Building 211) stands today, although not in its original location. The same forces that compromise the potential for prehistoric remains at Fort Totten exist for the historic period. Both structures are thought to have stood in the northern portion of the peninsula—that area which has been extensively disturbed through construction and reconstruction of fortifications.

While the pre-military historic occupation of Fort Totten is unlikely to be represented archaeologically, the military period undoubtedly is. Fort Totten's cultural resources management plan identified the northern portion of the peninsula containing the batteries and the land immediately around Building 506 as high probability areas. According to that plan, features associated with the construction of the stone fort and other defensive facilities may exist in the area under thick fill deposits. However, this is doubtful, as the stone fortifications were probably constructed directly onto bedrock, and the concrete fortifications have very steep foundations. The land between Walter Reed Road and Weaver Avenue, and Story Avenue and Sergeant Beers Avenue is identified in the cultural resources management plan as a medium probability area, based on the assumption that the military has built and rebuilt a number of buildings in the areas over time (Louis Berger and Associates 1986). It is possible that buried structural remains or other features may exist around the standing buildings. Subsurface testing of the land around Buildings 635 and 637 and near the intersection of Chapel and Abbott Road by Louis Berger and Associates produced no evidence of a site (Louis Berger and Associates 1986). Therefore, these locations have been defined in the cultural resources management plan as low sensitivity. Again, according to the cultural resources management plan, another low-sensitivity area lies between Lee, Shore, Jarman, and Abbott Roads, and Murray Avenue because of extensive disturbance caused by construction of both the historic military earthworks and the modern residences. Also, archaeological testing by Louis Berger and Associates identified displaced fill throughout this area (Louis Berger and Associates 1986).

The parade grounds are not specifically addressed in the cultural resources management plan but the small area to the east of them is. Based on historic map projections the area was identified as having medium potential for archaeological sites. During the early part of the Civil War, soldiers camped on the peninsula prior to being dispatched to the front.

Toward the end of the Civil War, a number of facilities were constructed around the parade ground for housing and use as a hospital. Because the parade ground (and the area immediately surrounding it) has remained somewhat intact since the late 1800s, it has been identified in the cultural resources management plan as having a high potential for historic period military archaeological deposits (Louis Berger and Associates 1986).

4.0 RESEARCH DESIGN

Prior to beginning the archaeological fieldwork, a research design for excavations was developed based on discussions with the COE Point of Contact, Dr. Neil Robison; guidelines developed by the New York Historic Preservation Office; an examination of archival records, maps, and reports describing the environmental setting; prehistoric and historic contexts; and previous research near and within the project area, as discussed in Sections 2.0 and 3.0.

The resulting research design provided for systematic shovel testing across 6 ha (15 acres) of open and undeveloped areas within the BRAC parcel. These areas had the highest potential for the presence of undisturbed archaeological remains, and were thought to have the greatest potential for redevelopment when the property is excessed. The areas chosen included the parade ground, the open areas immediately to the east of the parade ground, and some open areas toward the northern portion of the base. Three parts of the BRAC parcel were not included in the subsurface testing because they had been identified as potential unexploded ordnance (UXO) hazards. These areas are: (1) the northern portion of the peninsula where the batteries are located; (2) the area around Buildings 600 to 604 between Willets Street and Totten Avenue; and (3) the land from Sergeant Beers Avenue south to the water (U.S. Army COE 1996). Other portions of the excess parcel were disturbed due to construction, parking areas, and the like. Finally, the eastern coastal areas of the parcel were not tested based on recent disturbance and the presence of fill deposits exceeding 1 m (3.28 ft) in depth (Louis Berger and Associates 1986).

5.0 FIELD METHODS AND PROCEDURES

The survey involved the excavation of shovel test pits (STPs) at regular 15.24-m (50-ft) intervals across undeveloped portions of land within the BRAC parcel to search for intact archaeological deposits. The project area was divided into six sections (A through F) based on existing landmarks or topographical features (Figure 16). In each section, a grid was established using a datum, compass, and measuring tapes. STPs within the grid were given unique coordinates and/or numbers based on their location relative to the datum. This information was then applied to a field map for reference.

STPs were excavated by hand methods using trowels and shovels. They measured approximately 43 cm (17 in) wide, and ranged in depth from 22 cm to 149 cm (8.6 in to 4.84 ft) deep, depending on stratigraphy. Soils were removed stratigraphically and screened through 0.64-cm (0.25-in) hardware cloth. Standardized field forms were

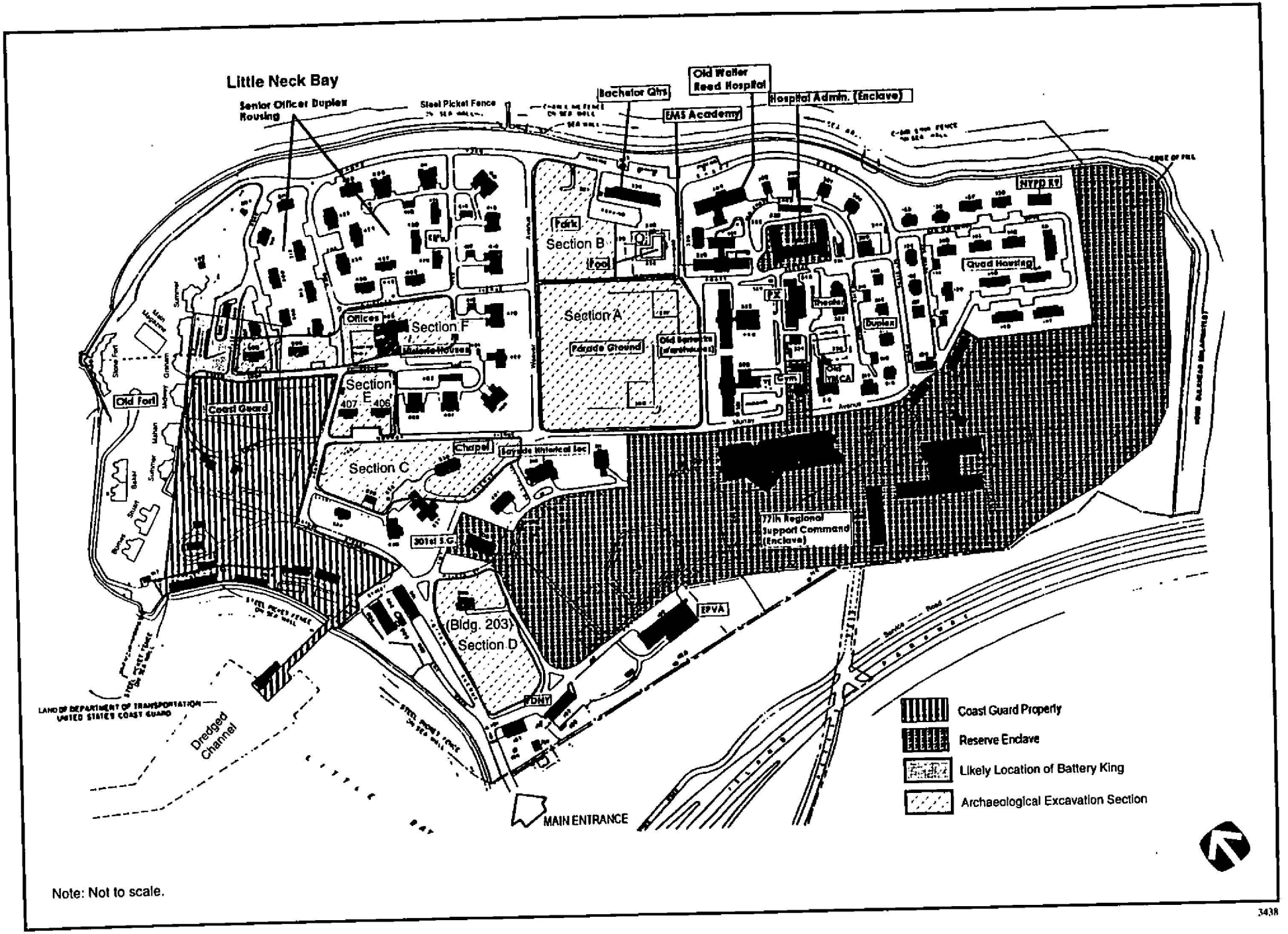


Figure 16. Locations of Archaeological Excavation Sections.

completed for all STPs excavated. Information recorded on each form included a description of the individual soil profile (depth, soil type, Munsell reading) and a list of artifacts recovered. The excavator's initials and date of excavation were also recorded on each form.

6.0 RESULTS

6.1 SECTION A EXCAVATIONS

Section A is the parade ground—one of the few open and undeveloped tracts of land within the project area. Military maps reviewed indicate that the area has not been subjected to extensive filling or grading, as the contour lines of the 19th-century maps closely resemble those of the 1979 U.S.G.S. Quadrangle map. None of the military maps reviewed depict any structures within the parade ground. Presumably during the 19th and 20th centuries, the U.S. Army used this area primarily for drills and physical training.

Section A is roughly rectangular, measuring about 206 m by 195 m (675 ft by 640 ft). It is bordered to the south by Story Avenue, to the west by Murray Avenue, and to the north by Weaver Avenue. The eastern boundary is a sidewalk which separates the parade ground from the lawns surrounding Building 336. Section A is a well maintained flat grass-covered area with a baseball field in the southwest corner and a basketball court in the southeast corner. The central portion is used on weekends as a soccer field. There are a few stands of bleachers around the baseball field and in the northern part of the Section, near Weaver Avenue. Two rows of mature trees, approximately 6 m (20 ft) apart, line Weaver Avenue and resemble an old road bed.

The datum was established 22.86 m (75 ft) directly across the street from the front door of Building 322. From the datum, a total of 104 STPs were placed within Section A using magnetic directions (Figure 17). Each STP was given a unique number and set of coordinates relative to the datum. (The number 71 was erroneously assigned to STPs in two locations, at grid N600 E50 and at N600 E150).

Seventy of the STPs within Section A were positive and 368 artifacts were recovered in total. Material ranged from modern garbage, such as plastic and foil, to quartz flakes, and artifacts were widely distributed throughout the Section. A total of three prehistoric artifacts were found in Section A—STP 59 (N450 E150) produced one cortical quartz flake; STP 83 (N250 W100) produced one small quartz flake fragment; and STP 93 (N400 W100) produced one whole quartz flake. Historic material was recovered from the same level as the flake in STP 59 but not in STP 83 or STP 93. Two pieces of black chert were recovered from Section A as well (STPs 59 and 80), however, neither of the pieces exhibit any evidence of cultural modification. The density and distribution of the prehistoric materials recovered do not suggest the presence of a prehistoric site eligible for listing on the NRHP within the Section.

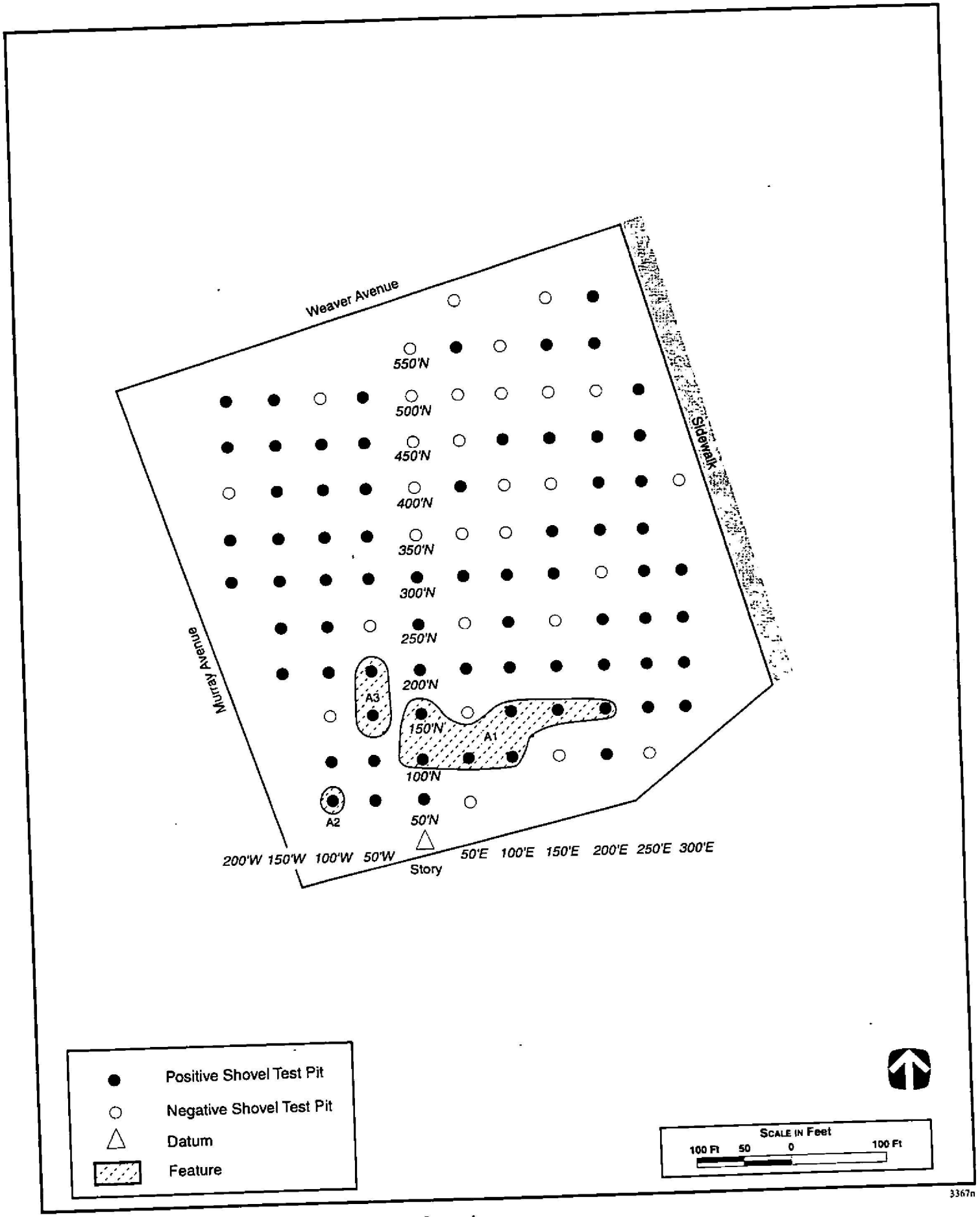


Figure 17. Section A Excavations and Feature Locations.

A wide variety of historic materials was recovered in Section A. Ceramics included two possible creamware fragments, nine redware fragments (6 glazed and 3 unglazed), four pieces of hard paste porcelain (including 1 chicken figurine fragment and a drawer handle), 4 pieces of soft paste porcelain, one Rockingham fragment, 44 pieces of whiteware, and one industrial type earthenware pipe fragment. In addition, three pieces of kaolin pipe bowl were discovered in Section A, two with decoration and one very small plain fragment. The fragment recovered from STP 66 (N500 E250) is slightly less than 1/8th of an inch thick, has a rouletted rim, and a barely distinguishable maker's mark.

Glass recovered included 35 container fragments (aqua, brown, colorless, dark green, and lavender pieces were found), 46 flat fragments of varying thickness and color, one piece of milkglass, one piece of chimney lamp glass, and one thick, curved red glass fragment. The flat glass was distributed fairly evenly throughout the Section, and only two of the STPs produced more than two pieces (STP 37 at N250 E250 contained six pieces and STP 77 at N150 W50 contained three). About two-thirds (62 percent, or 22 pieces) of the container glass was found in the southern portion of the Section, on transects bearing north coordinates less than 76.2 m (250 ft).

Architectural debris discovered within Section A included nails (47 cut, 6 wire, and 33 unidentifiable), brick and mortar fragments (35 brick fragments and 7 mortar samples were retained), and miscellaneous hardware such as screws and spikes. Sixteen pieces of unidentifiable ferrous material were also retained. Some structural remains were identified, possibly *in situ*, at a depth of 104 cm (41 in) below surface in STP 74 (N50 W100).

Other items of interest discovered in Section A include three pocket knife fragments, three glass buttons, a lead weight (resembling a fishing sinker), brass shell casing fragments (spent), a buffalo head nickel (date not discernible), and a piece of leather strapping. Food related items include 13 bivalve shell fragments (most of which are probably oyster), 1 piece of bakelite, and 33 bone fragments. Twenty-nine of the bone fragments came from STP 22 (N150 E150). Some of the bones have butcher marks and their size suggests that they are porcine.

Three features were identified in Section A, all in the southern portion of the Section along Story Avenue (Figure 17). Feature A1 is a thick deposit or concentration of stones and cobbles with numerous historic artifacts. These deposits may be from a hut or campsite associated with Camp Morgan, which would date them to approximately 1862 to 1865. The potential for this feature to contain intact hearth features is low, but possible. This feature was identified in STPs 3 (N100), 4 (N150), 15 (N100 E50), 16 (N100 E100), 21 (N150 E100), 22 (N150 E150), and 23 (N150 E200). The second feature, Feature A2, was identified in STP 74 (N50 W100) and is a layer of brick and mortar discovered at 66 cm to 99 cm (25.7 in to 38.6 in) below surface. This feature may be the remains of a foundation. Artifact recovery from Feature A2 was limited to non-diagnostic artifacts, but its location suggests it may also be a building associated with the Civil War Period occupation, or a later sentry post. The third feature, Feature A3, was identified in STPs

77 and 79 (N150 W50 and N200 W50, respectively). This may be a fill deposit, but the STPs were excavated to depths greater than 1 m (3.28 ft) and produced 19th-century artifacts throughout. The fill may be associated with construction of temporary camp or hut sites, related to Camp Morgan. None of the military maps reviewed depict any structures in this area. In sum, these features may be associated with the Civil War training mission—Camp Morgan.

6.2 SECTION B EXCAVATIONS

The open space directly east of the parade ground was designated Section B. It is bordered to the north by Weaver Avenue, to the east by Shore Road, to the far south by Story Avenue, and to the west by a sidewalk. This sidewalk serves as Section A's eastern boundary and separates the two test areas. Military maps suggest that two buildings stood within the Section between the years 1875 and 1904. Maps dating later than 1904 depict only Buildings 336, 337, 338, 339, 340, 342, and 343. These buildings are still standing and are a bachelor officers quarters (336), a shed (337), a swimming pool (338), and four buildings associated with the pool. There is also a large paved parking lot to the west of Building 336. All of the buildings are vacant. The grounds surrounding them comprise Section B.

The Section slopes gently to the east, toward Little Neck Bay. It is a well maintained grass-covered park-like area complete with a gazebo and grill. Because the land slopes, it is of limited use for recreational activities but is used occasionally by the military and civilians for physical training and exercise.

A datum was established for Section B on Weaver Avenue, 42.9 m (141 ft) directly across the street from the front door of Building 415. From this point a grid was established across the area using magnetic directions. No STPs were placed in close proximity to the standing structures or pool. It is evident that the land around the buildings and pool has been subject to extensive filling and grading. Building 336 appears to be built into a bank and the pool seems to be situated on a man-made rise. A total of 39 STPs were placed within the area, each having a unique number and set of coordinates relative to the datum (Figure 18).

Thirty of the STPs in Section B were positive and 836 artifacts were recovered in total. Six prehistoric lithic flakes were found, all quartzite, three from STP 33 (W100 S150) and three from STP 30 (W100 S100). In both cases the flakes were found in the same stratigraphic level as historic material. Historic ceramics recovered include four pieces of stoneware with Albany slip, two Rockingham fragments, seven redware sherds (one possible tobacco pipe fragment, one unglazed refined fragment, one piece with a clear glaze, and four unglazed utilitarian-type fragments), three pieces of porcelain, one yellowware fragment, 27 pieces of whiteware, and 91 ironstone fragments. Twenty-five ironstone fragments were recovered from STP 13 (S50 E100) including base and lid fragments from an apothecary jar. STP 32 (S150 W50) produced 58 ironstone fragments.

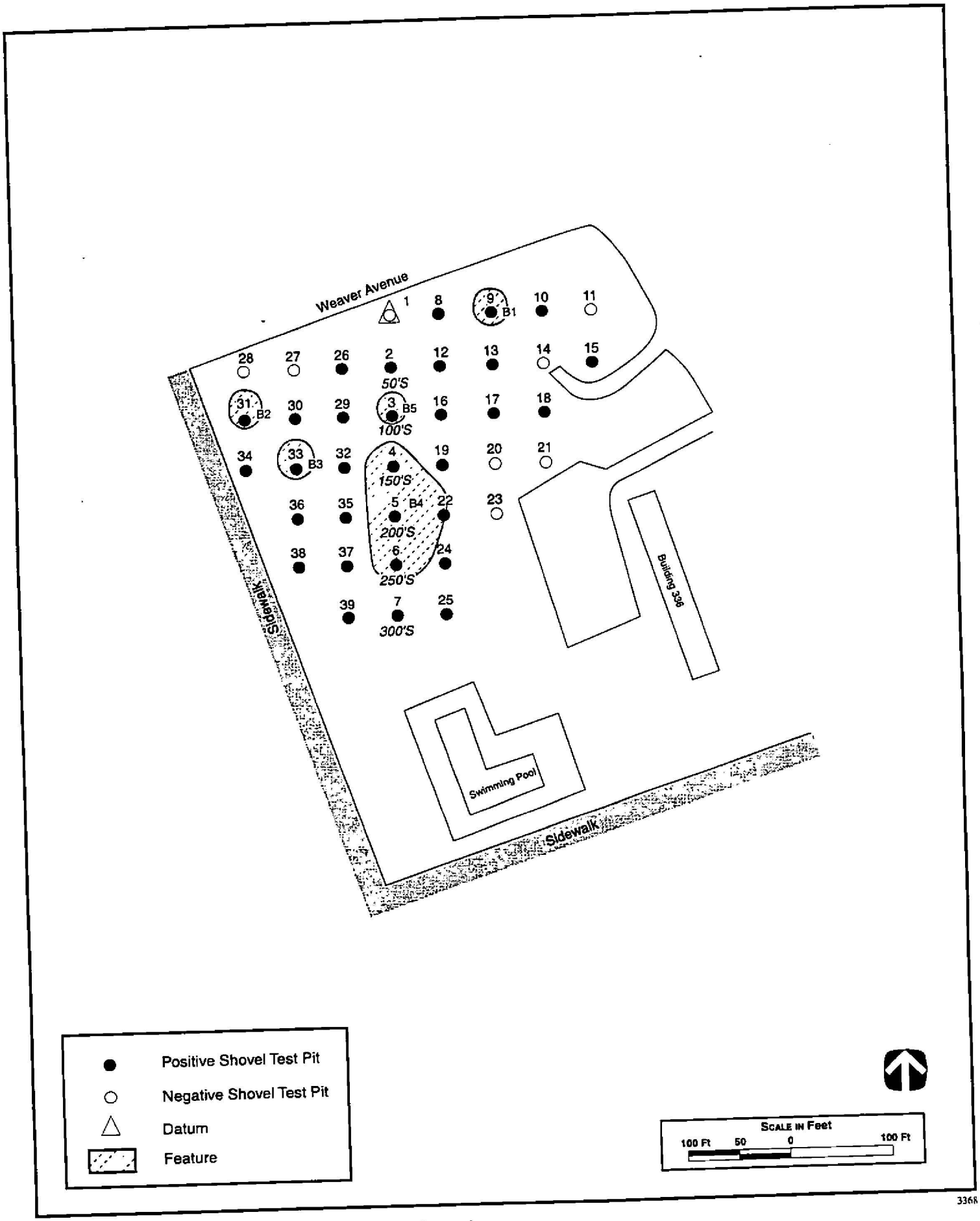


Figure 18. Section B Excavations and Feature Locations.

In addition, seven kaolin tobacco pipe bowl fragments and two stem fragments were found in the Section. Eleven earthenware drainpipe fragments were also recovered.

The glass assemblage was equally varied. A total of 272 glass items were found, including 124 pieces of flat aqua glass, one piece of colorless flat glass, 139 pieces of container glass (33 colorless, 52 aqua, 1 bluish green, 15 dark green, 10 light green, 22 amber, 2 brown pharmaceutical, and 4 lavender), one piece of chimney lamp glass, and two milkglass sherds. The glass was found widely distributed throughout the area although one STP (STP 31, S100 W150) produced 11 fragments in one level.

Architectural debris and hardware comprised forty percent (337 objects) of Section B's artifact assemblage. This includes nails (55 cut, 3 wire, and 133 unidentifiable fragments), 70 brick fragments, five mortar samples, three pieces of concrete, one tile fragment, and a large cut stone. Hardware includes 59 pieces of unidentifiable ferrous material, a metal pipe, four spikes, and two pieces of lead. Eleven slag samples were retained.

Other artifacts of interest discovered in Section B include a variety of faunal items. Eighteen bivalve (most probably oyster shell) fragments, 19 bone fragments, and one piece of ivory were found. Military artifacts recovered include a shell casing, a set of dog tags, and one Union Army dresscoat cuff button with an eagle insignia.

Potentially intact structural features were identified in three STPs within the Section and five features were identified (Figure 18). A large cut stone (Feature B1, probably a foundation stone) was identified lying flat at a depth of 74 cm (29.13 in) below surface in STP 9 (E100). This feature may be related to one of the hospital buildings, dating from 1862 to 1865, and there may be the potential for intact deposits in this area. Impenetrable structural remains (bricks, mortar, and stones) were identified in STP 31 at W150 S100 at 50 cm (19.5 in) below surface. This feature, Feature B2, resembles a dwelling that may be the Chief Surgeon's house, or another building associated with the hospital. The structure may again date from 1862 to 1865, or possibly later.

Brick, nails, mortar and burnt wood were identified in association with cut stones at a depth of 142 cm (4.7 ft) below surface in STP 33, W100 S150 (Feature B3). Feature B3 may be part of the same building as Feature B2.

A midden-like feature, Feature B4, was identified in four STPs within the Section, numbers 4 (S150), 5 (S200), 6 (S250), and 22 (S200 E50). The fill was very loose and fine, it contained ground shell, mortar, and ash and a variety of artifacts including bottle and vessel glass, ironstone, whiteware, buttons, bone, shell fragments, and a variety of metal objects. In some places the feature fill extended to a depth of about 1 m (3.28 ft). This midden may be a dump or trash pit, also associated with the hospital, with dates of from 1862 to 1865, or slightly later. Another feature, Feature B5, was identified in STP 3 (S100). This one produced fewer artifacts and the feature fill was a very dark loamy soil. Excavations of this test pits were closed at 1 m (3.28 ft) but subsoil was not reached. This

last feature may be remains of a privy or well; again, it is probably associated with the 19th-century hospital.

Buildings are depicted in this area on the 1866, 1879, and 1890 planning maps (these maps show *proposed* building locations) and on the 1875, 1890, and 1904 maps. From 1910 forward, no buildings are depicted in the location of the features.

6.3 SECTION C EXCAVATIONS

Section C is bounded by Murray Avenue to the east, Totten Avenue to the southwest, and Chapel Road to the north. A fair amount of open space exists around the Chapel (Building 638) and historic maps reviewed indicate that this has been the case since the military acquired the land. About 20 STPs were excavated in Section C to test for intact archaeological deposits and confirm disturbance reported in the cultural resources management plan (Louis Berger and Associates 1986) (Figure19).

In comparison to Sections A and B, findings in this area were scant. Some of the STPs had disturbed soil profiles, and 15 of the 20 produced artifacts. A total of 73 artifacts were recovered. This number includes 14 assorted ceramics (one possible white salt-glazed stoneware fragment, five pieces of coarse porcelain, one blue transferprint pearlware rim fragment, four pieces of whiteware, two stoneware fragments, and one ironstone fragment); aqua and clear vessel glass (eight pieces); aqua flat glass (six fragments); assorted metal objects (one piece of copper sheeting, a brass shell casing, seven cut nails, one iron rod fragment, five unidentified nails, four wire nails, and one washer); slag; and plastic.

One deep circular feature, Feature C1, was identified in STP C20, near the Chapel (Figure 19). Artifact recovery indicates it was most likely associated with the military occupation of the tract (coal, slag, brick fragments, roofing tin, slate, and shell fragments were recovered). It was approximately 30 cm (11.81 in) wide and 60 cm (23.62 in) deep and resembles a post hole. Few artifacts were recovered in this Feature and it does not appear to be significant. Also, no other features were identified in association with it. A second feature (Feature C2), an impenetrable level of brick and mortar, was identified at 34 cm (13.38) below surface in STP C1. Shovel test pit C2 produced all seven of the cut nails found in Section C. Items found in both STPs may be associated with several fire control stations depicted in the same location on maps dating to 1911 and 1935. However, the remains were not intact and are probably not significant. The fire control stations were built in 1903 according to the then-new 'Barrancas System' of fire control. Both primary and secondary stations were built near each battery, and each was equipped with a Depression Position Finder. The primary stations measured 48.80 m^2 (16 ft^2), and the secondary stations measured 30.48 m^2 (10 ft^2) (Gaines 1996). In the same general area, near the intersection of Bayside and Totten Streets, is the single grave of Charles Willet, a former landowner. According to the base historian, other members of the Willet family are buried in area cemeteries, not on the Post.

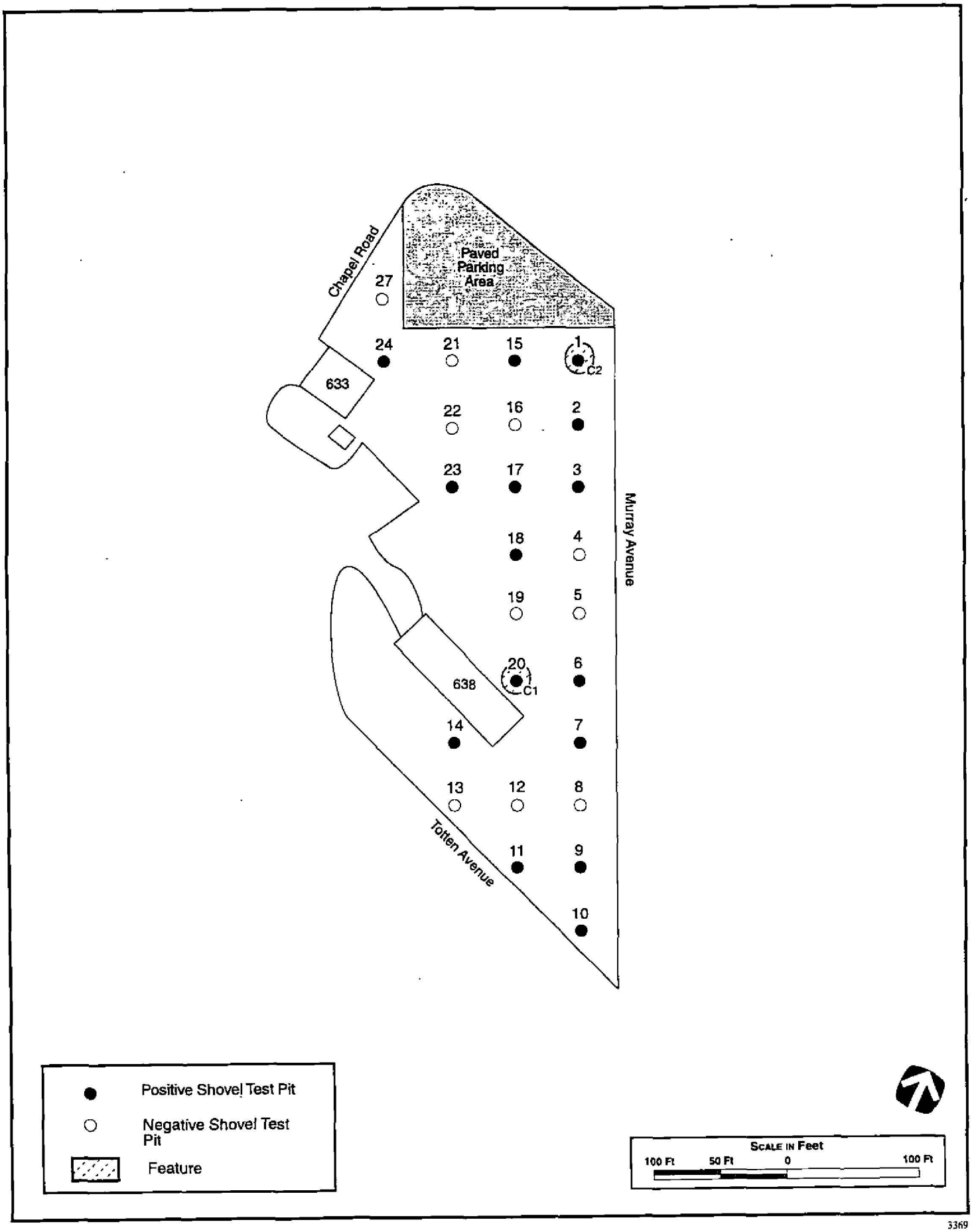


Figure 19. Section C Excavations and Feature Locations.

6.4 SECTION D EXCAVATIONS

Another set of STPs was placed within the open space around Building 203 (Section D), particularly in the high ground in the center of the field (Figure 20). Eleven of the 22 STPs excavated produced artifacts. A total of 27 items were found, primarily near Building 203 and along Totten Avenue. Artifacts include one pearlware fragment, one piece of porcelain, one unglazed redware sherd, five pieces of whiteware, a kaolin pipe stem fragment, three pieces of melted glass, one aqua and one clear vessel glass fragment, one olive bottle glass fragment, four pieces of brick, and several unidentifiable iron objects. No features or sites were identified in this Section.

6.5 SECTION E EXCAVATIONS

Section E is the open space around Buildings 406 and 407 (Figure 21). An arbitrary datum was established east of Building 406 from which the other STPs were placed at 14.28-m (50-ft) intervals. A total of seven STPs were excavated in the area, six in the backyard area and one near the corner of Murray and Abbot Roads. Six of the seven STPs produced artifacts and 17 items were recovered in total. Ceramics were limited to two whiteware fragments and some brick; metal items included nails (cut, wire, and unidentifiable), a copper alloy ring, and one iron spike; glass included a Coke bottle fragment, one brown bottle glass fragment and four pieces of window glass. One oyster shell fragment and one bone fragment were also found. One feature, Feature E1, which is probably a post hole, was identified in STP E3 (Figure 21). No diagnostic artifacts were recovered in association with this Feature, and so no date or period could be determined.

6.6 SECTION F EXCAVATIONS

Section F is a disjointed area stretching from Walter Reed Drive north to Lee Road, between Sylvester and Whistler Avenues (Figure 22). The first eight STPs excavated were placed in an open area south of Building 405. This area was tested because it is open and undeveloped, and was identified in the cultural resources management plan as having medium potential for the presence of archaeological sites (Louis Berger and Associates 1986). Four additional test pits were placed around the intersection of Whistler Avenue and Abbot Road because this area was identified in the UXO evaluation as a possible hospital site (COE 1996). Shovel test pits were also placed behind buildings 505, 506, 507, and 514 to check for archaeological deposits associated with the defensive structures depicted in the general location on historic maps.

A total of 18 STPs were excavated within Section F and all of them yielded artifacts. In total, 56 artifacts were recovered. These were well distributed throughout the test area. Ceramic recovery was limited to eight whiteware fragments and one piece of unglazed redware (probably flower pot fragments). Twenty-nine pieces of architectural debris and hardware were found, as were 23 glass fragments. The architectural debris and hardware included cut, wire, and unidentifiable nails, one large iron railroad spike, mortar, and brick fragments. Glass items included green, brown, amber, and colorless vessel glass fragments

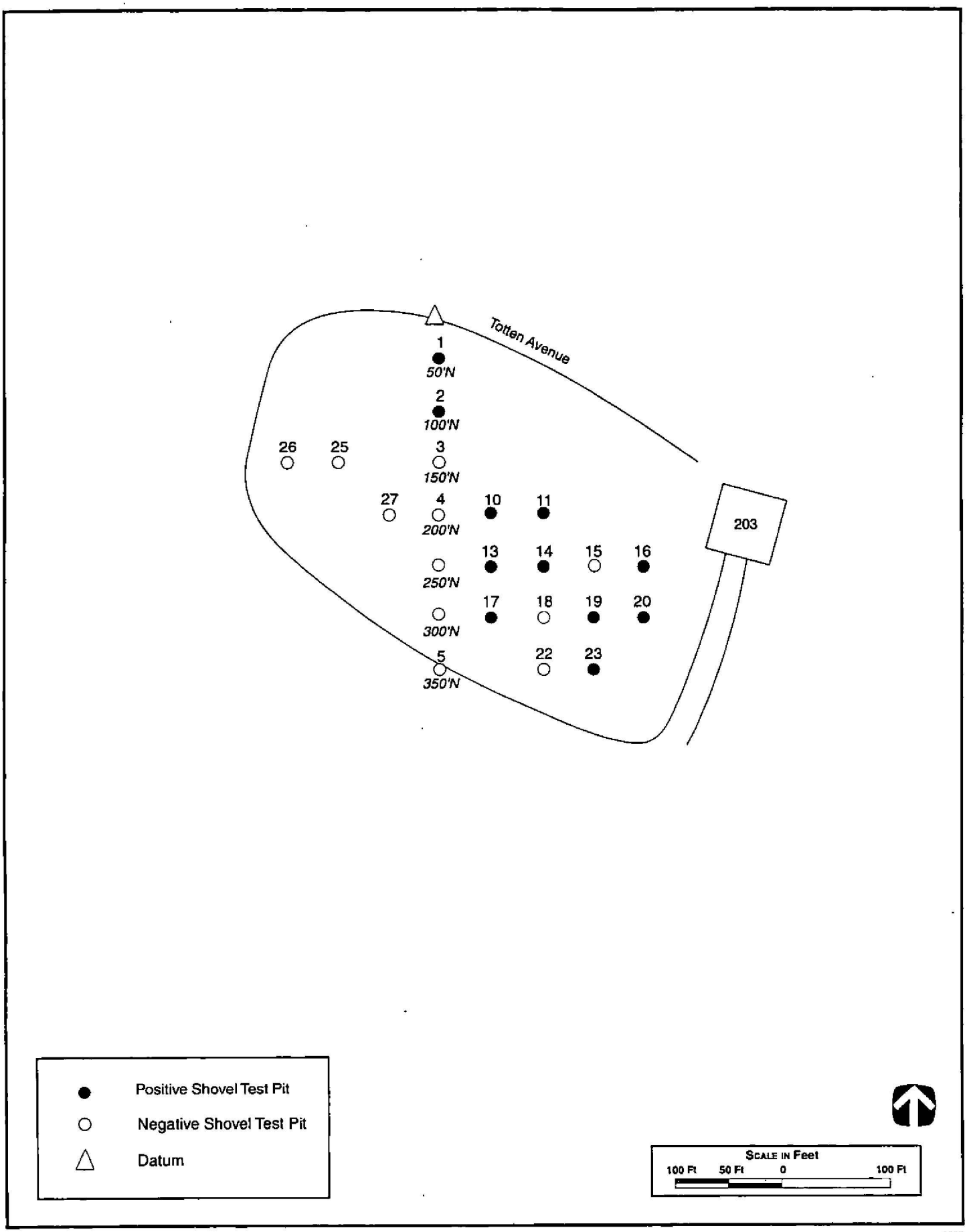


Figure 20. Section D Excavations.

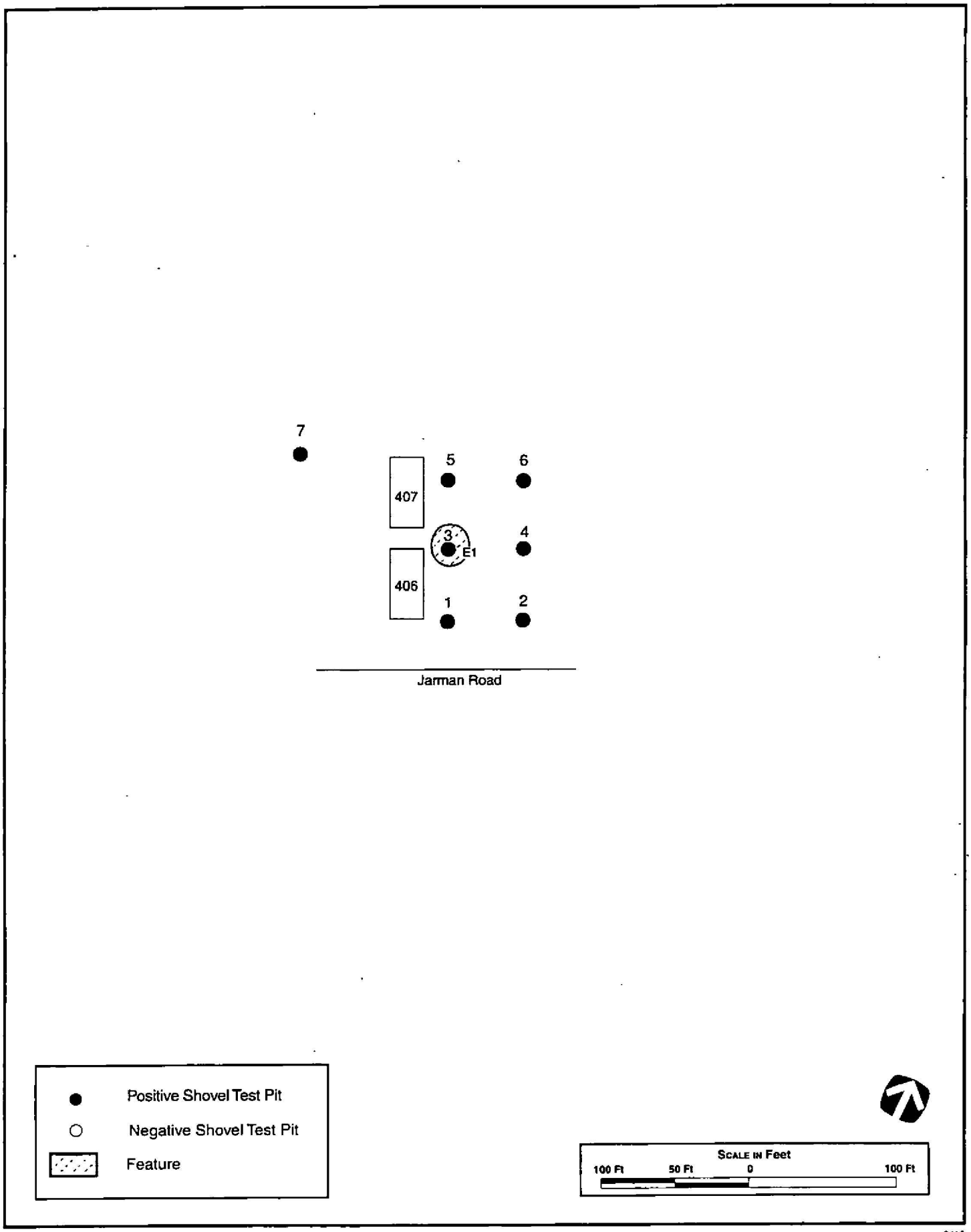


Figure 21. Section E Excavations and Feature Location.

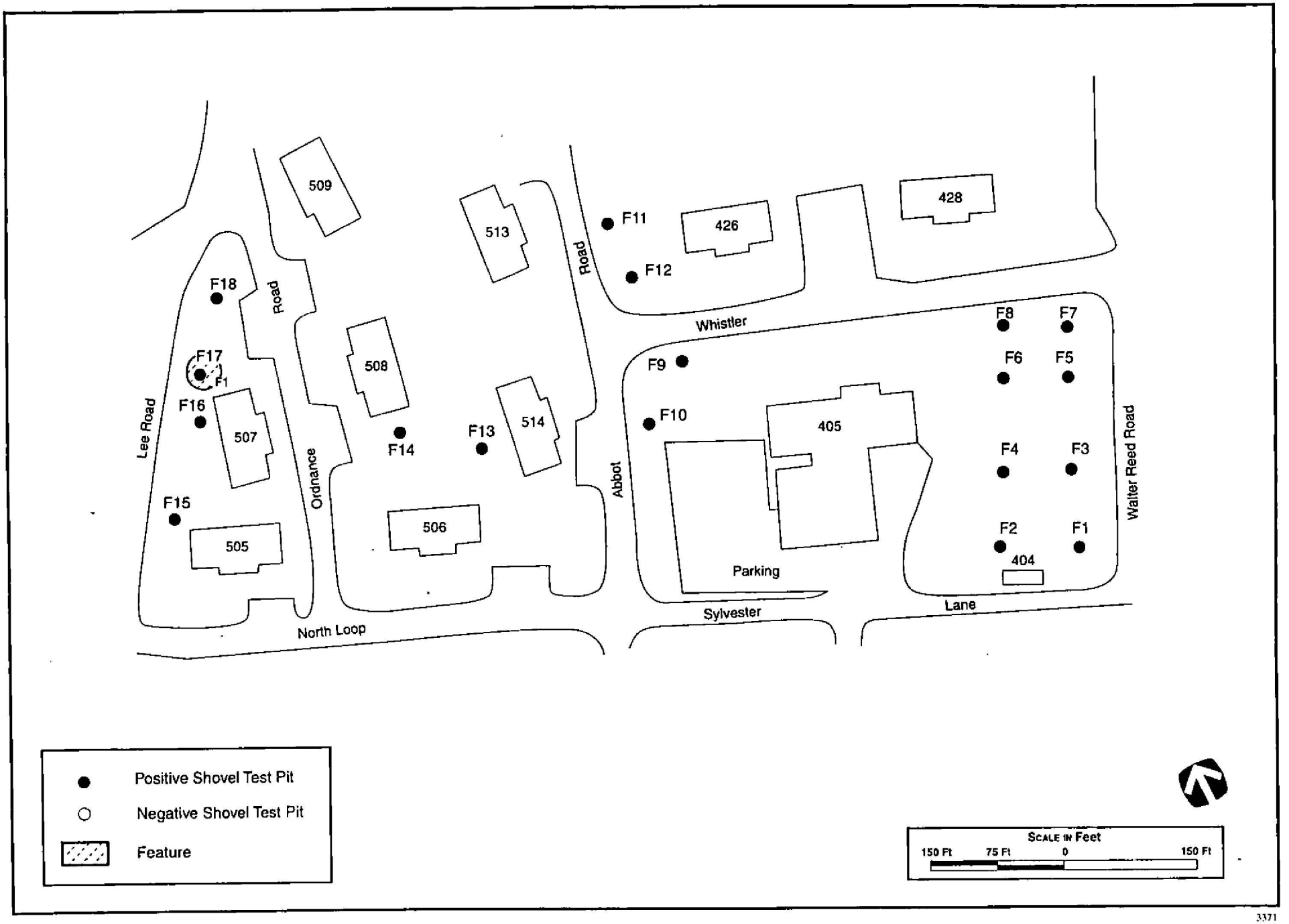


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Figure 22. Section F Excavations and Feature Location.

and five pieces of aqua flat glass. One oyster shell fragment was also found. The Feature (F1) that was identified is limited to a large hollow concrete block in STP F17 (Figure 22). This concrete block may be associated with the former Battery King, a post-Civil War mortar battery which was modernized in the 1890s and finally partially dismantled and buried in 1935.

7.0 SUMMARY

In the fall of 1996, a Phase IA/B archaeological investigation was conducted for the BRAC excess parcel at Fort Totten. The excess parcel is approximately 54 ha (135 acres) in size. This parcel includes most of the land north and east of Totten and Murray Avenues excluding the U.S. Coast Guard property on the northwestern portion of the Fort, and Buildings 319 and 330. A small strip of land south of Duane Road is also being excessed (Figure 3).

Background research suggested that the majority of the BRAC parcel had a low potential for both prehistoric and pre-military historic archaeological deposits. Very little open land exists within the project area, most of it is built-up with buildings or paved. The largest piece of undeveloped land within the BRAC parcel is the parade ground which is located at the approximate center of the Fort. This area became the primary focus of the subsurface archaeological investigation.

A total of 210 STPs were excavated across approximately 6 ha (15 acres) of open land within the BRAC parcel. The majority (143) of the STPs were located in the parade ground and the open area to its east. One hundred and fifty positive STPs were excavated and 1,377 artifacts were found. All but nine of the artifacts recovered date to the historic or modern periods.

Prehistoric material was limited to flakes and flake fragments. One quartz flake fragment and two whole flakes were recovered from Section A. Six quartzite flakes were found in Section B. All of these came from levels producing historic artifacts. No pattern is apparent in their distribution and the density does not suggest the presence of an intact prehistoric site within the project area.

Very few artifacts were found that potentially date to the pre-military historic occupation of the tract. As with the prehistoric artifacts, these were found widely distributed throughout the test areas (items were found in Sections A, B, C, and D). Ceramics potentially dating to the late 18th century include one piece of white salt-glazed stoneware, several pieces of creamware, a few pieces of pearlware, and some kaolin tobacco pipe fragments. All of these items were found in association with artifacts dating to the 19th century. The density and distribution of these artifacts do not suggest the presence of a pre-1857 historic site within the project area. Given the extensive disturbance of the tract it is highly unlikely that a site of this nature would be present anywhere on Fort Totten.

The vast majority of artifacts recovered during the Phase I investigation are associated with the military and its occupation of the tract. Ceramics dating to the 19th century were found in all areas subjected to subsurface testing. Cut and wire nails were found everywhere as were a wide variety of glass fragments. Military objects recovered include munitions, uniform buttons, and dog tags.

All of the features identified most likely date no earlier than 1861. Three features were identified in Section A: Feature A1, a concentration of rubble and historic artifacts approximately 75 m (250 ft) long and 15 m (50 ft) wide along Story Avenue, Feature A2, some very deep cultural levels and a possible building foundation near the intersection of Story and Murray Avenues, and Feature A3, a fill deposit in STPs 77 and 79 (N150 W50 and N200 W50). Five features were also identified in Section B. These include structural remains in three STPs (Feature B1 in STP 9 at E100, Feature B2 in STP31 at W150 S100, and Feature B3 in STP 33 at W100 S150). In addition, Feature B4, a possible trash pit measuring approximately 15 m (50 ft) wide and 30 m (100 ft) long, and Feature B5, a deep feature or cultural deposit were identified in the Section. All of these features were found in the northwest portion of Section B. Section C also contained two features. Feature C1 is a large post hole on the east side of the Chapel found in STP 20 and Feature C2 is located in the northeast corner of the test area near the intersection of Abbot Road and Murray Avenue. Another post hole-like feature was identified in Section E in STP E3. Finally, a large concrete block was identified at 74 cm (29 in) below surface in STP F17, behind Building 507.

8.0 CONCLUSIONS

One hundred and fifty of the 210 STPs excavated within the project area produced artifacts and eleven features were identified. The features in Section A are most likely associated with the early 1860s occupation of the tract as no buildings are ever depicted in this location on any of the historic military maps reviewed. The large rubble pile (Feature A1), which produced numerous historic artifacts, may be the remnants of Camp Morgan, a temporary campsite for Union soldiers on their way to the southern front. Similar archaeological deposits found near Manassas, Virginia have been interpreted as Civil War huts or campsites (Whitley et al. 1995). These deposits do not seem to be intact. The possible structure at the intersection of Murray and Story Avenues may be associated with Camp Morgan or the period between 1863 and 1865 when more permanent structures were built in the area to house workmen, soldiers, and finally Civil War casualties. Excavation results from other STPs near N50 W100 suggest that this area northwest of the intersection of Murray and Story Avenues is somewhat disturbed, but not so excessively that intact deposits may not be present.

Five features were identified in Section B, and several maps dating to the late 19th and early 20th centuries depict buildings in the same location. Based on the maps and artifact recovery, these features may be associated with the Civil War Period hospital and associated structures. The foundations of these structures seem to be intact, as does the historic midden (Feature B4) that is located south of the former buildings.

The post holes identified in Sections C and D seem to be more recent and are spatially isolated from other material or structures. They produced very few artifacts, none of which are diagnostic. No other features were identified in association with these features and they have no individual significance. Possible remains of a fire control station were identified in Section C. These remains do not appear to have any stratigraphic integrity.

Shovel test pits excavated in Section F produced numerous historic 19th-century artifacts even though much of the area appears to be disturbed. Displaced soils and the feature identified behind Building 507 may be associated with the mortar battery (Battery King, constructed in the 1870s). There is a possibility that parts of Battery King may be intact underneath deep fill deposits.

9.0 RECOMMENDATIONS

No additional testing is recommended in Sections C, D, or E. Very few artifacts were found in these areas and no significant features were identified.

Most of the area between Murray Avenue and Shore Road from Walter Reed Road and Sergeant Beers Avenue is currently paved or covered with buildings and as such was not subjected to systematic subsurface survey (except for the parade ground). This area does have the potential to contain remnants of structures dating to the late-19th century but this time period is well-documented and understood, and features such as structural remains and builders trenches are unlikely to provide additional information.

Several areas of archaeological sensitivity have been identified within the BRAC excess parcel. They include three features (A1, A2, and A3) identified during subsurface testing in Section A and five features identified in Section B. Phase II investigations are recommended for these locations. These features, shown in Figures 17 and 18, potentially date to the earliest military occupation of Fort Totten and may provide information about the Civil War and later 19th-century activities at the Fort that cannot be obtained elsewhere.

Should construction or similar activities take place within the northern portion of the excess parcel, near the standing fortifications and in the former location of Battery King, archaeological monitoring is recommended. This area is identified in Figures 16 and 22. Features associated with the construction of these fortifications and part of Battery King may be present under deep fill deposits.

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APPENDIX A QUALIFICATIONS OF INVESTIGATORS

Dr. Paula Bienenfeld
Senior Archeologist

Education

Ph.D., Anthropology, State University of New York at Binghamton, 1986
M.A., Anthropology, State University of New York at Binghamton, 1979
B.A., Anthropology, University of Michigan, 1973

Years at Tetra Tech 2.5 **Years Other** 16

Capability Summary

Dr. Bienenfeld is experienced in directing and conducting archaeological, historical and archival research; environmental assessments, Phase I, II, and III field investigations; artifact identification/cataloguing, report preparation, and *National Environmental Policy Act* (NEPA) documentation. Completed Master's Thesis on the topic of development of 18th and 19th century towns in upper New York state. Ph.D. research involved use-wear studies of prehistoric stone tools. This research was continued with assemblages from Africa and the American Midwest. For more than a decade, researched the manufacture and use of stone tools and developed microscopic analysis that provides invaluable information on both the past use of tools and the materials on which they were used.

Twenty years of field experience reflect extensive survey and historic and prehistoric sites excavation work in Maryland, Virginia, Pennsylvania, Texas, Michigan, New York, Illinois, New England, Europe and the Near East.

Special Qualifications

Experienced in academic and commercial endeavors, including all phases of marketing, proposal submissions and project management for government and private sector clients including proposal writing and submittal.

Management Capability

Dr. Bienenfeld managed archaeological services at an environmental engineering company. She has managed multiple cultural resources projects ranging from $3,000 to $140,000. Dr. Bienenfeld has managed up to 10 professionals on any given project.

Relevant Experience

Project Manager, Intensive Phase I excavations at 14 sites, Iowa Army Ammunition Plant, Burlington, Iowa. Supervises field and lab personnel, and subcontractors to support Phase I archaeological excavations and report completion and architectural history tasks.

Project Manager, National Historic Preservation Act Section 106 compliance projects at five bases in New York and New Jersey in support of Base Realignment and Closure actions. U.S. Army Corps of Engineers, Mobile District. Supervises field and lab personnel, and subcontractors to support Phase I archaeological excavations and report completion and architectural history tasks.

Project Manager, NEPA Documentation for ISTEA Renovation of Union Station, Browne, Eichman, Dalgliesh, Gilpin, and Paxton, P.C., Architects, Charlottesville, Virginia. Completing NEPA documentation for ISTEA project, renovation of Union Station, Charlottesville, Virginia. Coordinated with Federal, state, and city agencies to complete required documentation.

Project Manager, Archaeological Survey of the Leesburg Courthouse, Loudoun County, Virginia. Directs archival research, field excavations and report preparation as part of this study of the 18th- and 19th-century activities at the Courthouse. Department of Historic Resources, Virginia.

Senior Archaeologist, *Storage and Disposition of Weapons-Usable Fissile Materials Programmatic Environmental Impact Statement* (PEIS), U.S. Department of Energy, Office of Fissile Materials Disposition, Washington, D.C. Authored and acted as and peer reviewer for potentially affected environmental resources, including cultural and paleontological resources, geology and soils, and other environmental resources for this NEPA document.

Senior Archaeologist, *Disposition of Surplus Highly Enriched Uranium Environmental Impact Statement*, U.S. Department of Energy, Office of Fissile Materials Disposition, Washington, D.C. Author and peer reviewer for potentially affected environmental resources, including cultural and paleontological resources, geology and soils, and other environmental resources for this NEPA document.

Senior Archaeologist, *Programmatic Environmental Impact Statement for Tritium Supply and Recycling*, U.S. Department of Energy, Washington, D.C. Author and peer reviewer for potentially affected environmental resources, including cultural and paleontological resources, geology and soils, and other environmental resources for this NEPA document.

Senior Archaeologist, *Programmatic Environmental Impact Statement for Stockpile Stewardship and Management*, U.S. Department of Energy, Washington, D.C. Author and peer reviewer for potentially affected environmental resources, including cultural and paleontological resources, geology and soils, and other environmental resources for this NEPA document.

Senior Archaeologist, Long-Term Programmatic Environmental Impact Statements, U.S. Department of Energy, Washington, D.C. Coordinating results from the study of impacts to cultural resources at a number of candidate sites.

Instructor, "Natural and Cultural Resources: Planning and Management Strategies for Federal Projects", Government Institutes, Inc. Course instructor.

Project Manager, Hanover County Archaeological Assessment, Hanover County Department of Planning, Hanover, Virginia. Completed assessment of historic and prehistoric archaeological resources in this County. Responsible for archival research, historic documents and maps analysis, report writing, and managed construction of a predictive model for County planners.

Project Manager, Phase I Archaeological Investigation, Traceries, Inc. Conducted Phase I and additional excavations in Howard County, Maryland at 18th century historic house site, Montpelier. Work involved quick start-up fieldwork and report completion.

Senior Archaeologist, Environmental Assessment for Federal Drug Administration, General Services Administration, Washington, D.C. Provided research and analysis for this NEPA document and assessed potential impacts to cultural resources at a proposed FDA facilities construction site.

Project Manager, NEPA Documentation for ISTEA Renovation of Manassas Railroad Depot, Browne, Eichman, Dalgliesh, Gilpin, and Paxton, P.C., Architects, Charlottesville, Virginia. Completed NEPA documentation for ISTEA project, renovation of Manassas Railroad Depot, Manassas, Virginia. Coordinated with Federal, state, and city agencies to complete required documentation.

Senior Archaeologist, Phase I Archaeological Investigation, Pennsylvania Department of Transportation (DOT). Conducted Phase I Archaeological Investigation in Lancaster County, Pennsylvania. Performed Section 106 Compliance for Pennsylvania DOT. Directed excavations for proposed covered bridge replacement.

Senior Archaeologist, Cultural Resources Studies, Pennsylvania Department of Transportation. Completed numerous cultural resources survey forms (PCRRF) for Pennsylvania Historic and Museum Commission as preliminary step to the Section 106 compliance process.

Project Manager, Phase I Archaeological Excavations, Pulte Home Corporation. Conducted Phase I excavations in Fairfax County, Virginia for real estate developers.

Project Manager, Phase II and III Archaeological Excavations, U.S. Fish and Wildlife Agency. Directed Phase II and III excavations. Responsible for report writing and coordination for sites in West Virginia. Sites involved deeply stratified Archaic and Woodland Period components.

Visiting Scientist, Lithics Laboratory Director and Lithics Analyst for the Powers Phase Project, Smithsonian Institution. Conducted a study of two prehistoric Middle Mississippian villages. Responsible for choosing and directing student and community Smithsonian Institution volunteers.

Project Manager, Section 106 Compliance, Maryland State Highway Administration. Conducted numerous Phase II and III terrestrial and underwater studies within the State of Maryland.

Project Manager, Phase II Archaeological and Historical Investigations in Queen Anne's County, Maryland, Maryland State Highway Administration. Directed excavations and archival research at 18th to 19th century site, the Great Neck Road Site (18QU240) on Kent Island. Excavations revealed an 18th-century structure.

Project Manager, Phase III Archaeological Investigations at in Greene County, Pennsylvania, U.S. Department of Agriculture (USDA) Soil Conservation Service. Excavations and analysis of a prehistoric Footbridge Rockshelter, found to have been occupied from the Late Archaic through Late Woodland Periods.

Project Manager, Phase II Archaeological and Historical Investigations, Frederick County, Maryland, Maryland State Highway Administration. Extensive excavations and research at the Shriner Site (18FR633), a prehistoric and historic site in northern Maryland. The site yielded remains of a prehistoric component and early- to mid-19th century residence and blacksmith shop.

Senior Archaeologist, Aztec Superfund Site, Alvin, Texas. Coordinated research and writeup of NEPA-required environmental assessment.

Project Manager, Phase I Archaeological Studies, Martin State Airport, Baltimore County, Maryland. Possibility of asbestos from construction fill required testing for asbestos prior to archaeological fieldwork under OSHA regulations.

Project Manager, Phase II Underwater Archaeological Study of Target B, Chester River, Maryland (MD 213 Relocation), Maryland State Highway Administration. In coordination with sub-contractor, conducted the magnetometer location work required for Target B, which had been recorded during a previous magnetometer survey. This target was pin-pointed, and its magnetic anomaly configurations were examined to indicate its characteristics and the identity of the cultural material of which it consists. Target B was found to be confined to a small area, with the likelihood that it is a single object of substantial ferrous mass. No further work was recommended.

Project Manager, Phase II Archaeological Investigation at the Golf Center Site, Harford County, Maryland, Maryland State Highway Administration. Responsible for plowing the property prior to fieldwork. The investigations involved two stages: surface collections of the artifacts, and excavations of shovel tests and larger meter square units. The excavations revealed an extensive multi-component site.

Project Manager, Exhibit Installation at the Benson-Hammond House, an historic 19th century farmhouse at Baltimore-Washington International (BWI) Airport, Maryland State Highway Administration. This project, conducted for Maryland State Aviation Administration through the Ralph M. Parsons Company, involved the development and installation of an exhibit of archaeological artifacts recovered on BWI property through various excavations. Work involved choosing and installing artifacts, developing the theme and writing the script and labels for the exhibit.

Project Manager, Phase I Archaeological Studies, Arlington County, Virginia, Arlington County Government. Excavations at a proposed neighborhood park revealed Civil War era remains. Site was located near an early Freedman's Village, which was researched as part of this project.

Project Manager, Phase II Archaeological Investigations and Section 106 Compliance, Frederick, Maryland, Maryland State Highway Administration. Responsible for overseeing the fieldwork, artifact analysis and report writing for Dearbought, a site which included an 18th-century farmstead. Research revealed that German immigrants had resided there.

Senior Archaeologist, Cultural resource investigation of proposed natural gas pipeline corridor in Pennsylvania, CNG Transmission Company. Responsible for coordinating field teams and for directing all lab activities.

Senior Archaeologist, Archival Research, Baltimore Washington Airports Authority. Conducted artifacts analysis and report writing for a Phase I archaeological survey for Section 106 compliance for a proposed runway addition at the BWI.

Training Certifications

OSHA 40 HAZMAT Certification

Professional Affiliations

Commissioner, Montgomery County Historic Preservation Commission, Montgomery County, Maryland
Board Member, Committee on the Status of Women in Archaeology, Society for American Archaeology
Society for American Archaeology
Southeastern Archaeology Conference
Archaeological Society of Maryland
Archaeological Society of Virginia
Acting President and Newsletter Editor, Society for Women Archaeologists
Society for Historical Archaeology

Publications

"The Gilde Site, a Red Ochre Burial Site in Shiawassee County, *Michigan Archaeologist*, 21:153-160 (1975).

"Using use-wear analysis to examine occupation length at a Dutch Neolithic site," Presented at the Second Conference on Chert Exploitation, Southern Illinois University Center for Archaeological Investigations, Carbondale, Illinois (1984).

Lithic Use-wear Study of the Swifterbant sites, S-51, S-4, and S-2. Swifterbant Contribution 13. *Helinium* 25: 194-211 (1985).

Stone Tool Use at Five Neolithic Sites in The Netherlands: A Lithic Use-wear Analysis. Unpublished Ph.D. Dissertation, Department of Anthropology, State University of New York at Binghamton (1986).

"Stone Tool Use and the Organization of Technology in the Dutch Neolithic." In: *Industries Lithiques: Traceologie et Technologie (Valbonne Round Table)*, edited by Sylvie Beyries. B.A.R. International Series 411, Oxford. Pp. 219-230 (1988).

"Use-wear Analysis of the Gassel Flint Assemblage," contribution to Een Midden-Neolitsche Nederzetting Bij Gassel, Gemeente Beers (N-BR.), by L.B.M. Verhart and L.P. Louwe Kooijmans. In: *Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden*, Vol. 69:75-117 (1989).

"A Use-Wear Analysis of Microliths from the Late Stone Age Site of Toromoja I." In: *Le Silex de sa Genese a L'Outil*, Actes du V" Colloque International sur le Silex, Cahiers du Quaternaire No. 17. Pp.621-628 (1990).

"Using AutoCAD to Map an Archaeological Village Site," *The Sourcebook*, American Association of Museum Publications (1991).

"The Lithic Assemblage from the Snodgrass Site, a Mississippian Powers Phase Village," paper presented at the Fifty-sixth Annual Meeting of the Society for American Archaeology, New Orleans, Louisiana (1991).

"Lithic Variability at Snodgrass, A Middle Mississippian Site in Southeast Missouri," paper presented at the Forty-eighth Annual Meeting of the Southeastern Archaeological Conference, Jackson, Mississippi (1991).

"Excavations at the Footbridge Rockshelter, Greene County, Pennsylvania," paper presented at the Middle Atlantic Archaeology Conference (1992).

"Duplicating Archaeological Microwear Polishes with Epoxy Casts," paper presented at the Southeastern Archaeological Conference, Raleigh, North Carolina (1993).

"Introduction to Lithic Use-wear Analysis", invited talk presented at the Maryland Historical Trust Third Annual Workshop in Archeology, Crownsville, Maryland (March, 1994).

"Duplicating Archaeological Microwear Polishes with Epoxy Casts," *Lithic Technology*, (1994).

"A Prehistoric Bipolar Lithic Reduction Area in the Mid-Atlantic Region," co-authored with Cynthia Pfanstiehl (in preparation).

Invited Speaker, "Archaeology for Historic Preservation Commissions," Maryland Historical Trust Annual Conference on Historic Preservation (1995).

TECHNICAL REPORTS

Phase II Testing and Phase III Excavation of Site 29 (18AN664), Russett Center, Anne Arundel County, Maryland. Co-authored with John M. Rutherford and Michael D. Petraglia. Report on file at Maryland Historical Trust, Crownsville, Maryland (1989).

Phase II Archaeological Investigations at Russett Phase Two of Development, Anne Arundel County Site 5 (18AN665) and Site 10 (18AN667). Co-authored with Cynthia Pfanstiehl, Eugene Goodman and Michael D. Petraglia. Report on file at Maryland Historical Trust, Crownsville, Maryland (1989).

Phase II Archaeological Testing at Mexico Farms, Allegany County, Maryland. Contribution to report authored by John Wingard and Michael D. Petraglia. Report on file at Maryland Historical Trust, Crownsville, Maryland (1989).

Archaeological Investigations at the Potomac Interceptor Extension, Loudoun County, Virginia. Co-authored with Michael D. Petraglia, Jesse S. Daugherty, and Justin S. Patton. Report on file at Virginia Department of Historic Resources, Richmond, Virginia (1990).

Report on Phase II Archaeological Evaluations at Dearbought (18FR32), Frederick County, Maryland. Report on file at Project Planning Division, Maryland State Highway Administration. Co-authored with John Haynes, Jr., W. Andrew Wyatt, Elizabeth Haynes and Keith Russell (1991).

Report on Phase I Archaeological Survey at Baltimore-Washington International Airport Proposed Runway 10R/28L. Co-authored with John Haynes. Report on file at Maryland State Aviation Administration (1991).

Phase I Archaeological Survey at Reston East Park-and-Ride, Fairfax County, Virginia. Co-authored with Christine Hoepfner, Elizabeth Haynes and Andrew Bickford. Report on file at Fairfax County Heritage Resources, Fairfax, Virginia (1992).

Phase I Archaeological Survey at Proposed Monroe Street Park-and-Ride Facility, Fairfax County, Virginia. Co-authored with Christine Hoepfner and Carey O'Reilly. Report on file at Virginia Department of Historic Resources, Richmond, Virginia (1992).

Phase I Archaeological Survey at South Oak Street and Southgate Road, Arlington Virginia. Co-authored with Christine Hoepfner, Elizabeth Haynes and Andrew Bickford. Report on file at Arlington County, Arlington, Virginia (1992).

Phase I Archaeological Survey at Martin State Airport, Baltimore County, Maryland. Co-authored with Christine Hoepfner, Elizabeth Haynes and Andrew Bickford. Report on file at Maryland Historical Trust, Crownsville, Maryland (1992).

A Phase II Survey of the Golf Center Site (18HA224), Harford County, Maryland. Maryland State Highway Administration Archeological Report No. 58. Co-authored with Christine Hoepfner, Elizabeth Haynes and Andrew Bickford. Report on file at Maryland Historical Trust, Crownsville, Maryland (1992).

Preliminary Historic Review of Computer Facility Site Bureau of the Census, Bowie Maryland. Co-authored with Cynthia Pfanstiehl and Kimberly Prothro Williams. Report on file at Maryland Historical Trust, Crownsville, Maryland (1992).

Supplementary Phase II Evaluation of the Crow Rock Bottom Site (36GR101), Wheeling Creek Watershed, Greene County, Pennsylvania. Co-authored with Robert Adams. Report on file at International Archeological Consultants, Rollins, West Virginia, (1992).

Phase III Excavations at the Footbridge Rockshelter (36GR196), Wheeling Creek Watershed, Greene County, Pennsylvania. Co-authored with Robert Adams. Report on file at International Archeological Consultants, Rollins, West Virginia, (1992).

Phase II Archaeological and Historical Investigations at the Shriner Site (18FR633), Frederick County, Maryland. Co-authored with Cynthia Pfanstiehl, Andrew Bickford and Forrest Crosley. Report on file at Maryland Historical Trust, Crownsville, Maryland (1993).

Phase II Archaeological and Historical Investigations at the Great Neck Road Site (18QU240), Queen Anne's County, Maryland. Co-authored with Cynthia Pfanstiehl and Andrew Bickford. Report on file at Maryland Historical Trust, Crownsville, Maryland (1993).

A Phase III and Supplemental Phase II Archeological Study of the U.S. Fish & Wildlife National Education and Training Center, Terrapin Neck, West Virginia. Co-authored with Jody Hopkins and Jennifer Sparenberg. Report on file at West Virginia Division of Culture and History, Charleston, West Virginia (1994).

A Phase I Archeological Study at the Oaks at Crosspointe, Fairfax County, Virginia. Co-authored with Karl Franz. Report on file at Fairfax County Heritage Resources, Fairfax, Virginia (1994).

A Phase I Archeological Study of S.R. 1010, Lancaster County, Pennsylvania. Co-authored with Jody Hopkins III and Bernard Means. Report on file at Pennsylvania Historic and Museum Commission, Harrisburg, Pennsylvania (1994).

A Phase I Archaeological Survey of Montpelier, Howard County, Maryland. Co-authored with Evelyn Chandler and Hope Leininger. Report on file at the Maryland Historical Trust, Crownsville, Maryland (1996).

An Archaeological Assessment of Hanover County, Virginia. Co-authored with Hope Leininger. On file, Hanover County Planning Department, Hanover, Virginia (1996).

A Phase I Archaeological Survey of Camp Kilmer, Middlesex County, New Jersey. Co-authored with Hope Leininger. Draft Report on file, U.S. Army Corps of Engineers Mobile District, Mobile, Alabama (1996).

A Phase I Archaeological Survey of Pedricktown Support Facility, Salem County, New Jersey. Co-authored with Hope Leininger. Draft Report on file, U.S. Army Corps of Engineers Mobile District, Mobile, Alabama (1996).

A Phase IA/B Archaeological Survey of the Bellmore Logistics Activity, Nassau County, New York. Co-authored with Hope Leininger. Draft Report on file, U.S. Army Corps of Engineers Mobile District, Mobile, Alabama (1997).

Security Clearances

None

Employment History

August 1994 - Present	Tetra Tech, Inc., Staff Scientist/Archaeologist
April 1993 - May 1994	Greenhorne & O'Mara, Inc., Senior Archaeologist
June 1991 - April 1993	Kemron Environmental Services, Manager, Department of Archaeological Research
April 1987 - April 1991	Smithsonian Institution, Post - Doctoral Fellow, Lithics Laboratory Director

Experience Profile

Job Category

Project Management
Task Order Management
Principal Investigator
Support Staff

Discipline

Archaeology

Services

Cultural Resources Studies
Document Review
Environmental Baseline Surveys
NEPA Compliance
Preliminary Assessments/Site Assessments
Preparation of Cost Estimates
Cost Control/Management
QA/QC Oversight
Training

Education

B.A. Anthropology, The Pennsylvania State University, 1990
B.A. History, The Pennsylvania State University, 1990

Professional Registrations/Certifications

None

Years at Tetra Tech 2 **Years Other** 5

Capability Summary

Ms. Leininger has been involved with cultural resources regulatory compliance work for over 5 years and is familiar with Federal, state, and local regulations and related personnel. She has experience conducting historical and archival research; cultural resources assessments; and Phase I, II, and III archaeological field and laboratory investigations. She has contributed to numerous technical reports. Prehistoric field and lab experience includes work on Archaic, Woodland, and Mississippian Period sites. Historic experience includes investigations of 18th to 20th century domestic, military, and industrial sites. Ms. Leininger has experience working in Delaware, Georgia, Maryland, New Jersey, Pennsylvania, and Virginia.

Special Qualifications

Experienced in government relations, special event planning, and the hospitality industry.

Management Capability

Field Director for archaeological excavations.

Relevant Experience

Field Director, Intensive Phase I archaeological excavations at 14 sites at the Iowa Army Ammunition Plant, Burlington, Iowa in support of Section 106 of the *National Historic Preservation Act*. Tasks include field project management, artifact analysis, report preparation and archival research.

Field Director, U.S. Army Corps of Engineers, Mobile District. Archaeological excavations at various U.S. Army bases in support of Base Realignment and Closure actions in the

northeast. Tasks include field project management, artifact analysis, report preparation and archival research.

Archaeologist, *Storage and Disposition of Weapons-Usable Fissile Materials Programmatic Environmental Impact Statement*, Office of Fissile Materials Disposition, U.S. Department of Energy, Washington, D.C. Tasks included author of cultural and paleontological resources and peer reviewer for other resource areas relating to this *National Environmental Policy Act* (NEPA) document.

Archaeologist, *Programmatic Environmental Impact Statement for Stockpile Stewardship and Management*, Office of Reconfiguration, U.S. Department of Energy, Washington, D.C. Tasks included author of cultural and paleontological resources and peer reviewer for other resource areas relating to this NEPA document.

Archaeologist, *Disposition of Surplus Highly Enriched Uranium Environmental Impact Statement*, Office of Fissile Materials Disposition, U.S. Department of Energy, Washington, D.C. Tasks included author of cultural and paleontological resources and peer reviewer for other resource areas relating to this NEPA document.

Archaeologist, Hanover County Archaeological Assessment, Hanover County, Virginia, Planning Department. Conducted archival research and developed a predictive model to assess the prehistoric and historic archaeological resources in this rural/suburban county near Richmond. Completed GIS work to input site locations into the County's GIS system for planning purposes.

Archaeologist, Environmental Assessment, U.S. Air Force. Prepared the cultural resources portion of an environmental assessment for the U.S. Air Force involving two slow-speed, low-altitude training routes and drop zones. Project involved in-depth research of cultural resources falling within proposed flight corridors in Delaware and New Jersey.

Field Supervisor, Phase IC Archeological Investigation at Montpelier, Traceries, Washington, DC. Conducted Phase IC archaeological investigation at Montpelier, an 18th century historic structure and archaeological site in Howard County, Maryland for real estate development project. Directed fieldwork, completed artifact analysis and report writing.

Lab Technician, Phase IB Archaeological Investigation at Montpelier, Traceries, Washington, D.C. Conducted Phase IB archaeological investigation at Montpelier, Howard County, Maryland. Responsible for artifact analysis and cataloging.

Staff Archaeologist, Phase I through III Archaeological Investigations in Fairfax County, Elm

Street Development, McLean, Virginia. Conducted various Phase I through III archaeological investigations over 1,100 acre tract (prehistoric and historic sites including Civil War component) slated for residential development in Fairfax County, Virginia. Responsible for archival research, fieldwork, site identification and analysis, laboratory work, and report writing.

Field and Lab Technician, Phase II and III archaeological investigations at City Island Site (36DA12), Harrisburg, Pennsylvania, State of Pennsylvania. Conducted Phase II and III archaeological investigations which involved deep testing, field excavation and artifact processing of multicomponent (Archaic, Woodland, and Historic Period) sites prior to the construction of the Pennsylvania Sports Hall of Fame.

Field Technician, Phase I Archaeological Investigation, Standard Chlorine, Newark, Delaware. Conducted a Phase I archaeological investigation in Newark, Delaware prior to Superfund cleanup.

Lab Technician, Phase II Archaeological Investigation, Maryland State Highway Administration. Conducted Phase II archaeological investigation at the Great Neck Road Site (18QU240) in Queen Anne's County, Maryland. Responsible for processing, analyzing, and cataloging of artifacts.

Lab Technician, Phase II Archaeological Excavation, Maryland State Highway Administration. Conducted Phase II archaeological excavation at the Shriner Site (18FR633), Frederick County, Maryland, for transmittal to the Maryland Historical Trust. Responsible for analysis and curation of artifacts.

Field and Lab Technician, Phase I Archaeological Investigation, General Services Administration, Washington, D.C. Conducted Phase I archaeological investigation prior to the construction of a Census Bureau facility in Bowie, Maryland. Responsible for fieldwork, artifact analysis, cataloging, and preparation of artifacts for curation.

Field Technician, Phase I and II Archaeological Investigations, Private Client. Conducted Phase I and II archaeological investigations of the Alfred Street Baptist Church in Alexandria, Virginia prior to its renovation and restoration.

Field Technician, Phase I and II Archaeological Investigations, Private Client. Conducted numerous Phase I and II archaeological investigations in Fairfax County, Virginia for real estate developers. Responsible for fieldwork on prehistoric and historic sites.

Field Technician, Phase I Archaeological Investigation, Private Client. Conducted numerous

Phase I archaeological investigations near Annapolis, Maryland for real estate developers.

Field Technician, Phase I and II Archaeological Investigations, CNG Transmission Company. Conducted Phase I and II archaeological investigations of proposed gas pipeline corridor in Pennsylvania. Responsible for deep testing.

Field and Lab Technician, Archaeological Investigation, Pennsylvania State University. Conducted archaeological investigation of a Mississippian Period site in northeast Georgia.

Training Certifications

Occupation Safety and Health Administration, 40 Hour Hazardous Materials Site Worker Certification, December 1995

Professional Affiliations

Society for American Archaeology

Technical Reports

An Archaeological Assessment of Hanover County, Virginia. Co-authored with Paula Bienenfeld. Report on file at Department of Historic Resources, Virginia (1996).

Test Unit Excavations at Montpelier, Howard County, Maryland. Co-authored with Paula Bienenfeld. Report on file at the Maryland Historical Trust, Crownsville, Maryland (1996).

Phase I and II Archaeological Investigations of Section 3 of Balmoral Tract, Fairfax Virginia. Co-authored with Kevin Etherton, John Graminski, and Cynthia Whitley. Report on file at Heritage Resources, Fairfax County, Virginia (1995).

Phase I and II Archaeological Investigations of Section 6 of Balmoral Tract, Fairfax, Virginia. Co-authored with Kevin Etherton, John Graminski, and Cynthia Whitley. Report on file at Heritage Resources, Fairfax County, Virginia (1995).

Phase III Archaeological Investigation of Ivakota Farm (Balmoral Tract, Fairfax, Virginia). Co-authored with Kevin Etherton, John Graminski, and Cynthia Whitley. Report on file at Heritage Resources, Fairfax County, Virginia (1994).

August 1995 - Present	Tetra Tech, Inc., Archaeologist
March 1994 - August 1995	Terra, LC, Staff Archaeologist
November 1993 - February 1994	Temps & Company (Dames & Moore), Archaeological Field and Lab Technician
May 1993 - November 1993	Kemron Environmental Services, Archaeological Field and Lab Technician
May 1993 - November 1993	Steel Service Center Institute, Assistant to the Vice President
March 1992 - May 1993	Matters of Taste, Administrative Assistant
August 1991 - February 1992	Going Places (Engineering Science), Archaeological Field Technician
August 1990 - August 1991	International Advisory Services, Administrative Assistant

Employment History

August 1995 - Present	Tetra Tech, Inc., Archaeologist
March 1994 - August 1995	Terra, LC, Staff Archaeologist
November 1993 - February 1994	Temps & Company (Dames & Moore), Archaeological Field and Lab Technician
May 1993 - November 1993	Kemron Environmental Services, Archaeological Field and Lab Technician
May 1993 - November 1993	Steel Service Center Institute, Assistant to the Vice President
March 1992 - May 1993	Matters of Taste, Administrative Assistant
August 1991 - February 1992	Going Places (Engineering Science), Archaeological Field Technician
August 1990 - August 1991	International Advisory Services, Administrative Assistant

APPENDIX B SCOPE-OF-WORK

CONTRACT NO.
DELIVERY ORDER NO.

SCOPE OF WORK FOR HISTORIC BUILDING INVENTORIES AND AND ARCHEOLOGICAL SURVEYS AT SELECTED ARMY BRAC FACILITIES

1. ACTION: For this scope of work the Contractor will be required to complete archeological surveys and historic building inventories for a selected number of Army facilities affected by the Base Realignment and Closure (BRAC) program. In most instances these installations are being completely or partially closed and excess facilities and lands are being excessed. The requested cultural resource investigations will be conducted to support the National Environmental Policy Act (NEPA) documents being prepared for these facilities and to identify properties at each facility which are eligible for the National Register of Historic Places (National Register). These eligible properties will receive National Historic Preservation Act Section 106 consideration during the property disposal process.

2. SERVICES TO BE PERFORMED:

A. Brief descriptions of specific historic property inventory services to be performed for each of the installations can be found as part of Attachment A to this scope of work.

B. Two basic services are to be conducted for this delivery order: historic architectural inventory surveys and Phase I archeological surveys. The expectations for each of these services is described below:

(1) Historic architectural inventory surveys - Historic architectural inventory surveys will examine all installation buildings constructed prior to 1946 and make recommendations about whether any of these buildings should be considered to be eligible for the National Register. Architectural surveys will be conducted in accordance with appropriate state guidelines for initial inventory surveys. Buildings and structures will be recorded on appropriate state forms or HABS Level IV forms if the state has no specific forms for historic architectural inventory surveys. The report of investigations for this effort will present a historic context for the installation and inventoried buildings and structures sufficient to make and justify any National Register recommendations. If deemed appropriate, and more than one eligible property is present, recommendations will be made concerning the establishment of a National Register eligible district. The report will display the recommended boundaries of any such recommended National Register district on a map in the report and give appropriate UTM coordinates for its proposed boundaries. The report will also document survey

strategy, adequately describe and illustrate the types of buildings and structures being examined and make specific recommendations concerning their eligibility for the National Register. The report format and content will follow appropriate guidelines issued by the State Historic Preservation Officer for these types of investigations.

(2) Archeological survey strategies/methodologies will follow all appropriate state guidelines for Phase I site location surveys. For this scope of work a Phase I archeological survey is defined as one that is sufficient to locate all probable archeological sites within the area designated for survey. State guidelines will be followed to determine the minimum number of artifacts within a given area required to define a location as an archeological site. State guidelines will also be followed for shovel test pit spacing, size, and depth, and screening of soil content. The survey will delineate site boundaries and display these boundaries on a map of appropriate scale to allow future investigators to relocate the sites. Site locations will also be displayed on appropriate U.S.G.S. maps for submission to the SHPO. State archeological site forms, or other appropriate state inventory forms, will be completed for all archeological sites located by this survey. Cleaning, cataloging and analysis of all artifacts recovered during the archeological field investigations is required. Archeological sites located by these efforts will be categorized as being eligible, potentially eligible or ineligible for the National Register of Historic Places. Archeological sites which are obviously badly disturbed, and possess no integrity or research potential, should be categorized as being ineligible for the National Register.

3. REPORT CONTENT AND FORMAT:

A. Where both archeological and architectural inventories are conducted for a facility, separate reports will be prepared so that they may be independently submitted to the SHPO for review. Mobile District or the appropriate MACOM will submit all reports to the SHPO for review. All reports produced for this effort shall be prepared in a publishable form, consistent with standards for formal professional papers. Minimally, reports will contain the following elements/information:

(1) An abstract which shall be a synopsis of the report containing the general conclusions and recommendations of the study and be suitable for publication in an abstracts journal.

(2) An introduction which shall include, but is not limited to the following: source of funding, purpose of the study, delineation of the study area, personnel involved in the study, and any problems encountered in conducting the study.

(3) Each report will place the project area in its regional setting and physical environment, specific attention will be given to describe previous pertinent cultural resource investigations within the immediate project area.

(4) The major component of each report shall be a thorough discussion of how the field investigations were conducted and the results of these investigations. For archeological investigations, artifactual and feature materials recovered or encountered during these investigations will be completely described. For architectural studies, thorough descriptions of the buildings and structures investigated will be included in the reports.

(5) Reports will assess the potential for archeological sites and buildings to contribute information to current archeological, historical, or architectural knowledge. National Register recommendations will be based upon this potential.

(6) Archeological reports will not include detailed site location descriptions or UTM coordinates. These data will be supplied on appropriate state site forms and maps to the Contracting Officer. One set of the project area maps and state site forms will be submitted with the Draft Report for review after completion of all phases of field work.

(7) For archeological surveys all archeological measurements taken, except for artifact measurements, will be in the metric system with English equivalents in parentheses. This will include, but not be necessarily limited to, site dimensions, distance of site from original water source, distance of site from landmarks, natural or cultural. Artifact measurements, where appropriate, will be metric.

(8) For architectural surveys all measurements taken will be in feet and inches, unless otherwise determined appropriate.

(9) Appendices, if required, and a bibliography will be included in each report.

(10) Following the completion of the field work for each investigation a brief managment summary of proposed recommendations will be prepared and submitted to the Mobile District contract project manager as a separate delivery item. This management summary will be of sufficient detail so as to allow the team writing the installation BRAC NEPA document to include commentary on possible property encumbrances during the property disposal process.

(11) The Principal Investigator shall authorize and sign the draft and final reports.

B. Format of the draft and final reports will include the following:

(1) Text material shall be typed or printed (full letter quality) on good quality acid-free paper, 8 1/2" by 11," with a 1/2" binding margin and 1" margins around the remainder of the page, using a 12 point type. No logos will appear on the text, drawings, plates or elsewhere in the report. Deviations from these standards require prior approval from the Contracting Officer.

(2) Drawings or plates will normally not be larger than 8 1/2" by 11" with sufficient margin for binding on the left side and shall include a graphic scale and a north arrow. Larger drawings or plates which are necessary to present a theme will be submitted unfolded in a separate folio.

(3) Hand lettering on maps, figures or plates is not acceptable. Include an appropriate scale on all maps, drawings and artifact photographs placed in the report. Place a north arrow on each map or drawing, where appropriate.

(4) The title page of the report must bear an appropriate inscription showing the source of funds, the title and number of the contract, the contracting party, and the author and Principal Investigator's names, if different.

(5) List all references cited in standard Society for American Archaeology format.

(6) Information shall be presented in textual, tabular and graphic forms, which ever or any combination thereof is most appropriate, effective and advantageous to communicate necessary information.

(7) All tables shall have a number, title, appropriate explanatory notes and a source note.

(8) Black and white photographs are preferred except when color changes are important for understanding the data being presented. Do not use instant type photographs. Plates appearing in the report must be good quality, clear reproductions made by halftone or equal quality process.

(9) For architectural resources, file photographs will be supplied with the following information: building number, date taken, and orientation of frame. Submit the photographs and negatives in clear sheets with 3 ring notebook punch. All photographs submitted under this Work Order will be professional quality glossy prints subject to approval by the Contracting Officer. Photographs will be 3" x 5" or the appropriate size cited by state guidelines for these sort of studies.

(10) File photographs for archeological resources will be supplied with the following information: site number, date taken, and orientation of frame. Submit the photographs and negatives in clear sheets with 3 ring notebook punch. All photographs submitted under this contract will be professional quality glossy prints

subject to approval by the Contracting Officer. Apply archivally gummed labels with the required information to the back of each print after the information is typed. Photographs will be 3" x 5" or an appropriate size cited by state guidelines for these sort of studies.

(11) A catalog of artifacts and records collected and assembled during this contract will be submitted as a separate document for review and approval with the draft report and shall include cubic volume of the material.

4. OTHER REQUIREMENTS

A. Curation: Following completion of archeological field work, the Contractor will be provided information concerning temporary government curation facilities to be used for curation of artifactual materials and records until an appropriate permanent repository is identified.

B. The Contractor will provide a safe working environment for all persons in his employ as prescribed by EM 385-1-1, "Safety and Health Requirements," dated October 1987. The Contractor shall be responsible for all damages to persons and property which occur as a result of the work and service under this contract, without recourse against the Government.

C. Dismissals. The Contracting Officer may require the Contractor to dismiss from work such employees as the Contracting Officer deems incompetent, careless or insubordinate. The Contractor shall replace at his expense any employee dismissed under the above conditions. The Contractor shall make every reasonable effort in the selection of his employees and in the prosecution of the work under this contract to safeguard all drawings, cultural materials, and other data to prevent theft or unauthorized use.

D. Compliance with Applicable Laws. The Contractor shall insure that his employees strictly observe the laws of the United States or other governing body affecting all operations at the site under contract. The Contractor shall comply with all applicable laws under which he is operating including those specifying the inspection of equipment.

5. REPORT SUBMISSIONS

A. Progress Reports, Draft and Final Reports are required. Format, contents, and schedules for submission of these documents are detailed below.

(1) The Contractor shall within five (5) working days after a conference or discussion, either telephonic or personal, where substantive issues were discussed, prepare a written record of the meeting or discussion and furnish a copy to the Contracting Officer. The written record shall include subject, names of participants,

outline of discussion and recommendations or conclusions. Number each written record in consecutive order.

(2) Promptly after execution of this delivery order, the Contractor shall prepare and submit to the Contracting Officer for approval, a work sequence diagram of the work and the expected start and completion dates. Work shall be completed in a continuous manner. The schedule shall include a progress chart at suitable scale to show with symbols the percentage completed at any time. The Contractor shall correct the schedule on the first day of each month and shall immediately deliver a copy of the revised schedule and progress chart to the Contracting Officer. The Contractor shall furnish sufficient technical, supervisory and administrative personnel to insure the prosecution of the work in agreement with the approved progress schedule.

(3) The Contractor shall submit monthly progress reports to the Contracting Officer on the first day of each month. Progress reports shall contain an accurate up to date summary of all work completed during the previous month. Any problems encountered or anticipated that could delay completion of the reports on schedule should be discussed in detail. Progress reports should list the types of activities conducted and the percentage of work completed by the progress report date.

(4) For each archeological and architectural investigation, a comprehensive final report with required appendices will be prepared consistent with standards for formal professional papers and appropriate state guidelines. The Contractor shall submit five (5) copies of each draft report suitably bound, detailing the results of the work. All appropriate maps shall be included with the draft report. Perfect binding of the final reports is required.

(5) For each investigation the Contractor shall determine the number of report copies required by the SHPO for their review. It will, however, be the responsibility of the Government to submit all reports to the SHPO for review after their receipt from the Contractor.

B. The Government will complete its review and furnish comments furnished to the Contractor within thirty (30) days after receipt of each draft report. Should the Government exceed the stated review time, it will grant a corresponding extension to the Work Order. Additional drafts may be required based on the comments of reviewers at no additional cost to the Government. Professional editing of the draft and final report is a mandatory task.

C. Submit 30 copies of each final report, one copy of the report text on 3 1/2 inch disks in Microsoft Word format, plus one camera ready copy (a reproducible master copy of the original text, drawing and plates, including negative mock ups), incorporating the reviewers' comments, to the Contracting Officer. Acceptance of each final report is contingent upon written approval by the Government.

D. Neither the Contractor nor his representative shall release or publish any sketch, photograph, reports or other materials of any nature obtained or prepared under this Work Order without specific written approval of the Contracting Officer, before the final acceptance of the report by the Government.

E. The Contracting Officer may, at any time during the course of this Work Order, require maps, photographic, textual or other information for planning or interpretive purposes. These materials will be provided by the Contractor in a prompt manner as a part of this Work Order.

F. All materials and records produced or collected under this Work Order, using contract funds, are the property of the U.S. Government and may be claimed by the Contracting Officer upon demand.

6. CONFERENCES AND MEETINGS. Two categories of meetings will be held between the Contractor and the Contracting Officer (1) scheduled formal progress reviews, (2) informal meetings as needed for clarification, help, coordination and discussion.

A. Category (1) meetings will be scheduled after the initiation of the Work Order and will be held at the Contractor's Office. For these meeting the Contractor will formally present all progress made on the Work Order to that date. A minimum of two Category (1) meetings will be held as a part of this work order.

B. Category (2) meetings, if needed, may be called on short notice by the Contractor and Contracting Officer as needed during the course of the Work Order for coordination, these will be held at a mutually agreeable time and place.

C. Category (1) and (2) meetings are considered a part of the Work Order and no extra payment will be made for attendance.

7. SCHEDULE OF SUBMITTALS: The following times and requirements are established for submitting the various products that are mentioned above.

A. The exact start date of field work for each installation included as part of this delivery order will be determined through consultations between the Mobile District contract project manager, the Army MACOM, and the Contractor within 14 days of effective date of this delivery order. In no case, however, will field work for any part or all of this delivery order be initiated later than 90 days following the effective date of this delivery order.

B. The draft report and other required items for each investigation performed as part of this scope of work will be submitted by the Contractor to the contract project manger within 45 calendar days after completion of field work for each work item. The Mobile

District will provide comments on each draft report within 30 calendar days following its receipt.

C. The final report for each investigation performed as part of this scope of work will be submitted by the Contractor within 45 days after receipt of government comments.

8. DELIVERABLES: All costs of deliveries shall be borne by the Contractor. Address each delivery to Dr. Neil Robison, Contract Project Manager, CESAM-PD-E, Mobile District, U.S. Army Corps of Engineers, Post Office Box 2288, Mobile, Alabama 36628-0001, or other address as requested, and include a letter or shipping form listing the materials being transmitted, being properly numbered, dated and signed.

9. ARCHAEOLOGICAL RESOURCES PROTECTION ACT (ARPA) PERMIT. The Archaeological Resources Protection Act of 1979 requires that the person doing the work described in this Scope of Work obtain an ARPA Permit for such work. The finalized contract, including the Scope of Work, and the Contractor's proposal will constitute the required permit under 32CFR229.6 and .8 for each of the facilities to be investigated.

10. PAYMENT SCHEDULE: The contractor can bill up to 65% of the total contract price at the successful completion of all field work, 85% upon submittal of the draft report, and final payment upon acceptance of the final report.

11. POINT OF CONTACT: The Contract Project Manager for this delivery order is Dr. Neil Robison, CESAM-PD-E, Mobile District, U.S. Army Corps of Engineers, Post Office Box 2288, Mobile, Alabama 36628-0001, Telephone (334) 690-3018, FAX (334) 690-2605. The Mobile District point of contact will supply the Contractor with appropriate points of contact for each of the facilities to be investigated.

12. DELIVERY ORDER COMPLETION DATE: All services to be provided under this Delivery Order will be completed within 300 calendar days after the effective date of this work order.

ATTACHMENT A

INSTALLATIONS FOR WHICH HISTORIC PROPERTY INVENTORY SERVICES ARE TO BE PERFORMED

Fort Totten New York

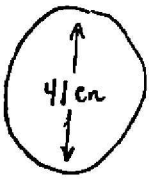
Cultural Resource investigations for Fort Totten will consist of two tasks: 1) a Phase I archeological inventory of currently open, undeveloped lands at the installation and 2) a historic architectural inventory. Fort Totten is located in the New York City borough of Queens. The fort was originally established in 1857 as a harbor fortification to protect New York City.

Archeological surveys will be conducted of the open, undeveloped lands at Fort Totten; these include predominately the parade field and an area proposed for the construction of a new warehouse associated with the Reserve Center enclave (See map of Fort Totten lands). The areas to be surveyed consist of approximately 15 acres of land.

Part of the original shoreline fortifications and approximately 76 buildings built before 1946 still stand at Fort Totten. The Contractor will conduct a historic architectural inventory of those buildings and structures at Fort Totten which were constructed before 1946. The report produced by the Contractor as part of these investigations will make National Register eligibility recommendations for these buildings. Building 208, the Castle building, was placed on the National Register as an individual property in 1986. The Contractor will be supplied with a draft National Register form that was prepared in 1986, but never submitted to the New York SHPO. In 1988 Mariani and Associates prepared a report on significant family housing quarters at Fort Totten. A historic preservation plan (HPP) and "Command Guide to the Management of Historic Resources" were prepared for Fort Totten by Timelines, Inc. in 1989. The HPP contains a list of contributing structures for a Fort Totten historic district, but this document does not appear to have been coordinated with the New York SHPO. For this effort Contractor recommendations concerning National Register eligibility will take into consideration current building conditions and not rely on past recommendations

APPENDIX C REPRESENTATIVE SOIL LOGS

FT TOTTEN
SECTION A



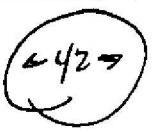
STP NUMBER and COORDINATES: #59 450'N 150'E
LOCATION 2M east of penalty area of north soccer goal

LEVEL	DEPTH	SOILTYPE	MUNSELL	ARTIFACTS
1	Ø 9	silty loam	10YR 3/2 very dark grayish brown	Ø 1 w/ware shard 1 glass shard 2 nails 1 quartz flake (marginal) 1 decortification flake from a small cobble, cortex shares signs of possible pecking or utilization
2	9 - 29	silty loam	10YR 4/3 brown	
3	29 - 95	very fine sandy silt loam cobbles	10YR 5/6 yellowish brown	* 1 dark chert flake
(4)	95 - 105	very fine sand friable cobbles w/ crystals	10YR 6/8 brownish yellow	Ø

*NOTE: dark chert flake found within loose dirt after scraping walls., exact level not known

DATE 11.15.96
EXCAVATOR INITIALS DR

STP NUMBER and COORDINATES: #53 400'N 150'E
LOCATION



LEVEL	DEPTH	SOIL TYPE	MUNSELL	ARTIFACTS
1	Ø - 25	silty loam	10YR 3/2 very dark grayish brown	NCM
2	25 - 52	fine sandy silt loam	10YR 5/6 MOTTLED W/ 10YR 3/2	
3	52 - 64	very fine sand compact	10YR 6/8 brownish yellow	

DATE 11.15.96
EXCAVATOR INITIALS DR

FT TOTTEN
SECTION B

STP NUMBER and COORDINATES: #2 50's
LOCATION

LEVEL	DEPTH	SOILTYPE	MUNSELL	ARTIFACTS
1	Ø - 30	SILTY LOAM	10YR 4/3 BROWN	LEVEL 1 5 NAILS (SOME APPEAR TO BE CUT NAILS) 1 IRON WARE SHARD 1 WHITE WARE SHARD 2 UNDETERMINED CERAMICS POSSIBLE: MOCHA WARE OR ROCKINGHAM WARE 1 glass (bottle) shard
INTERFACE: LEECHING OR MOTTLING OF TWO LEVELS (14 - 30cm)				
2	30 - 55	SILT LOAM	10YR 5/4 YELLOWISH BROWN	LEVEL 2 Ø

* MOST OF LEVEL 1 ARTIFACTS APPEARED NEAR THE TOP OF THE INTERFACE LEVEL

DATE 11 16 96
EXCAVATOR INITIALS DR

133

STP NUMBER and COORDINATES: #4 150's
LOCATION –

LEVEL	DEPTH	SOIL TYPE	MUNSELL	ARTIFACTS
1	Ø - 17	SILTY LOAM	10YR 4/3 BROWN	Ø
2	17 - 45	SILT LOAM	10YR 4/3 MOTTLED W/ 10YR 5/4 yellowish brown	L-2 1- nail (cut?) 1- wood frag.
FEATURE → 3	45 - 99	SEE PLAN VIEW ON BACK		L-3 2 IRON STONE SHARDS 2 white glass buttons 1 leather piece MANY NAILS FAUNAL (BONE) 1 pipe stem frag shell glass shards
4	99 - 143	silty loam	(4) 10YR 4/6 dark yellowish brown	L-4 & 5 ✓ faunal (133 embs) ✓ 2 nails? coal possibly present 2 charcoal samples
5			(5) 10YR 4/2 dark grayish brown 10YR 5/4 yellowish brown	

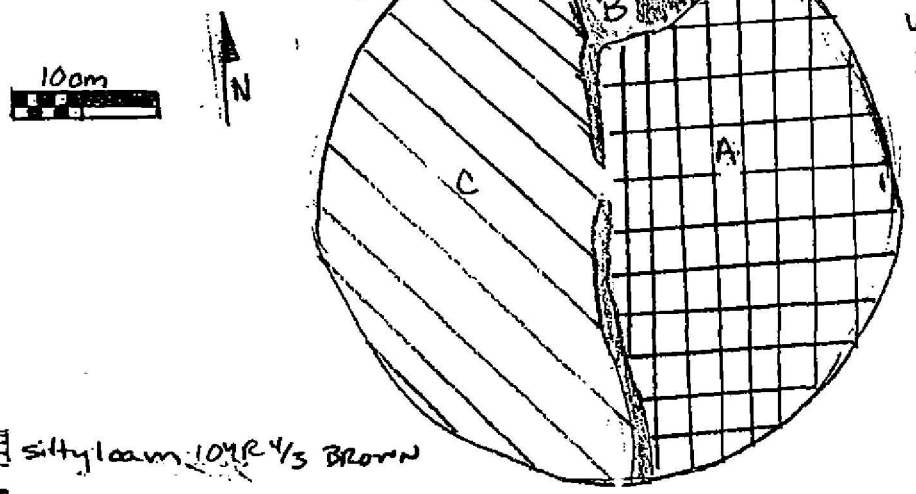
* SEE BACK FOR PLAN VIEW & OBSERVATIONS

DATE 11.16.96
EXCAVATOR INITIALS DR

T1 10TH
SECT. B
STP# 3 150's

38cmbs

PLAN VIEW



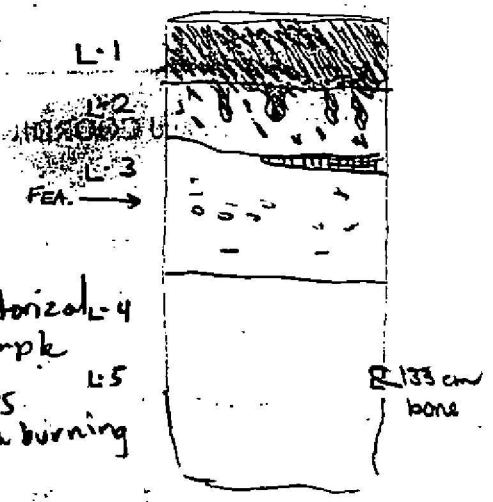
* when excavated soil A was a thin layer that was then mixed soils from B & C throughout feature.

A ▦ silty loam 10YR 4/3 BROWN

B ▨ CRUSHED SHELLS, COMPACT W/COAL (ANTHRACITE) CHART #1 GLEY 6/10Y GREENISH GRAY

C ▨ very fine mottled loam
2.5Y 5/4 light olive brown
10YR 4/3 brown
2.5Y 6/4 olive yellow
10YR 4/6 dark yellowish brown

PROFILE NOT TO SCALE



* OBSERVATIONS

Level 3 appears to be a historical feature or a fill episode that contained numerous historical artifacts, shell, unknown mineral that a sample was retained for. Level also contained numerous cobbles of varying size. The shell/rock appears a burning may have taken place.

Level 4 & 5

Due to depth decerning the two was not feasible, but two distinctive soil horizons are decernable. A drop in the rock content was drastic, only a few large cobbles where excavated. A faunal sample was retained that was clearly within these horizons as well as 2 charcoal samples. 2 nails & coal where also recovered but may have fallen from previous levels

~~BELLEMORE~~ Ft. Totten
SECTION C

✓ STP NUMBER and COORDINATES: C-6
LOCATION b/w road and church

LEVEL	DEPTH	SOILTYPE	MUNSELL	ARTIFACTS
1	topsoil 0-20	organic rootmat loam	10YR3/3	none
2	This may be some old road bed or something very gritty some smaller rocks 20-31	some grit & silt & loam	10YR4/2	1pc Ceram A? (1 window glass)
3	"A"? 31-47	Silty loam	7.5YR3/2	none
4	"B" 47-63	Silt	10YR5/4	do

DATE 11-21-94
EXCAVATOR INITIALS HL

✓ STP NUMBER and COORDINATES: C-20
LOCATION 50' from church

LEVEL	DEPTH	SOIL TYPE	MUNSELL	ARTIFACTS
1	0-12	topsoil/loam		1pc tp ww
2	12-20	band of silty fill like the sub of the Parade ground		none
3	20-50	very fine sand ; silt ~~75~~ changes gradually to	10YR5/6	↓
4	50-70	silty sand	10YR6/3	
5	70	same as 4 w/ reddish mottling		

Feature in N wall of STP there is a feature artifacts contained within include coal (lots) slag (lots) 1 sq. shell frag, roofing tin & slate, 2 brick. Detected under L.2 frags 30cm wide 60 deep tapers to bottom
Munsell

DATE
EXCAVATOR INITIALS

APPENDIX D ARTIFACT INVENTORY AND SHOVEL TEST PIT INFORMATION

FORT TOTTEN
SECTION A

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	2	N 050	2				historic	ceramic	1	unglazed redware rim sherd	
A	2	N 050	2	12-41	7.5YR4.2	loam	historic	ceramic	2	whiteware sherd	*mottled w/7.5YR4/6*
A	2	N 050	2				historic	glass	1	light aqua flat frag.	
A	2	N 050	2				historic	metal	1	unidentified nail	
A	2	N 050	1	0-12	7.5YR3/2	loam					
A	2	N 050	3	41-91	7.5YR6/6	sandy silt loam					
A	2	N 050	4	91-117	10YR6/6	fine sand					
A	3	N 100	1				historic	faunal	4	bivalve shell frag.	
A	3	N 100	1				historic	glass	1	brown container frag.	
A	3	N 100	1				historic	glass	1	clear container frag.	
A	3	N 100	1	0-65	10YR4/3	silty loam	historic	glass	1	dark green container frag.	cobbles throughout column; excavation halted because of rock
A	3	N 100	1				historic	metal	1	cut nail	
A	3	N 100	1				historic	metal	1	unidentified nail	
A	3	N 100	1				historic	structural	1	mortar	
A	4	N 150	2				historic	ceramic	3	whiteware foot sherds (mend)	
A	4	N 150	2	18-51	10YR3/2	sandy loam	historic	ceramic	10	whiteware sherds	very rocky fill. coal observed
A	4	N 150	2				historic	faunal	3	bivalve shell frags.	
A	4	N 150	2				historic	glass	4	aqua container frags.	
A	4	N 150	3	51-110	7.5YR5/6	very compact silt	historic	glass	1	frag. (discarded)	fill (?). coal observed
A	4	N 150	2				historic	metal	1	unidentified ferrous	
A	4	N 150	2				historic	metal	1	wire nail	
A	4	N 150	1	0-18	7.5YR2.5/2	sandy loam					
A	5	N 200	1	0-36	10YR3/2	loam w/large cobbles	historic	ceramic	1	whiteware rim sherd	
	5	N 200	1				historic	glass	1	clear container frag.	
A	5	N 200	1				historic	glass	1	light aqua glass frag.	
A	5	N 200	2	36-58	7.5YR5/6	silty sandy loam					
A	5	N 200	2								
A	6	N 250	1	0-48	7.5YR3/2	loam	historic	glass	1	clear container frag.	
A	6	N 250	1				historic	glass	1	red frag.	
A	6	N 250	1				historic	structural	1	brick frag.	
A	7	N 300	1	0-31	10YR3/3	silty loam w/10% gravels	historic	metal	1	cut nail (discarded)	
A	7	N 300	2	31-65	10YR4/4	silty loam w/10% cobbles					
A	8	N 350	1	0-27	10YR3/3	sandy loam w/5% gravels					

FORT TOTTEN
SECTION A

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	8	N 350	2	27-53	10YR4/4	sandy loam w/10% gravels & cobbles					
A	9	N 400	1	0-16	10YR4/3	silty loam					
A	9	N 400	2	16-30	10YR4/3	silty loam					mottled w/10YR6/8
A	9	N 400	3	30-55	10YR5/8	silty loam					
A	10	N 450	1	0-27	10YR3/3	sandy loam w/5% gravels					
A	10	N 450	2	27-47	10YR4/4	sandy loam w/5% gravels					
A	11	N 500	1	0-18	10YR3/3	sandy loam					
A	11	N 500	2	18-44	10YR4/4	compact silty loam					mottled w/compact sandy loam 10YR6/4
A	12	N 550	-	-	-	-					write-off (under bleachers)
A	13	N 050 W 050	1	-	10YR4/2	silty loam					
A	13	N 050 W 050	2	-	10YR5/6	fine sandy silt					
A	15	N 100 E 050	1	0-6	10YR3/2	loam					
A	15	N 100 E 050	2	6-43	10YR3/2	loam w/cobbles					mottled w/silty sandy loam 7.5YR5/6
A	15	N 100 E 050	3	43-60	7.5YR5/6	silty sandy loam					
A	16	N 100 E 100	1	0-12	10YR3/3	silty loam	historic	ceramic	1	porcelain w/molded deco.	
A	16	N 100 E 100	1				historic	glass	1	aqua base, body frag. w/molded lettering	
A	16	N 100 E 100	1				historic	glass	1	brown container frag.	
A	16	N 100 E 100	1				historic	glass	1	clear container frag.	
A	16	N 100 E 100	1				historic	glass	1	light aqua flat frag.	
A	16	N 100 E 100	1				historic	metal	1	unidentified ferrous	
A	16	N 100 E 100	1				historic	metal	3	unidentified nails	
A	16	N 100 E 100	1				historic	misc.	1	black bakelite plastic	
A	16	N 100 E 100	2	12-52	10YR3/2	gritty sandy silt loam					excavation halted because of impenetrable rocks
A	17	N 100 E 150	1	0-19	10YR3/3	sandy loam	historic	glass	1	light aqua flat frag. (discarded)	
A	17	N 100 E 150	2	19-68	10YR3/3	sandy loam w/30% gravels & pebbles					mottled w/10YR4/4 & 10YR5/6; coal observed
A	17	N 100 E 150	3	68-85	10YR5/4	sand					
A	18	N 100 E 200	1	0-20	10YR3/3	silty loam	historic	metal	1	unidentified lead object	
A	18	N 100 E 200	2	20-60	10YR4/6	fine sandy silt					mottled w/10YR3/3
A	18	N 100 E 200	3	60-81	10YR5/4	fine sand					
A	19	N 100 E 250	1	0-28	10YR3/3	silty loam w20% gravels					coal observed
A	19	N 100 E 250	2	28-50	10YR4/6	compact silty loam					

FORT TOTTEN
SECTION A

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	20	N 150 E 050	1	0-34	10YR3/3	silty loam					
A	20	N 150 E 050	2	34-54	10YR5/6	clayey loam					mottled w/10YR4/3
A	20	N 150 E 050	3	54-60	10YR5/6	compact silty loam					
A	21	N 150 E 100	1	0-21	10YR3/3	sandy loam w/5% gravels	historic	glass	1	light aqua flat frag.	
							historic	metal	6	cut nails	
A	21	N 150 E 100	1				historic	metal	6	unidentified ferrous	
A	21	N 150 E 100	1				historic	misc.	1	leather frag.	
A	21	N 150 E 100	1				historic	structural	1	brick frag.	
A	21	N 150 E 100	2	21-70	10YR4/4	sandy loam w/10%cobbles, 15% pebbles & gravels					10% mottled w/10YR 3/3
A	22	N 150 E 150	1				historic	faunal	29	bone frags.	
A	22	N 150 E 150	1	0-21	10YR3/3	silty loam w/large cobbles	historic	structural	3	brick frags. (3 specimens retained)	fill
A	22	N 150 E 150	2	21-54	10YR4/4	sandy loam w/5% pebbles					fill; mottled w/10YR3/3
A	22	N 150 E 150	3	54-66	10YR4/4	fine sandy loam w/25% gravels & cobbles					
A	22	N 150 E 150	4	66-80	10YR4/4	compact sandy loam w/50% pebbles					
A	23	N 150 E 200	2	15-115	10YR4/2	silty loam	historic	ceramic	1	whiteware sherd	fill or disturbed; mottled w/7.5YR5/6
A	23	N 150 E 200	2				historic	faunal	1	oyster shell	
A	23	N 150 E 200	2				historic	metal	1	cut nail	
A	23	N 150 E 200	1	0-15	-	sod					
A	24	N 150 E 250	1	0-39	10YR3/3	silty loam w/10% quartzite gravels	historic	glass	1	green container frag.	coal observed
A	24	N 150 E 250	1				historic	metal	1	nail frag.	
A	24	N 150 E 250	2	39-59	10YR4/6	clayey loam w/2% cobbles					
A	25	N 150 E 300	1	0-31	10YR3/3	sandy loam	recent	misc.	1	plastic cigarette filter part	
A	25	N 150 E 300	2	31-53	10YR4/4	sandy loam w/5% cobbles					
A	26	N 200 E 050	1	0-30	10YR3/3	sandy loam w5% gravels	historic	ceramic	1	whiteware sherd	
A	26	N 200 E 050	1				historic	metal	1	cut nail	
A	26	N 200 E 050	1				historic	structural	1	brick frag. (discarded)	

FORT TOTTEN
SECTION A

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	26	N 200 E 050	2	30-52	10YR4/4	sandy loam w/10% gravels & 5% cobbles					mottled w/10YR3/3
A	26	N 200 E 050	3	52-67	7.5YR4/6	sand w/20% pebbles					
A	27	N 200 E 100	1	0-46	10YR3/3	sandy loam w/20%gravels	historic	glass	1	clear container frag.	
A	27	N 200 E 100	1				historic	glass	1	light aqua flat frag.	
A	27	N 200 E 100	1				historic	metal	5	cut nails	
A	27	N 200 E 100	1				historic	metal	2	unidentified ferrous	
A	27	N 200 E 100	1				historic	structural	1	brick frag.	
A	27	N 200 E 100	2	46-68	10YR4/4	sandy loam w/5% pebbles					
A	28	N 200 E 150	1	0-30	10YR3/3	silty loam w/10% quartzite gravels	historic	ceramic	2	redware	
A	28	N 200 E 150	1				historic	glass	1	light aqua flat frag.	
A	28	N 200 E 150	1				historic	glass	1	white button	
A	28	N 200 E 150	1				historic	metal	1	unidentified nail	
A	28	N 200 E 150	2	30-58	10YR4/6	clayey loam					
A	28	N 200 E 150	3	58-68	10YR6/3	compact silty loam					
A	29	N 200 E 200	1	0-30	10YR4/2	silty loam	historic	glass	1	light aqua flat frag. (discarded)	
	29	N 200 E 200	1				recent	misc.	1	battery core (discarded)	
A	29	N 200 E 200	2	30-67	10YR5/6	fine sandy silt					
A	30	N 200 E 250	1	0-31	10YR3/3	sandy loam w/5% gravels	historic	ceramic	1	painted porcelain chick figurine	
A	30	N 200 E 250	1				historic	glass	1	light aqua flat frag.	
A	30	N 200 E 250	1				historic	metal	1	cut nail	
A	30	N 200 E 250	2	31-52	10YR4/4	sandy loam w/5% cobbles					
A	33	N 250 E 050	1	0-31	10YR3/3	sandy silt loam					mottled w/10YR4/4
A	33	N 250 E 050	2	31-43	10YR3/3	silty loam w/<5% gravels					
A	33	N 250 E 050	3	43-62	10YR4/4	sandy loam w/5% gravels & pebbles					
A	34	N 250 E 100	1	0-53	10YR3/3	silty loam w/5% gravels	historic	ceramic	1	whiteware sherd	
A	34	N 250 E 100	2	53-73	10YR4/4	sandy loam w/5% pebbles					
A	35	N 250 E 150	1	0-22	10YR3/3	silty loam w/5% pebbles					
A	35	N 250 E 150	2	22-38	10YR4/4	sandy silt loam w/5% pebbles					mottled w/10YR3/3

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SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	35	N 250 E 150	3	38-79	10YR4/4	sandy clay loam w/15% pebbles & 5% cobbles					
A	35	N 250 E 150	4	79-93	10YR4/4	compact sand w/25% pebbles					
A	36	N 250 E 200	1	0-40	10YR4/2	silty loam	historic	metal	1	nail (discarded)	
A	36	N 250 E 200	2	40-81	10YR5/6	fine sandy silt					
A	36	N 250 E 200	3	81-90	10YR4/6	sandy silt					
A	37	N 250 E 250	1				historic	ceramic	7	whiteware sherds	
A	37	N 250 E 250	1	0-53	10YR3/3	silty loam	historic	ceramic	2	whiteware sherds w/purple undergiaze transfer print	
A	37	N 250 E 250	1				historic	glass	1	clear frag.	
A	37	N 250 E 250	1				historic	glass	6	light aqua flat frags.	
A	37	N 250 E 250	1				historic	metal	4	cut nails	
A	37	N 250 E 250	1				historic	metal	1	unidentified nail	
A	37	N 250 E 250	1				historic	structural	1	brick frag.	
A	37	N 250 E 250	2	53-90	10YR4/6	clayey loam					
A	38	N 250 E 300	1	0-40	10YR3/2	sandy silty loam	historic	glass	1	light aqua flat frag. (discarded)	
A	38	N 250 E 300	1				historic	metal	1	nail (discarded)	
A	38	N 250 E 300	1				historic	structural	1	brick frag. (discarded)	
A	38	N 250 E 300	2	40-58	7.5YR5/6	silty sandy loam					
A	39	N 300 E 050	1	0-46	10YR3/3	sandy loam w/10-15% quartzite pebbles	historic	ceramic	1	unglazed redware	coal observed
A	39	N 300 E 050	1				historic	metal	1	cut nail	
A	39	N 300 E 050	1				historic	metal	2	unidentified nails	
A	39	N 300 E 050	1				historic	structural	5	brick frags.	
A	39	N 300 E 050	2	46-66	10YR4/4	sandy clay loam w/10-20% quartzite pebbles & cobbles					
A	40	N 300 E 100	1				historic	glass	1	blue button	
A	40	N 300 E 100	1	0-29	10YR3/3	sandy loam w/10-15% quartzite pebbles	historic	glass	1	clear container frag.	
A	40	N 300 E 100	1				historic	metal	1	cut nail	
A	40	N 300 E 100	2	29-50	10YR4/4	sandy clay loam w/5% quartzite gravels					

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SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	41	N 300 E 150	1	0-19	10YR3/3	sandy clay loam w/5% quartzite pebbles					coal observed
A	41	N 300 E 150	2	19-53	10YR4/3	sandy clay loam w/5% quartzite pebbles					
A	41	N 300 E 150	3	53-67	10YR4/4	compact sand loam					
A	41	N 300 E 150	4	67-76	10YR4/4	compact sand loam w/10-15% quartzite pebbles					
A	41	N 300 E 150	5	76-91	10YR4/4	sand					
A	42	N 300 E 200	1	0-29	10YR4/3	loam					
A	42	N 300 E 200	2	29-50	10YR5/8	silty loam					
A	43	N 300 E 250	1	0-49	10YR3/2	sandy loam	historic	metal	1	nail (discarded)	
A	43	N 300 E 250	2	49-74	7.5YR5/6	-					
A	44	N 300 E 300	2	16-46	-	gravels & cobbles	historic	ceramic	1	creamware	roadbed (?)
A	44	N 300 E 300	2				historic	ceramic	1	kaolin pipe bowl sherd	
A	44	N 300 E 300	2				historic	faunal	1	bivalve shell frag.	
A	44	N 300 E 300	2				historic	faunal	4	bone frags.	
A	44	N 300 E 300	2				historic	glass	2	clear container frags.	
A	44	N 300 E 300	2				historic	glass	1	clear flat frag.	
A	44	N 300 E 300	2				historic	glass	1	milkglass	
A	44	N 300 E 300	2				historic	metal	1	cut nail	
A	44	N 300 E 300	2				historic	metal	1	lead fishing sinker	
A	44	N 300 E 300	1	0-16	10YR3/2	-					
A	44	N 300 E 300	3	46-60	10YR3/3						
A	44	N 300 E 300	4	60-70	7.5YR5/6						
A	45	N 350 E 050	1	0-30	10YR3/3	silty loam w/10% quartzite gravels					
A	45	N 350 E 050	2	30-50	10YR5/6	clayey loam					
A	45	N 350 E 050	3	50-60	10YR5/6	compact silty loam					mottled w/10YR4/3
A	47	N 350 E 150	1	0-21	10YR3/3	sandy loam w/10% pebbles	historic	glass	1	clear frag.	3 cut granite blocks @ 14-17cm near STP
A	47	N 350 E 150					historic	metal	4	cut nails	
A	47	N 350 E 150	2	21-49	10YR4/4	sandy silt loam w5% quartzite pebbles					
A	47	N 350 E 150	3	49-64	10YR4/4	compact clayey loam w/25% quartzite pebbles					
A	49	N 350 E 200	1	0-29	10YR4/3	loam	historic	ceramic	2	whiteware sherds (mend)	

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SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	49	N 350 E 250	1	0-30	10YR3/3	silty loam w/5% gravels	historic	glass	1	light aqua flat frag. (discarded)	
A	49	N 350 E 200	2	29-52	10YR3/8	silty loam					
A	49	N 350 E 250	2	30-82	10YR4/4	sandy loam w/10% cobbles					
A	49	N 350 E 250	3	82-93	10YR4/4	sandy silt w/10% pebbles					
A	51	N 400 E 050	2	14-28	10YR4/3	silty loam	historic	glass	1	aqua container frag.	mottled w/10YR6/8
A	51	N 400 E 050	1	0-14	10YR4/3	silty loam	historic	metal	1	wire nail	
A	51	N 400 E 050	2				historic	misc.	1	unidentified hard rubber object	
A	51	N 400 E 050	3	28-45	10YR5/8	fine sandy silt loam					
A	52	N 400 E 100	1	0-17	10YR4/3	silty loam					
A	52	N 400 E 100	2	17-40	10YR5/8	sandy silt loam					mottled w/10YR4/3
A	52	N 400 E 100	3	40-48	10YR4/8	fine sand					
A	53	N 400 E 150	1	0-25	10YR3/2	silty loam					
A	53	N 400 E 150	2	25-52	10YR5/6	fine sandy silt loam					mottled.w/10YR3/2
A	53	N 400 E 150	3	52-64	10YRr6/8	compact fine sand					
A	54	N 400 E 200	1	0-32	10YR3/2	loam	historic	ceramic	1	rockingham sherd	
A	54	N 400 E 200	2	32-64	7.5YR5/6	silty sandy loam					
A	54	N 400 E 200	3	64->							C' horizon
A	55	N 400 E 250	3	31-49	10YR4/6	sandy loam w/10% gravels	historic	glass	2	clear frags.	fill; mottled w/10YR3/3
A	55	N 400 E 250	1	0-22	10YR3/3	sandy silt loam w/20% gravels	historic	glass	1	light aqua flat frag.	
A	55	N 400 E 250	3				historic	metal	1	cut nail	
A	55	N 400 E 250	4	49-72	10YR3/3	silty loam w/5% quartzite cobbles	historic	metal	1	unidentified ferrous	buried 'A'
A	55	N 400 E 250	3				historic	metal	3	unidentified nails	
A	55	N 400 E 250	2	22-31	10YR3/3	sandy silt loam w90% gravels & cobbles					road bed; mottled w/10YR4/6
A	55	N 400 E 250	5	72-92	10YR4/6	silty clay loam w/10 15% cobbles					
A	57	N 450 E 050	1	0-24	10YR3/3	silty loam					
A	57	N 450 E 050	2	24-49	10YR4/6	sandy clay loam w/20% gravels					
A	57	N 450 E 050	3	49-59	10YR4/3	compact silty loam					
A	58	N 450 E 100	1	0-21	10YR3/2	silty sandy loam	historic	glass	1	clear container frag. (discarded)	

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SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	58	N 450 E 100	1				historic	glass	1	clear flat frag. (discarded)	
A	58	N 450 E 100	2	21-46	7.5YR5/6	compact sandy silt					
A	59	N 450 E 150	2	9-29	10YR4/3	silty loam	historic	ceramic	1	whiteware sherd	
A	59	N 450 E 150	2				historic	glass	1	light aqua flat frag.	
A	59	N 450 E 150	2				prehistoric	lithic	1	black chert flake	level of chert flake uncertain
A	59	N 450 E 150	2				prehistoric	lithic	1	quartz flake w/cortex	
A	59	N 450 E 150	2				prehistoric	lithic	1	quartzite flake w/cortex	
A	59	N 450 E 150	2				historic	metal	2	unidentified nails	
A	59	N 450 E 150	1	0-9	10YR3/2	silty loam					
A	59	N 450 E 150	3	29-95	10YR5/6	fine sandy silt loam w/cobbles					
A	59	N 450 E 150	4	95-105	10YR6/8	very fine sand w/cobbles					
A	60	N 450 E 200	1	0-34	10YR4/3	silty loam	historic	metal	2	cut nails	
A	60	N 450 E 200	2	34-79	10YR5/8	silty loam					
A	61	N 450 E 250	1	0-18	10YR3/3	sandy silt loam w/10% gravels	historic	glass	1	brown container frag.	
A	61	N 450 E 250	3	30-61	10YR4/4	sandy loam w/10% gravels & pebbles	historic	glass	1	flat glass (discarded)	mottled w/10YR3/3
A	61	N 450 E 250	1				historic	glass	2	light aqua flat frags.	
A	61	N 450 E 250	1				historic	metal	4	cut nails	
A	61	N 450 E 250	1				historic	metal	1	ferrous screw	
A	61	N 450 E 250	1				historic	metal	1	unidentified ferrous	
A	61	N 450 E 250	1				historic	metal	1	unidentified nail	
A	61	N 450 E 250	1				historic	structural	3	brick frags.	
A	61	N 450 E 250	2	18-30	10YR3/3	sandy silt loam w/90% gravels & cobbles				roadbed; mottled w/10YR4/4	
A	61	N 450 E 250	4	61-79	10YR3/3	silty loam w/10% pebbles					
A	61	N 450 E 250	5	79-95	10YR4/4	silty loam w/15% pebbles & 20% cobbles					
A	62	N 500 E 050	1	0-29	10YR3/3	silty loam					
A	62	N 500 E 050	2	29-46	10YR4/6	sandy clay loam w/20% gravels					
A	62	N 500 E 050	3	46-56	10YR6/3	compact silty loam					
A	63	N 500 E 100	1	0-24	10YR3/2	silty sandy loam					
A	63	N 500 E 100	2	24-44	7.5YR4/6	silty sand					mottled w/10YR3/2
A	63	N 500 E 100	3	44->	-	very compact sand					
A	64	N 500 E 150	1	0-19	10YR3/2	loamy silt sand					

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SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	64	N 500 E 150	2	19-51	7.5YR5/6	compact sandy silt					
A	64	N 500 E 150	3	51-64	10YR4/4	very compact sand					
A	65	N 500 E 200	1	0-23	10YR4/3	silty loam					
A	65	N 500 E 200	2	23-74	10YR5/8	silty loam					
A	66	N 500 E 250	1	0-20	10YR3/3	silty loam w/10% gravels	historic	ceramic	1	kaolin pipe-bowl sherd w/rouletted rim & part of maker's-mark	
A	66	N 500 E 250	1				historic	glass	1	light aqua flat frag.	
A	66	N 500 E 250	1				historic	metal	1	cut nail	
A	66	N 500 E 250	3	28-44	10YR4/4	silty loam w/10% gravels	historic	metal	1	cut nail	30% mottled w/10YR3/3
A	66	N 500 E 250					historic	metal	1	unidentified ferrous	
A	66	N 500 E 250	1				historic	structural	1	brick frag.	
A	66	N 500 E 250	5	46-61	10YR3/3	sandy silt loam w5% pebbles	historic	structural	3	mortar (3 specimens retained)	
A	66	N 500 E 250	2	20-28	10YR3/3	sandy loam w/90% gravels and cobbles					old roadbed; 10% mottled w/10YR 3/3
A	66	N 500 E 250	4	44-46	10YR3/3	sandy silt loam w/90% mortar & rocks					
A	66	N 500 E 250	6	61-80	10YR4/4	silty loam w/15% pebbles & <5% cobbles					
A	67	N 550 E 050	1	0-28	10YR3/3	silty loam					
A	67	N 550 E 050	2	28-43	10YR4/6	clayey loam					
A	67	N 550 E 050	3	43-45	10YR4/6	very compact sand w90% gravels					roadbed (?); excavation halted because of impenetrable gravel
A	68	N 550 E 100	1	0-30	-	silty sandy loam					
A	68	N 550 E 100	2	30-40	-	sandy silt					
A	69	N 550 E 150	1	0-26	10YR3/2	loam	historic	glass	1	light aqua flat frag. (discarded)	
A	69	N 550 E 150	2	26-48	7.5YR5/6	silty sandy loam					
A	70	N 500 E 200	1	0-40	10YR3/3	silty loam	historic	structural	1	brick frag.	
A	70	N 500 E 200	2	40-70	10YR4/6	silty clay loam					
A	71	N 600 E 050	1	0-30	10YR2/2	silty sandy loam					
A	71	N 600 E 050	2	30-37	10YR4/6	clayey loam					mottled w/10YR3/3
A	71	N 600 E 050	3	37-54	10YR3/3	silty loam					mottled w/10YR4/6
A	71	N 600 E 050	4	54-69	10YR4/6	clayey loam					
A	71	N 600 E 150	1	0-16	10YR3/2	silty sandy loam					

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SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	71	N 600 E 150	2	16-38	7.5YR5/6	silty sand					lower interface from 38cm to 48cm
A	71	N 600 E 150	3	38-50	10YR5/4	compact sandy silt					
A	71	N 600 E 150	4	50-71	7.5YR4/6	silty sand					
A	71	N 600 E 150	5	71-74	7.5YR5/4	compact silty sand					
A	71	N 600 E 150	6	71-80	7.5YR5/8	very compact sand w/cobbles					
A	72	N 600 E 200	1	0-30	10YR3/3	silty loam	historic	glass	1	lamp chimney glass	
A	72	N 600 E 200	1				historic	metal	2	cut nails	
A	72	N 600 E 200	1				historic	metal	2	unidentified nails	
A	72	N 600 E 200	1				historic	structural	2	brick frags.	
A	72	N 600 E 200	2	30-60	10YR4/6	silty clay loam					
A	73	N 050 W 55	1	0-59	10YR4/3	silty loam	historic	ceramic	1	unglazed redware	excavation moved 5' W to bisect surface depression
A	73	N 050 W 55	1				historic	glass	1	light aqua flat frag.	
A	73	N 050 W 55	1				historic	metal	1	unidentified nail	
A	73	N 050 W 55	1				recent	misc.	1	yellow plastic frag.	
A	73	N 050 W 55	1				historic	structural	1	brick frag.	
A	73	N 050 W 55	1								
A	73	N 050 W 55	1								
A	73	N 050 W 55	2	59-74	10YR5/6	fine sandy silt					
A	74	N 050 W 100	1				historic	ceramic	1	glazed industrial pipe	
A	74	N 050 W 100	3	73-104	10YR4/3	sandy silt	historic	ceramic	1	kaolin pipe bowl sherd	excavation halted because of impenetrable brick & mortar
A	74	N 050 W 100	3				historic	ceramic	1	porcelain sherd	
A	74	N 050 W 100	1	0-67	10YR3/3	silty loam	historic	ceramic	2	redware rim sherds	
A	74	N 050 W 100	1				historic	ceramic	2	redware sherds	
A	74	N 050 W 100	1				historic	faunal	1	bivalve shell frag.	
A	74	N 050 W 100	1				historic	glass	1	light aqua flat frag.	
A	74	N 050 W 100	1				historic	metal	1	unidentified nail	
A	74	N 050 W 100	3				historic	structural	2	brick (2 specimens retained)	
A	74	N 050 W 100	1				historic	structural	1	brick frag.	
A	74	N 050 W 100	3				historic	structural	3	mortar (3 specimens retained)	
A	74	N 050 W 100	2	67-73	10YR2/2	fine sandy silt loam					
A	75	N 100 W 050	1	0-43	10YR4/3	silty loam	historic	ceramic	1	possible creamware	
A	75	N 100 W 050	1				historic	glass	1	brown container frag.	
A	75	N 100 W 050	1				historic	metal	3	cut nails	
A	75	N 100 W 050	1				historic	metal	1	five-cent coin (Indian head/buffalo), date not discernible	

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SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	75	N 100 W 050	2	43-67	10YR5/6	fine sandy silt					
A	76	N 100 W 100	1	0-35	10YR4/3	silty loam	historic	glass	1	light aqua flat frag.	
A	76	N 100 W 100	1				historic	metal	2	cut nails	
A	77	N 150 W 050	2	35-105	10YR3/2	silty sandy loam	historic	ceramic	2	whiteware sherds	fill/feature; mottled w/7.5YR5/6. coal observed
A	77	N 150 W 050	2				historic	faunal	1	bivalve shell frag.	
A	77	N 150 W 050	2				historic	glass	1	light aqua container frag.	
A	77	N 150 W 050	2				historic	glass	3	light aqua flat frags.	
A	77	N 150 W 050	2				historic	metal	2	unidentified ferrous	
A	77	N 150 W 050	2				historic	metal	6	unidentified nails	
A	77	N 150 W 050	2				historic	structural	3	brick frags.	
A	77	N 150 W 050	1	0-35	10YR3/2	sod					
A	79	N 200 W 050	2	16-105>	10YR3/2	compact silty sand	historic	ceramic	2	whiteware sherds	fill or disturbed; mottled w/7.5YR5/6
	79	N 200 W 050	2				historic	glass	1	brown container frag.	
A	79	N 200 W 050	2				historic	glass	1	clear container frag.	
A	79	N 200 W 050	2				historic	glass	1	lavender container finish & neck frag.	
A	79	N 200 W 050	2				historic	glass	2	light aqua flat frags.	
A	79	N 200 W 050	2				historic	metal	1	unidentified nail	
A	79	N 200 W 050	2				recent	misc.	1	pink plastic rim frag.	
A	79	N 200 W 050	1	0-16	10YR3/2	loam					
A	80	N 200 W 100	3	37-71	10YR4/4	silty loam	historic	glass	1	green frag.	
A	80	N 200 W 100	3				historic	glass	1	lavender container frag.	
A	80	N 200 W 100	3				recent	metal	1	brass cartridge case	
A	80	N 200 W 100	1	0-19	10YR4/2	silty loam	historic	metal	1	unidentified nail	
	80	N 200 W 100	1				recent	misc.	1	plastic cigarette filter part	
A	80	N 200 W 100	3				historic	structural	1	brick frag.	
A	80	N 200 W 100	2	19-37	10YR4/2	silty loam w/fine sand					mottled w/10YR5/6
A	80	N 200 W 100	4	71-103	10YR4/6	sandy silt					
A	81	N 250 W 150	1	-	10YR4/2	silty loam	historic	ceramic	3	porcelain drawer pull (mend)	L.1/L.2 interface a mottled, rocky band
A	81	N 250 W 150	2	-	10YR4/4	silty loam	historic	glass	1	light aqua flat frag. (discarded)	
A	81	N 250 W 150	1				historic	metal	4	cut nails	
A	81	N 250 W 150	3	-	10YR4/6	sandy silt					
A	82	N 250 W 050	1	0-40	10YR3/2	silty loam					mottled w/7.5YR5/6
A	82	N 250 W 050	2	40->	7.5YR5/6	silt					
A	83	N 250 W 100	1	0-40	10YR3/2	silty loam	historic	glass	2	brown container frags.	
A	83	N 250 W 100	2	40-67	10YR3/3	silty	prehistoric	lithic	1	possible quartz flake	
A	83	N 250 W 100	1				historic	metal	1	cut nail	
A	83	N 250 W 100	3	67-87	7.5YR5/6	silty					

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SECTION A

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	84	N 250 W 150	1	0-57	10YR3/2	-	historic	glass	1	light aqua flat frag. (discarded)	fill
A	84	N 250 W 150	2	57-78	10YR3/3	-					mottled w/10YR3/2
A	84	N 250 W 150	3	78-103	7.5YR5/6	-					
A	85	N 300 W 050	1	0-49	10YR3/3	sandy loam	historic	glass	1	light aqua flat frag. (discarded)	
A	85	N 300 W 050	2	49-70	10YR4/4	silty loam w/5% gravels					
A	86	N 300 W 100	2	45-75	10YR3/3	silty loam w/5% gravels	historic	metal	1	unidentified nail	buried 'A'
A	86	N 300 W 100	1	0-45	10YR4/4	sandy loam					fill; 40% mottled w/10YR3/3
A	86	N 300 W 100	3	75-83	10YR4/4	silty loam w/5%gravels & 5% cobbles					10% mottled w/10YR3/3; excavation halted because of heavy cobble concentration
A	87	N 300 W 150	2	53-79	10YR3/3	silty loam w/5% gravels	historic	metal	1	unidentified nail	buried 'A'
A	87	N 300 W 150	1	0-53	10YR4/4	sandy loam					fill; 40% mottled w/10YR3/3
A	87	N 300 W 150	3	79-95	10YR4/4	silty loam w/5% gravels					10% mottled w/10YR3/3
A	88	N 350 W 050	1	0-42	10YR3/3	silty loam	historic	ceramic	1	whiteware sherd	
A	88	N 350 W 050	1				historic	glass	1	light aqua glass frag.	
A	88	N 350 W 050	1				historic	glass	1	pink button w/metal post frag.	
A	89	N 350 W 100	2	26-48	10YR3/3	clayey loam	historic	glass	1	light aqua flat frag.	
A	89	N 350 W 100	2				historic	structural	1	brick frag.	
A	89	N 350 W 100	1	0-26	10YR3/3	compact silty loam					mottled w/10YR4/6
A	89	N 350 W 100	3	48-68	10YR4/6	clayey loam					
A	90	N 350 W 150	1				historic	metal	1	unidentified ferrous cap-shaped object	
A	90	N 350 W 150	1	0-34	10YR3/3	silty loam	historic	metal	1	unidentified nail	
A	90	N 350 W 150	2	34-54	10YR4/6	silty clay					
A	91	N 350 W 200	1	0-45	10YR3/3	silty loam	historic	ceramic	1	soft-paste porcelain base sherd w/overglaze hand-painted decoration	
A	91	N 350 W 200	1				historic	ceramic	2	soft-paste porcelain rim sherds	
A	91	N 350 W 200	1				historic	ceramic	1	soft-paste porcelain sherd	
A	91	N 350 W 200	1				historic	structural	2	brick frags.	
A	91	N 350 W 200	2	45-65	10YR4/6	clayey loam w/25% cobbles					
A	92	N 400 W 050	1	0-30	10YR3/3	compact sandy silt loam	historic	glass	1	dark green container frag.	
A	92	N 400 W 050	1				historic	metal	1	cut nail	

FORT TOTTEN
SECTION A

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	92	N 400 W 050	1				historic	metal	1	unidentified nail	
A	92	N 400 W 050	2	40-78	10YR3/3	silty loam w5% gravels					
A	92	N 400 W 050	3	78-96	10YR4/4	sandy silt loam w/5% gravels					
A	93	N 400 W 100	2	20-56	10YR3/3	silty loam w/5%gravels	prehistoric	lithic	1	quartz flake	buried 'A'
A	93	N 400 W 100	1	0-20	10YR3/3	sandy loam					fill; 30% mottled w/10YR4/4 10% mottled w/10YR3/3
A	93	N 400 W 100	3	56-74	10YR4/4	silty loam					
A	94	N 400 W 150	1	0-31	10YR4/4	sandy loam	recent	metal	3	brass cartridge case frags.	fill; mottled w/10YR3/3. artifact may have been in lv 2
A	94	N 400 W 150	2	31-61	10YR3/3	silty loam w/5% gravels					buried 'A'
A	94	N 400 W 150	3	61-80	10YR4/4	silty loam					mottled w/10YR3/3
A	95	N 400 W 200	1	0-43	10YR4/4	sandy loam					
A	95	N 400 W 200	2	43-70	10YR3/3	silty loam w/5% gravels					
A	95	N 400 W 200	3	70-90	10YR4/4	silty loam w/5% gravels					mottled w/10YR3/3
A	96	N 450 W 050	1	0-29	10YR3/3	silty loam	historic	ceramic	1	whiteware sherd	coal observed
A	96	N 450 W 050					historic	structural	2	brick frags.	
A	96	N 450 W 050	2	29-60	10YR4/6	clayey loam					mottled w/10YR 6/3
A	96	N 450 W 050	3	60-70	10YR4/6	compact silty loam					
A	97	N 450 W 100	2				historic	ceramic	1	kaolin pipe bowl sherd	
A	97	N 450 W 100	2	31-58	10YR3/3	-	historic	ceramic	1	whiteware sherd	mottled w/10YR3/2. coal observed
	97	N 450 W 100	2				historic	faunal	1	bivalve shell frag.	
A	97	N 450 W 100	2				historic	metal	1	unidentified nail	
A	97	N 450 W 100	2				historic	structural	1	brick frag.	
A	97	N 450 W 100	1	0-31	-	-					topsoil/fill
A	97	N 450 W 100	3	58-88	7.5YR5/6	-					
A	98	N 250 W 150	1	0-27	10YR4/3	silty loam					mottled w/10YR4/3
A	98	N 250 W 150	2	27-62	10YR4/6	fine sandy silt					
A	98	N 250 W 150	3	62-73	10YR4/4	loam					
A	98	N 250 W 150	4	73-83	10YR5/8	sandy silt					
A	99	N 450 E 200	2	80-92	10YR3/3	silty loam	historic	glass	2	clear container frags.	buried 'A'
A	99	N 450 E 200	1	0-80	10YR3/3	silty loam w/15-20% gravels					fill; mottled w/10YR4/6
A	99	N 450 E 200	3	92-107	10YR4/6	clayey loam					
A	100	N 500 W 050	1	0-25	10YR3/3	silty loam	historic	metal	1	unidentified nail	
A	100	N 500 W 050	2	25-50	10YR4/4	silty loam w/10% gravels					

FORT TOTTEN
SECTION A

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
A	101	N 500 W 100	1	0-30	10YR3/3	silty loam	historic	metal	1	1990 twenty-five cent coin (discarded)	fill (?); mottled w/10YR4/4
A	101	N 500 W 100	2	30-62	10YR3/3	silty loam w/5% gravels					
A	101	N 500 W 100	3	62-85	10YR4/4	sandy silt loam w/5% gravels					
A	102	N 500 W 150	1	0-40	10YR3/3	silty loam	historic	metal	3	pocket knife frags.	mottled w/10YR4/4. coal observed
A	102	N 500 W 150	2	40-78	10YR3/3	silty loam w/5% gravels					
A	102	N 500 W 150	3	78-96	10YR4/4	sandy silt loam w/5% gravels					
A	103	N 500 W 200	2	66-89	10YR3/3	silty loam	historic	ceramic	2	whiteware sherds	buried 'A'
A	103	N 500 W 200	1	0-66	10YR3/3	compact silty loam	historic	glass	1	clear container frag.	fill; mottled w/10YR4/6
A	103	N 500 W 200	1				historic	metal	1	spike	
A	103	N 500 W 200	3	89-100	10YR4/6	clayey loam					

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	1	S 0	1	0-15	10YR3/2	loam					coal observed
B	1	S 0	2	15-45	7.5YR5/6	sandy silt					
B	2	S 050	1				historic	ceramic	2	rockingham sherds	
B	2	S 050	1				historic	ceramic	1	whiteware handle sherd	
B	2	S 050	1	0-30	10YR4/3	loam	historic	ceramic	1	whiteware sherd	
B	2	S 050	1				historic	glass	1	aqua container frag.	
B	2	S 050	1				historic	metal	2	unidentified ferrous	
B	2	S 050	1				historic	metal	5	unidentified nails	
B	2	S 050	2	30-55	10YR5/8	silty loam					
B	3	S 100	1	0-15	10YR3/2	sandy loam w/rocks & cobbles					
B	3	S 100	2	15-45	10YR3/2	sandy loam w/rocks & cobbles	historic	ceramic	1	whiteware sherd	mottled w/7.5YR5/6
B	3	S 100	2				historic	faunal	3	oyster shells	
B	3	S 100	2				historic	glass	1	aqua container frag. w/molded "..A.."	
B	3	S 100	2				historic	glass	3	light aqua flat frags.	
B	3	S 100	2				historic (?)	lithic	3	mica	
B	3	S 100	2				historic	metal	1	spike	
B	3	S 100	2				historic	metal	4	unidentified ferrous	
B	3	S 100	2				historic	metal	3	unidentified nails	
B	3	S 100	2				historic	structural	2	brick frags.	
B	3	S 100	3	45-100->	10YR4/3	[see remarks]	historic	glass	2	light aqua container frags.	feature fill; soil sequence is gra compact soil, orange compact soil, very large rock, very clean loam coal observed
B	3	S 100					historic	metal	2	unidentified ferrous	
B	4	S 150	1	0-17	10YR4/3	silty loam					
	4	S 150	2				historic	flora	1	wood frag.	
B	4	S 150	2	17-45	10YR4/3	silty loam	historic	glass	1	light aqua container frag.	mottled w/10YR5/8
	4	S 150	2				historic	metal	1	spike	
B	4	S 150	3	45-99	-	-	historic	ceramic	3	ironstone rim & body sherds (mend)	historical feature or fill episode; see STP form for details
B	4	S 150	3				historic	ceramic	1	kaolin pipestem sherd	
B	4	S 150	3				historic	faunal	3	bone frags.	
B	4	S 150	3				historic	faunal	1	mussel shell	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	4	S 150	3				historic	glass	4	light aqua flat frags.	
B	4	S 150	3				historic	glass	2	white buttons	
B	4	S 150	3				historic	metal	8	cut nails	
B	4	S 150	3				historic	metal	1	lead cylinder	
B	4	S 150	3				historic	metal	10	unidentified ferrous	
B	4	S 150	3				historic	metal	27	unidentified nails	
B	4	S 150	3				historic	misc.	1	leather frag.	
B	4	S 150	3				historic	misc.	9	slag	
B	4	S 150	4	99->	10YR4/6	silty loam	historic	faunal	3	bone frags.	interface between levels 4 & 5 not determinable; charcoal sample collected.
	4	S 150	4				historic	metal	2	unidentified nails	
B	4	S 150	5	->143	10YR4/2	silty loam					mottled w/10YR5/4
B	5	S 200	1	0-19	10YR3/2	loam					
B	5	S 200	2	19-39	10YR3/2	silty loam	historic	ceramic	1	kaolin pipe-bowl sherd	fill or disturbed
B	5	S 200	2				historic	glass	1	aqua container frag.	
B	5	S 200	2				historic	glass	1	dark green container frag.	
B	5	S 200	2				historic	glass	3	light aqua frags.	
B	5	S 200	2				historic	metal	1	brass military-type button	
B	5	S 200	2				historic	metal	1	cut nail	
B	5	S 200	2				historic	metal	2	unidentified nails	
B	5	S 200	3	39-45	2.5Y4/4	sandy silt loam	historic	ceramic	1	whiteware sherd	historic feature continuous with that in STP #4
B	5	S 200	3				historic	faunal	1	bone frag.	
B	5	S 200	3				historic	glass	1	dark green container base frag	
B	5	S 200	3				historic	glass	1	dark green container frag.	
B	5	S 200	3				historic	metal	1	unidentified ferrous	
B	5	S 200	3				historic	metal	1	unidentified nail	
B	5	S 200	4	45-54	10YR5/4	sand					
B	5	S 200	5				historic	glass	4	dark green container base frags.	
B	5	S 200	5	54-69	2.5Y4/4	sandy silt loam w/cobbles	historic	glass	1	light aqua flat frag.	possible roadbed
B	5	S 200	5				historic	structural	1	brick frag.	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	5	S 200	6	69-79	10YR5/8	silty loam					fill or disturbed; mottled w/2.5Y4/4
B	5	S 200	7	79-116	10YR4/3	loam					
B	5	S 200	8	116-129	10YR5/8	silty loam					
B	6	S 250	1	0-22	10YR4/3	loam	recent	metal	1	1948 25 cent coin (not retained)	
B	6	S 250	2				historic	ceramic	1	kaolin pipe bowl/stem joint sherd	
B	6	S 250	2				historic	ceramic	1	porcelain sherd	
B	6	S 250	2	22-96	10YR4/3	silty loam	historic	ceramic	2	whiteware sherds	fill; mottled w/10YR5/8
B	6	S 250	2				historic	glass	1	brown container frag.	
B	6	S 250	2				historic	glass	1	clear container base & body frag.	
B	6	S 250	2				historic	glass	1	light aqua container frag.	
B	6	S 250	2				historic	glass	3	light aqua flat frag.	
B	6	S 250	2				historic	metal	2	cut nails	
B	6	S 250	2				historic	metal	1	flattened ferrous pipe segment	
B	6	S 250	2				historic	metal	2	unidentified ferrous	
B	6	S 250	2				recent	misc.	1	gray plastic frag.	
B	6	S 250	2				historic	structural	3	brick frags.	
B	7	S 300	1				historic	ceramic	1	ironstone sherd	
B	7	S 300	1	0-30	10YR4/3	silty loam	historic	ceramic	1	whiteware sherd	fill or disturbed
B	7	S 300	1				historic	faunal	1	bivalve shell frag.	
B	7	S 300	1				historic	glass	2	green container frags	
B	7	S 300	1				historic	glass	4	light aqua frags.	
B	7	S 300	1				historic	metal	1	unidentified ferrous	
B	7	S 300	1				historic	metal	2	unidentified nails	
B	7	S 300	2	30-40	10YR4/2	silty loam					fill or disturbed
B	7	S 300	3	40-59	10YR5/6	silty loam					disturbed
B	7	S 300	4	59-77	10YR4/3	silty loam	historic	glass	1	aqua container frag.	
B	7	S 300	4				historic	glass	1	aqua container frag. w/molded "..NS ONE"	
B	7	S 300	4				historic	glass	1	aqua container frag. w/molded "D.. W.."	
B	7	S 300	4				historic	glass	1	clear container base & body frag.	
B	7	S 300	4				historic	glass	1	lavender container frag	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	7	S 300	4				historic	metal	2	spikes	
B	7	S 300	4				historic	metal	1	unidentified ferrous	
B	7	S 300	4				historic	metal	1	unidentified nails	
B	7	S 300	4				historic	structural	1	possiblecelling tile frag	
B	7	S 300	5	77-99	10YR4/6	silty loam					
B	8	S 0 E 050	1				recent	ceramic	7	drainpipe sherds	
B	8	S 0 E 050	1				historic	ceramic	1	kaolin pipe bowl sherd	
B	8	S 0 E 050	1	0-35	10YR3/3	sandy loam w/10% gravels & 5% large rocks	historic	ceramic	1	whiteware rim sherd w/green transfer print	fill; mottled w/10YR4/4; brick, coal observed
B	8	S 0 E 050	1				historic	ceramic	1	whiteware sherd (burned)	
B	8	S 0 E 050	1				historic	faunal	1	bone frag.	
B	8	S 0 E 050	1				historic	faunal	1	mussel shell	
B	8	S 0 E 050	1				historic	glass	1	brown container frag.	
B	8	S 0 E 050	1				historic	glass	10	light aqua container frags.	
B	8	S 0 E 050	1				historic	glass	14	light aqua flat frags.	
B	8	S 0 E 050	1				historic	metal	4	cut nails	
B	8	S 0 E 050	1				historic	metal	2	unidentified ferrous	
B	8	S 0 E 050	1				historic	metal	15	*unidentified* nails	
B	8	S 0 E 050	1				recent	structural	3	concrete frags. (specimens)	
B	8	S 0 E 050	2	35-65	-	silty loam w/10% gravels					
B	9	S 0 E 100	1	0-16	10YR3/3	silty loam w/<5% gravels	historic	glass	1	light aqua flat frag.	
B	9	S 0 E 100	2	16-33	10YR3/1	loam					
B	9	S 0 E 100	3				historic	faunal	1	bivalve shell frag.	
B	9	S 0 E 100	3				historic	glass	1	clear container frag. w/molded "..TA.. DRU.. NEW"	
B	9	S 0 E 100	3				historic	glass	1	green container frag.	
B	9	S 0 E 100	3	33-74	10YR3/3	sandy loam w/10% gravels	historic	glass	5	light aqua flat frags.	mottled w/10YR4/4
B	9	S 0 E 100	3				historic	glass	1	milkglass	
B	9	S 0 E 100	3				historic	metal	1	cylinder, possibly lead	
B	9	S 0 E 100	3				historic	metal	3	unidentified ferrous	
B	9	S 0 E 100	3				historic	metal	2	unidentified nails	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	9	S 0 E 100	3				historic	structural	1	brick frag.	
B	10	S 0 E 150	1	0-19	10YR3/3	silty loam w/<5% gravels					fill; mottled w/10YR4/4
B	10	S 0 E 150	2	19-47	10YR3/3	silty loam w/5% cobbles	historic	ceramic	1	porcelain (burned)	buried 'A'
B	10	S 0 E 150	3	47-67	10YR4/4	sandy clay loam w/5% cobbles					
B	11	S 0 E 200	1	0-20	10YR3/3	silty loam w/5% gravels					
B	11	S 0 E 200	2	20-45	10YR4/4	sandy silt loam					
B	12	S 050 E 050	1	0-53	10YR3/3	silty loam w/5% gravels	historic	ceramic	1	kaolin pipe bowl sherd	concentration of large rocks @ 32-42cm, mainly on N. side of STP; coal & brick observed
B	12	S 050 E 050	1				historic	glass	1	clear container frag.	
B	12	S 050 E 050	1				historic	glass	2	light aqua container frags.	
B	12	S 050 E 050	1				historic	glass	1	light aqua flat frag.	
B	12	S 050 E 050	1				historic	metal	2	unidentified nails	
B	12	S 050 E 050	1				historic	misc.	3	unidentified amorphous blue substance	
B	12	S 050 E 050	2	53-73	10YR4/4	silty loam w/20% gravels & 5% cobbles					
B	13	S 050 E 100	1				historic	ceramic	3	buff-bodied stoneware sherds w/interior Albany slip	
B	13	S 050 E 100	1				historic	ceramic	1	ironstone sherd w/partial maker's mark	
B	13	S 050 E 100	1				historic	ceramic	23	ironstone sherds	
B	13	S 050 E 100	1				historic	ceramic	1	kaolin pipestem sherd	
B	13	S 050 E 100	1	0-56	10YR3/3	sandy loam w/20% gravels	historic	ceramic	1	possible ironstone apothecary jar base sherd	
B	13	S 050 E 100	1				historic	ceramic	1	possible ironstone apothecary jar lid sherd	
B	13	S 050 E 100	1				historic	ceramic	2	unglazed redware sherds (mend)	
	13	S 050 E 100	1				historic	ceramic	1	whiteware sherd	
B	13	S 050 E 100	1				historic	faunal	1	bivalve shell frag.	
B	13	S 050 E 100	1				historic	glass	9	aqua container frags.	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	13	S 050 E 100	1				historic	glass	7	aqua container frags., melted or partially melted	
B	13	S 050 E 100	1				historic	glass	1	aqua finish frag.	
B	13	S 050 E 100	1				historic	glass	5	brown container frags.	
B	13	S 050 E 100	1				historic	glass	2	brown pharmaceutical finish & neck frags. (mend)	
B	13	S 050 E 100	1				historic	glass	6	clear container frags.	
B	13	S 050 E 100	1				historic	glass	1	clear pressed container frag.	
B	13	S 050 E 100	1				historic	glass	1	green container frag.	
B	13	S 050 E 100	1				historic	glass	7	light aqua flat frags.	
B	13	S 050 E 100	1				historic	metal	1	cut nail	
B	13	S 050 E 100	1				historic	metal	21	unidentified ferrous	
B	13	S 050 E 100	1				historic	metal	8	unidentified nails	
	13	S 050 E 100	1				historic	structural	1	brick frag.	
B	13	S 050 E 100	2	56-76	10YR4/4	sandy loam w/5% gravels & cobbles					
B	14	S 050 E 150	1	0-30	10YR3/3	silty loam w/30% gravels	recent	glass	1	brown container frag.	fill; mottled w/10YR4/4;coal & concrete observed
B	14	S 050 E 150	1				recent	metal	1	unidentified ferrous (reinforcement for concrete ?)	
B	14	S 050 E 150	2	30-50	10YR4/4	sandy clay loam w/5% cobbles					
B	15	S 050 E 200	1	0-33	10YR3/3	silty loam w/5% gravels	historic	metal	4	unidentified nails	
B	15	S 050 E 200	2	33-45	10YR4/4	sandy silt loam					excavation halted because of large root
B	16	S 100 E 050	1	0-90	-	sandy/silty loam	historic	ceramic	1	kaolin pipe bowl sherd w/molded decoration	coal observed
B	16	S 100 E 050	1				historic	glass	1	clear container frag.	
B	16	S 100 E 050	1				historic	glass	12	light aqua flat frags.	
B	16	S 100 E 050	1				historic	metal	1	unidentified ferrous	
B	16	S 100 E 050	1				historic	metal	2	unidentified nails	
B	16	S 100 E 050	1				historic	misc.	1	slag	
B	17	S 100 E 100	1	0-12	-	sod					mortar & concrete observed
B	17	S 100 E 100	2				historic	ceramic	1	drainpipe sherd	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	17	S 100 E 100	2	12-46	-	mixed	historic	ceramic	1	whiteware sherd w/light blue glaze	
B	17	S 100 E 100	2				historic	glass	1	clear container frag.	
B	17	S 100 E 100	2				historic	glass	1	green container frag.	
B	17	S 100 E 100	2				historic	glass	1	light aqua flat frag.	
B	17	S 100 E 100	2				historic	metal	1	aluminum military "dog tag"	
B	17	S 100 E 100	2				historic	structural	1	brick frag.	
B	17	S 100 E 100	2				historic	structural	1	concrete frag. (specimen)	
B	17	S 100 E 100	2				historic	structural	1	mortar (specimen)	
B	17	S 100 E 100	3	46-77	7.5YR4/3	loam					coal & slag observed
B	17	S 100 E 100	4	77-90	10YR6/4	sandy silt loam					
B	18	S 100 E 150	-	-	-	-					disturbed; pavement under rootmat
B	19	S 150 E 050	1				historic	ceramic	1	gray salt-glazed stoneware w/interior Albany slip	
B	19	S 150 E 050	1				historic	ceramic	1	unglazed redware sherd	
B	19	S 150 E 050	1	0-80	10YR3/3	very compact sandy loam w/10% gravels & 5% cobbles	historic	ceramic	2	whiteware sherds	
B	19	S 150 E 050	1				historic	glass	1	lavender frag.	
B	19	S 150 E 050	1				historic	glass	2	light aqua container frags	
B	19	S 150 E 050	1				historic	glass	6	light aqua flat frags.	
B	19	S 150 E 050	1				historic	metal	8	unidentified nails	
B	21	S 150 E 150	1	0-12	10YR3/3	loam					B' horizon; 'A' horizon removed or depleted
B	21	S 150 E 150	2	12-52	7.5YR5/6	-					disturbed
B	22	S 150 E 200	-	-	-	-					fill
B	23	S 200 E 050	1	-	-	-					
B	23	S 200 E 050	2	-	-	-	historic	ceramic	1	whiteware	feature fill
B	23	S 200 E 050	2				historic	glass	1	brown container frag.	
B	23	S 200 E 050	2				historic	glass	1	clear container frag.	
B	23	S 200 E 050	2				historic	glass	1	light aqua flat frag.	
B	23	S 200 E 050	2				historic	glass	1	two-color rim frag.; white on one surface, blue-green on the other	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	23	S 200 E 050	2				historic	metal	9	unidentified nails	
B	23	S 200 E 050	2				historic	misc.	1	slag	
B	25	S 250 E 050	1	0-38	10YR3/3	loam w/5% gravels	historic	ceramic	1	whiteware rim sherd	
B	25	S 250 E 050	1				historic	glass	1	brown container frag.	
B	25	S 250 E 050	1				historic	glass	1	clear container frag.	
B	25	S 250 E 050	1				historic	glass	1	clear flat frag.	
B	25	S 250 E 050	1				historic	glass	1	light aqua flat frag.	
B	25	S 250 E 050	2	38-64	10YR4/4	sandy loam w/5% pebbles					
B	25	S 300 E 050	1				historic	ceramic	2	drainpipe sherds	
B	25	S 300 E 050	1				historic	ceramic	1	fine redware rim sherd (pipe bowl ?)	
B	25	S 300 E 050	1	0-83	10YR4/3	silty loam	historic	ceramic	1	whiteware sherd	mottled at base w/10YR5/8
B	25	S 300 E 050	1				historic	faunal	1	bivalve shell frag.	
B	25	S 300 E 050	1				historic	glass	3	amber container frags.	
B	25	S 300 E 050	1				historic	glass	1	brown container frag.	
B	25	S 300 E 050	1				historic	glass	3	clear container base frag's. (mend) w/molded "LIQUOR BOTTLE 123 [symbol] 74"	
B	25	S 300 E 050	1				historic	glass	5	clear container frag.	
B	25	S 300 E 050	1				historic	glass	1	lavender container frag.	
B	25	S 300 E 050	1				historic	glass	2	light aqua flat frags.	
B	25	S 300 E 050	1				historic	glass	1	milkglass frag.	
B	25	S 300 E 050	1				historic	metal	1	unidentified ferrous	
B	25	S 300 E 050	1				historic	metal	3	unidentified nails	
B	25	S 300 E 050	1				historic	metal	2	wire nails	
B	25	S 300 E 050	1				historic	structural	2	brick frags.	
B	25	S 300 E 050	1				historic	structural	1	mortar	
B	25	S 300 E 050	2	83-106	10YR4/3	silty loam	historic	ceramic	1	whiteware sherd	
	25	S 300 E 050	2				historic	faunal	3	bivalve shell frags.	
	25	S 300 E 050	2				historic	faunal	1	ivory frag.	
	25	S 300 E 050	2				historic	glass	1	blue-green container frag. w/molded "T.."	
	25	S 300 E 050	2				historic	glass	1	light aqua container frag.	
	25	S 300 E 050	2				historic	glass	2	light aqua flat frags.	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
	25	S 300 E 050	2				historic	metal	4	unidentified nails	
	25	S 300 E 050	2				historic	structural	1	mortar	
B	25	S 300 E 050	3	106-118	10YR5/6	silty loam					
B	26	S 050 W 050	1				historic	glass	1	clear container shoulder & neck frag.	
B	26	S 050 W 050	1				historic	glass	1	green container frag.	
B	26	S 050 W 050	1	0-37	10YR3/3	sandy loam w/5% gravels	historic	glass	1	light aqua flat frag.	
B	26	S 050 W 050	1				historic	metal	1	cut nail	
B	26	S 050 W 050	1				historic	structural	1	brick frag.	
B	26	S 050 W 050	2	37-60	10YR4/4	sandy loam w20% gravels & 5% cobbles					
B	27	S 050 W 100	1	0-45	10YR3/3	sandy loam w/10% gravels					
B	27	S 050 W 100	2	45-65	10YR4/4	silty loam w/20-30% gravels					
B	28	S 050 W 150	1	0-25	10YR3/3	sandy loam					coal observed
B	28	S 050 W 150	2	25-60	10YR4/4	clayey loam					
B	29	S 100 W 050	1	0-36	10YR3/3	sandy loam w/15-25% gravels	historic	ceramic	1	drainpipe sherd	
B	29	S 100 W 050	1				historic	glass	1	clear container frag.	
B	29	S 100 W 050	1				prehistoric	lithic	1	chert flake	
B	29	S 100 W 050	1				prehistoric	lithic	1	quartzite flake	
B	29	S 100 W 050	1				historic	metal	1	cut nail	
B	29	S 100 W 050	1				historic	metal	1	unidentified nails	
B	29	S 100 W 050	2	36-66	10YR4/4	clayey loam w/5% pebbles & 2% cobbles					
B	30	S 100 W 100	1	0-32	10YR3/3	sandy loam w/15-25% gravels	historic	ceramic	1	porcelain sherd	coal observed
B	30	S 100 W 100	1				historic	glass	2	brown container frag.	
B	30	S 100 W 100	1				historic	glass	1	clear container frag.	
B	30	S 100 W 100	1				historic	glass	1	dark green container base & body frag.	
B	30	S 100 W 100	1				historic	glass	2	dark green container frags.	
B	30	S 100 W 100	1				historic	glass	3	green container frag.	
B	30	S 100 W 100	1				historic	glass	3	light aqua container frags.	
B	30	S 100 W 100	1				historic	glass	16	light aqua flat frags.	
B	30	S 100 W 100	1				prehistoric	lithic	1	quartzite flake	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	30	S 100 W 100	1				historic	metal	5	cut nails	
B	30	S 100 W 100	1				historic	metal	1	unidentified ferrous	
B	30	S 100 W 100	1				historic	metal	2	unidentified nails	
B	30	S 100 W 100	1				historic	metal	1	wire nail	
B	30	S 100 W 100	1				historic	structural	26	brick frags.	
B	30	S 100 W 100	2	32-52	10YR4/4	clayey loam w/5% pebbles & 2% cobbles					
B	31	S 100 W 150	1	0-50	10YR3/3	sandy loam w/20% gravels	historic	ceramic	1	ironstone sherd	coal observed
B	31	S 100 W 150	1				historic	faunal	1	bivalve shell frags.	
B	31	S 100 W 150	1				historic	flora	2	wood frags.	
B	31	S 100 W 150	1				historic	glass	1	clear container frag.	
B	31	S 100 W 150	1				historic	glass	1	clear container shoulder (partially melted)	
B	31	S 100 W 150	1				historic	glass	1	dark olive-green container frag.	
B	31	S 100 W 150	1				historic	glass	11	light aqua flat frag.	
B	31	S 100 W 150	1				historic	metal	7	cut nails	
B	31	S 100 W 150	1				historic	metal	1	unidentified ferrous	
B	31	S 100 W 150	1				historic	metal	3	unidentified nails	
B	31	S 100 W 150	1				historic	structural	3	brick frags.	
B	31	S 100 W 150	2	50-70	10YR3/3	sandy loam w/80-90% cobbles	historic	structural	1	brick frag.	remains of 1875 building foundation
B	31	S 100 W 150	2				historic	structural	1	cut granite slab (not collected)	
B	32	S 150 W 050	1	0-44	10YR3/3	sandy loam w/5% gravels	historic	ceramic	1	ironstone sherd	mottled w/10YR4/4
B	32	S 150 W 050	1				historic	ceramic	2	redware w/clear lead glaze	
B	32	S 150 W 050	1				historic	faunal	2	bivalve shell frags.	
B	32	S 150 W 050	1				historic	glass	1	clear container frag.	
B	32	S 150 W 050	1				historic	glass	1	light aqua container frag.	
B	32	S 150 W 050	1				historic	glass	4	light aqua flat frags.	
B	32	S 150 W 050	1				historic	metal	8	cut nails	
B	32	S 150 W 050	1				historic	metal	10	unidentified nails	
B	32	S 150 W 050	1				historic	structural	5	brick frags.	
B	32	S 150 W 050	2	44-50	-	-					ash & coal lens
B	32	S 150 W 050	3	50-60	10YR4/4	silty loam w/40% cobbles	historic	ceramic	58	ironstone sherds	mottled w/10YR4/4
B	32	S 150 W 050	3				historic	faunal	1	bivalve shell	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	32	S 150 W 050	3				historic	metal	2	cut nails	
B	32	S 150 W 050	3				historic	metal	3	unidentified ferrous	
B	32	S 150 W 050	3				historic	metal	2	unidentified nails	
B	32	S 150 W 050	4	60-103	10YR4/4	silty loam w/5% gravels	historic	glass	1	light aqua flat frag.	mottled w/10YR3/3
B	32	S 150 W 050	4								
B	33	S 150 W 100	1	0-22	10YR3/3	sandy loam w/<5% gravels	historic	ceramic	1	unglazed fine redware sherd	fill
B	33	S 150 W 100	1				historic	faunal	1	bivalve shell frag.	
B	33	S 150 W 100	1				historic	glass	1	clear container frag.	
B	33	S 150 W 100	1				historic	glass	5	light aqua flat frags.	
B	33	S 150 W 100	1				historic	metal	2	cut nails	
B	33	S 150 W 100	1				historic	metal	2	unidentified nails	
B	33	S 150 W 100	1				historic	structural	2	brick frags.	
B	33	S 150 W 100	2	22-48	10YR3/3	sandy loam w/25% gravels & 2% cobbles	historic	ceramic	1	ironstone sherd	fill; mottled w/10YR4/4
B	33	S 150 W 100	2				historic	ceramic	1	kaolin pipe bowl sherd	
B	33	S 150 W 100	2				historic	glass	1	amber container sherd	
B	33	S 150 W 100	2				historic	glass	1	dark green container sherd	
B	33	S 150 W 100	2				historic	glass	3	light aqua flat frags.	
B	33	S 150 W 100	2				prehistoric	lithic	1	quartzite debitage	
B	33	S 150 W 100	2				prehistoric	lithic	1	quartzite tool	
B	33	S 150 W 100	2				recent	metal	2	brass military-type brass cartridge case	
B	33	S 150 W 100	2				historic	metal	1	unidentified nail	
B	33	S 150 W 100	2								
B	33	S 150 W 100	3	48-75	10YR3/3	compact clayey loam w/20% gravels & cobbles	historic	glass	1	light aqua flat frag.	fill; mottled w/10YR4/4; brick & coal observed
B	33	S 150 W 100	3				prehistoric	lithic	1	chert flake	
B	33	S 150 W 100	3				prehistoric	lithic	1	possible quartzite flake	
B	33	S 150 W 100	3				historic	structural	2	brick frags.	
B	33	S 150 W 100	4	75-143	10YR4/4	clayey loam w/15% gravels					fill; coal & brick observed
B	33	S 150 W 100	5				historic	glass	1	amber container frag.	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
B	33	S 150 W 100	5	143-149	10YR2/1	silty sand	historic	glass	3	light aqua flat frags.	fill; coal & burned wood observed; structural (?) stone @ 142cm
B	33	S 150 W 100	5				historic	metal	5	cut nails	
B	33	S 150 W 100	5				historic	metal	1	unidentified nail	
B	33	S 150 W 100	5				historic	structural	5	brick frags.	
B	33	S 150 W 100	5				historic	structural	2	mortar	
B	33	S 150 W 100	6	149->	10YR4/6	silty sand					
B	34	S 150 W 150	1	0-15	10YR3/3	sandy loam	historic	glass	1	light aqua frag.	coal observed
B	34	S 150 W 150	1				historic	metal	1	cut nail	
B	34	S 150 W 150	1				historic	metal	1	unidentified nail	
B	34	S 150 W 150	2	15-22	10YR3/3	sandy loam w/25% quartzite gravels	historic	ceramic	1	kaolin pipe-bowl sherd	mottled w/10YR5/6
B	34	S 150 W 150	2				historic	structural	2	brick frags.	
B	34	S 150 W 150	3	22-39	10YR5/6	silty loam w/5% quartzite gravels					mottled w/10YR3/3
B	34	S 150 W 150	4	39-56	10YR4/4	sandy loam	historic	structural	5	brick frags.	brick observed
B	34	S 150 W 150	5	56-80	10YR4/6	sandy clay loam					mottled w/10YR3/3
B	35	S 200 W 050	1	0-38	10YR3/3	sandy loam	historic	ceramic	1	whiteware sherd	coal observed
B	35	S 200 W 050	1				historic	glass	1	brown container frag.	
B	35	S 200 W 050	1				historic	glass	1	white button	
B	35	S 200 W 050	1				historic	metal	2	unidentified ferrous	
B	35	S 200 W 050	2	38-90	10YR5/6	sandy loam					
B	36	S 200 E 100	1	0-13	10YR3/3	sandy loam	historic	ceramic	1	unglazed redware	fill; coal & slag observed
B	36	S 200 E 100	1				historic	glass	1	aqua container frag.	
B	36	S 200 E 100	1				historic	glass	1	light aqua flat frag.	
B	36	S 200 E 100	1				historic	metal	1	cut nail	
B	36	S 200 E 100	1				historic	metal	1	unidentified nail	
B	36	S 200 E 100	2	13-26	10YR3/3	sandy loam w/10-20% gravels	historic	ceramic	2	whiteware sherds	fill; coal observed
B	36	S 200 E 100	2				historic	ceramic	1	yellow ware sherd	
B	36	S 200 E 100	2				historic	glass	1	aqua container frag.	
B	36	S 200 E 100	2				historic	glass	1	clear container frag.	
B	36	S 200 E 100	2				historic	glass	3	dark green container frags.	
B	36	S 200 E 100	2				historic	glass	1	lavender frag. (partially melted)	
B	36	S 200 E 100	2				historic	glass	1	light aqua container frag.	
B	36	S 200 E 100	2				historic	glass	2	light aqua flat frag.	
B	36	S 200 E 100	2				historic	metal	7	unidentified nails	

FORT TOTTEN
SECTION B

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
	36	S 200 E 100	2				historic	structural	1	brick frag.	
B	36	S 200 E 100	3	26-48	10YR3/3	sandy loam	historic	glass	1	green container frag.	buried 'A'
B	36	S 200 E 100	4	48-68	10YR4/4	clayey loam					
B	37	S 250 W 050	1				historic	glass	2	amber container frags.	
B	37	S 250 W 050	1				historic	glass	2	aqua container frags.	
B	37	S 250 W 050	1	0-29	10YR3/3	sandy loam w/10% gravel & 5% cobbles	historic	glass	2	clear container frags.	
B	37	S 250 W 050	1				historic	metal	3	cut nails	
B	37	S 250 W 050	1				historic	structural	1	brick frag.	
B	37	S 250 W 050	2	29-56	10YR4/4	silty loam w/5% cobbles					mottled w/10YR3/3
B	37	S 250 W 050	3	56-88	10YR3/3	sandy loam w/20% gravels					
B	37	S 250 W 050	4	88-106	10YR4/4	sandy loam w/20% gravels					
B	38	S 250 W 100	1				historic	glass	1	amber container frag.	
B	38	S 250 W 100	1				historic	glass	2	aqua container frags	
B	38	S 250 W 100	1	0-50	10YR3/3	sandy loam w/10% gravels	historic	glass	1	light aqua flat frag.	fill; mottled w/10YR5/6
B	38	S 250 W 100	1				historic	metal	2	cut nails	
B	38	S 250 W 100	1				historic	structural	3	brick frags.	
B	38	S 250 W 100	2	50-80	10YR3/3	sandy loam	historic	faunal	11	bone frags.	buried 'A'
B	38	S 250 W 100	3	80-100	10YR5/6	clayey loam w/10% cobbles					
B	39	S 350 W 050	1	0-51	10YR3/3	sandy loam w/10% gravels	historic	ceramic	1	whiteware rim sherd	fill; mottled w/10YR5/6; coal observed
B	39	S 350 W 050	1				historic	faunal	1	bivalve shell frag.	
B	39	S 350 W 050	1				historic	glass	1	clear container frag.	
B	39	S 350 W 050	1				historic	glass	1	clear lamp-glass frag.	
B	39	S 350 W 050	1				historic	glass	3	light aqua frags.	
B	39	S 350 W 050	1				historic	metal	1	cut nail	
B	39	S 350 W 050	1				historic	metal	2	unidentified nails	
B	39	S 350 W 050	1				recent	misc.	1	white plastic frag.	
B	39	S 350 W 050	1				historic	structural	2	brick frags.	
B	39	S 350 W 050	2	51-72	10YR3/3	sandy loam					buried 'A'
B	39	S 350 W 050	3	72-92	10YR5/6	clayey loam					

FORT TOTTEN
SECTION C

SECTION	STP NUMBER	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
C	1	1	0-31	10YR3/3	sandy loam	historic	ceramic	1	gray salt-glazed stoneware sherd	
C	1	1				historic	ceramic	5	coarse porcelain sherds	
C	1	1				historic	glass	1	aqua container frag.	
C	1	1				historic	glass	3	clear container frags.	
C	1	1				historic	glass	1	clear cut container frag.	
C	1	1				historic	glass	3	light aqua flat frag.	
C	1	1				historic	metal	1	unidentified nail	
C	1	1				historic	metal	1	washer	
C	1	1				historic	structural	3	brick frags.	
C	1	1				historic	structural	1	ceramic tile	
	1	2	0-34	-	-	*historic*	*structural*	1	brick frag. (1 specimen retained)	excavation halted because of impenetrable brick & mortar
C	2	1	0-30	-	sandy loam	historic	ceramic	1	whiteware sherd (discarded)	fill; concrete observed
C	2	1				historic	metal	7	cut nails (discarded)	
C	2	1				historic	metal	1	rod (discarded)	
C	2	1				historic	metal	1	wire nail	
C	2	1				historic	structural	1	brick frag. (discarded)	
C	2	2	30-39	-	gravel					fill
C	2	3	39-51	-	sand w/10% pebbles					fill
C	2	4	51-125	-	sand w/10% pebbles					fill
C	3	1	0-19	10YR4/2	silty loam	historic	ceramic	1	whiteware sherd (discarded)	
C	3	1				historic	ceramic	1	unidentified white stoneware w/brown glaze	
C	3	1				*recent*	misc.	1	orange plastic (discarded)	
C	3	2	19-74	7.5YR4/6	silt					
C	4	1	0-11	10YR3/3	sandy loam					
C	4	2	11-16	-	sand w/90% gravels					roadbed (?)
C	4	3	16-34	10YR3/3	silty loam					
C	4	4	34-54	10YR4/6	clayey loam					
C	5	1	0-25	10YR3/3	silty loam					
C	5	2	25-45	10YR4/6	silty loam w/5% pebbles					

FORT TOTTEN
SECTION C

SECTION	STP NUMBER	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
C	6	1	0-20	10YR3/3	loam					
C	6	2	20-31	10YR4/2	gritty silty loam w/small rocks	historic	ceramic	1	whiteware sherd	roadbed (?)
C	6	2				historic	glass	1	light aqua flat frag.	
C	6	3	31-47	7.5YR3/2	silty loam					buried 'A'
C	6	4	47-63	10YR5/4	silt					
C	7	1	0-29	10YR4/2	silty loam	historic	glass	1	clear container frag.	
C	7	2	29-50	7.5YR5/6	sandy silt					
C	8	1	0-26	10YR3/3	silty loam					
C	8	2	26-46	7.5YR4/6	clayey silt loam					
C	9	1	0-19	10YR4/3	silty loam	historic	metal	1	unidentified nail	
C	9	1				historic	structural	1	brick frag.	
C	9	2	19-26	10YR4/6	sandy silt loam					mottled w/10YR4/3
C	9	3	26-64	10YR4/4	silty loam					
C	9	4	64-76	10YR5/8	fine sandy silt					
C	10	1	0-54	10YR3/3	silty loam	historic	metal	2	wire nails (discarded)	fill; mottled w/10YR4/6
C	10	1				historic	structural	5	brick frags. (discarded)	
C	10	2	54-84	10YR3/3	silty loam	historic	ceramic	1	whiteware sherd	buried 'A'
C	10	2				historic	structural	1	brick frag.	
C	10	3	84-94	10YR4/6	clayey loam					
C	11	1	0-23	10YR4/3	silty loam	historic	glass	1	unidentified frag. (discarded)	
C	11	1				historic	metal	1	unidentified ferrous (discarded	
C	11	1				historic	metal	1	unidentified nail (discarded)	
C	11	2	23-32	10YR4/3	silt					
C	11	3	32-45	-	-	historic	ceramic	1	ironstone sherd (discarded)	fill
C	11	4	45-71	10YR4/3	silty loam					
C	11	5	71-81	10YR5/8	clayey loam					
C	12	1	0-24	10YR3/3	silty loam					
C	12	2	24-44	7.5YR4/6	compact silty loam					
C	13	-	-	-						write-off; next to sidewalk & building
C	14	1	0-40	10YR3/3	silty loam	historic	ceramic	1	possible white salt glazed stoneware body sherd	
C	14	1				historic	glass	1	light aqua flat frag. (discarded)	
C	14	1				historic	metal	1	unidentified nail	
C	14	1				historic	metal	1	wire nail	

FORT TOTTEN
SECTION C

SECTION	STP NUMBER	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
C	14	1				historic	structural	1	roofing slate (discarded)	
C	14	2	40-65	10YR4/6	sandy loam					
C	15	1	0-20	10YR4/3	sand	historic	glass	1	light aqua flat frag.	
C	15	1				historic	structural	1	brick frag.	
C	15	1				historic	structural	1	mortar	
C	15	2	20-25	10YR3/3	sandy clay					excavation halted because of concrete slab at 25cm
C	16	1	0-23	10YR4/2	sandy loam					
C	16	2	23-53	7.5YR4/6	compact sandy loam					
C	16	3	53-70	2.5Y6/2	silty sand w/10% pebbles					
C	16	4	70-90	2.5Y6/4	sandy silt					
C	17	-	-	-	-					disturbed; w/metal pipeline at 78cm
C	18	1	0-19	10YR3/3	silty loam	historic	structural	2	brick frags. (discarded)	
C	18	2	19-33	10YR4/6	silty loam					
C	18	3	33-39	10YR3/3	silty loam					
C	18	4	39-49	10YR4/6	clayey loam					
C	19	1	0-37	-	sandy clay loam					fill
C	19	2	37-85	-	sand & sandy silt					fill
C	20	1	0-12	-	loam	historic	ceramic	1	pearlware rim sherd w/blue transfer print	
C	20	1				historic	glass	1	light aqua container frag.	
C	20	1				historic	metal	1	copper alloy sheet	
C	20	1				historic	misc.	3	slag	
C	20	1				historic	structural	2	brick frags.	
C	20	1				historic	structural	1	roofing slate frag.	
C	20	2	12-20	-	silt					fill
C	20	3	20-50	10YR5/6	sandy silt	historic				feature in N. wall, 30cm wide at top & 60cm deep; contained coal, slag, brick, roofing tin, roofing slate, & bivalve shell frag. (all discarded)
C	20	4	50-70	10YR6/3	silty sand					
C	20	5	70-->	10YR6/3	silty sand					mottled w/reddish soil
C	21	1	0-34	10YR3/4	silty loam					
C	21	2	34-54	10YR4/6	clayey loam					
C	22	1	0-23	10YR3/3	sandy loam					mottled w/10YR4/4 sand
C	22	2	23-41	10YR3/3	silty loam w/5% gravels					
C	22	3	41-63	10YR4/6	silty loam					

FORT TOTTEN
SECTION C

SECTION	STP NUMBER	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
C	23	1	0-38	10YR4/2	silty loam					south portion of STP appeared disturbed
C	23	2	39-78	10YR5/6	sandy silt					
C	24	1	0-21	10YR3/3	silty loam	historic	glass	1	clear container frag.	concrete gravels @ 13-17cm
C	24	1				recent	metal	1	brass shell casing	
C	24	2	21-41	10YR4/4	clayey loam					
C	27	1	0-35	10YR3/3	silty loam w/10% gravels					fill; mottled w/10YR4/6; excavation halted because of metal pipeline

FORT TOTTEN
SECTION D

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
D	1	S 050	1				historic	ceramic	1	drainpipe sherd	
D	1	S 050	1	0-28	10YR4/3	sandy loam	historic	ceramic	1	kaolin pipestem sherd	
D	1	S 050	2	28-77	10YR5/4	compact sandy loam w/25% cobbles					
D	2	S 100	1				historic	ceramic	1	pearlware sherd	
D	2	S 100	1	0-28	10YR4/3	sandy loam	historic	ceramic	2	whiteware sherds	mottled w/10YR3/3
D	2	S 100	1				historic	metal	1	unidentified nail	
D	2	S 100	1				historic	structural	1	brick frag.	
D	2	S 100	2	28-50	10YR5/4	sandy loam w/20% pebbled & 5% cobbles					
D	2	S 100	3	50-69	10YR5/4	compact sandy loam w/20% pebbles & <5% cobbles					
D	3	S 150	1	0-20	10YR4/2	sandy loam					
D	3	S 150	2	20-39	10YR4/6	sandy silt	historic	ceramic	1	lead-glazed drainpipe (discarded)	
D	3	S 150	3	39-53	10YR4/4	silty sand					
D	4	S 200	1	0-15	10YR4/2	silty loam					
D	4	S 200	2	15-28	10YR5/3	silty loam					
D	4	S 200	3	28-100	10YR6/4	fine sandy silt					
D	5	S 350	1	0-39	10YR4/3	clayey loam					
D	5	S 350	2	39-41	5Y5/3	sand					
D	5	S 350	3	41-100	5Y6/3	very fine sand					
D	10	S 200 E 050	1	0-21	10YR4/2	silty loam	historic	glass	1	unidentified frag. (discarded)	
D	10	S 200 E 050	2	21-100	2.5Y6/3	sandy silt					mottled w/10YR5/6 silty loam
D	11	S 200 E 100	1	0-19	10YR4/3	clayey loam	historic	structural	1	brick frag. (discarded)	
D	11	S 200 E 100	2	19-39	2.5Y5/4	clayey loam					
D	11	S 200 E 100	3	39-63	5Y5/3	fine sandy silt					banded w/5Y6/3 sand
D	13	S 250 E 050	1	-	10YR4/3	sandy silt loam					
D	13	S 250 E 050	2	-	10YR4/4	silty sand loam					
D	13	S 250 E 050	3	-	10YR5/6	sand	historic	ceramic	1	whiteware rim sherd	mottled w/10YR7/4 & 10YR3/4
D	14	S 250 E 100	1	0-25	10YR4/3	sandy silt loam	historic	ceramic	1	whiteware sherd	
D	14	S 250 E 100	1				historic	glass	1	dark olive-green container frag.	
D	14	S 250 E 100	2	25-50	10YR5/4	silty loam w/5% cobbles					
D	14	S 250 E 100	3	50-70	10YR5/6	compact silt					mottled w/2.5Y6/2
D	15	S 250 E 150	1	0-15	10YR4/3	clayey loam					

FORT TOTTEN
SECTION D

SECTION	STP NUMBER	COORDINATES	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
D	15	S 250 E 150	2	15-25	2.5Y5/4	clayey loam					
D	15	S 250 E 150	3	25-41	7.5YR4/6	compact silty clay					mottled w/10YR6/3; heavy Fe staining
D	16	S 250 E 200	1	0-28	10YR4/3	silty loam	historic	glass	1	aqua container frag.	
D	16	S 250 E 200	1				historic	structural	1	roofing slate	
D	16	S 250 E 200	2	29-50	10YR5/4	sandy loam					excavation halted because of impenetrable rocks
D	17	S 300 E 050	1	0-17	10YR4/3	sandy silt loam	historic	structural	1	brick frag.	
D	17	S 300 E 050	2	17-33	10YR4/6	sandy silt	historic	ceramic	1	unglazed redware	
D	17	S 300 E 050	3	33-65	10YR5/6	silty sand					very compact at base
D	18	S 300 E 100	1	0-19	10YR4/3	silty clay loam					
D	18	S 300 E 100	2	19-38	10YR5/4	sandy loam					excavation halted because of large (cut ?) stone
D	19	S 300 E 150	1	0-20	10YR4/3	silty loam	historic	structural	1	brick frag. (discarded)	
D	19	S 300 E 150	2	20-45	10YR5/4	sandy loam					
D	20	S 300 E 200	1	0-19	10YR4/3	sandy silt loam	historic	ceramic	1	whiteware sherd	
D	20	S 300 E 200	1				historic	glass	1	clear container frag.	
D	20	S 300 E 200	2	19-32	10YR5/4	sandy silt					
D	20	S 300 E 200	3	32-45	10YR5/4	sandy silt w/cobbles					
D	22	S 350 E 100	1	0-26	-	loam					
D	22	S 350 E 100	2	26-43	-	silty loam w/cobbles					
D	23	S 350 E 150	1	0-15	-	loam	historic	metal	1	ferrous bolt	
D	23	S 350 E 150	1				historic	metal	1	ferrous bolt & nut	
D	23	S 350 E 150	1				historic	metal	1	steel spring	
D	23	S 350 E 150	2	15-49	-	silty loam					
D	23	S 350 E 150	3	49->	-	very fine sandy silt					
D	25	S 150 W 100	1	0-15	-	loam	historic	ceramic	1	porcelain foot sherd	
D	25	S 150 W 100	2	15-34	-	sandy loam					
D	25	S 150 W 100	3	34-36	-	compact silty sand					
D	25	S 150 W 100					recent	misc.	1	plastic frag.	
D	26	S 150 W 150	1	0-21	10YR4/3	silty loam	historic	glass	1	melted frag. (discarded)	coal observed
D	26	S 150 W 150	1				historic	glass	1	unidentified frag. (discarded)	
D	26	S 150 W 150	2	21-41	10YR5/6	sandy silt					
D	26	S 150 W 150	3	41-62	10YR4/6	silty sand					
D	27	S 200 W 050	1	0-24	10YR4/3	-					
D	27	S 200 W 050	2	24-57	-	-					abundant cobbles & gravels

FORT TOTTEN
SECTION E

SECTION	STP NUMBER	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
E	1	1	0-42	10YR3/4	sand	historic	metal	1	spike	mottled w/10YR4/6; coal observed
E	1	2	42-66	10YR4/6	sandy loam w/5% cobbles					
E	2	1	0-39	10YR3/3	silty loam w/20% pebbles	historic	faunal	1	bivalve shell frag. (discarded)	
E	2	2	39-63	10YR4/6	silty loam					
E	3	1	0-75	10YR4/3	silty loam	historic	ceramic	1	whiteware sherd	fill; mottled w/10YR5/6
E	3	1				historic	glass	1	Coca-Cola bottle (discarded)	
E	3	1				historic	glass	1	light aqua flat frag. (discarded)	
E	3	1				historic	structural	1	brick frag.	
E	3	2	75-104	10YR5/4	fine sandy silt					
E	4	1	0-49	10YR3/3	silty loam	historic	metal	1	cut nail (discarded)	
E	4	2	49-70	10YR4/6	silty loam					
E	5	1				historic	faunal	1	bone	
E	5	1				historic	glass	1	brown container frag.	
E	5	1	0-51	10YR5/4	compact sandy loam	historic	glass	2	clear flat frags.	fill; mottled w/10YR4/6; coal observed
E	5	1				historic	metal	1	copper alloy object (reinforcing ring ?)	
E	5	1				historic	metal	2	unidentified nails	
E	5	2	51-69	10YR5/4	clayey loam	historic	ceramic	1	whiteware sherd	buried 'A'
E	5	3	69-80	10YR4/6	clayey loam					
E	6	1	0-38	10YR3/3	silty loam					fill; mottled w/10YR4/6
E	6	2	38-62	10YR5/4	sandy loam w/10% cobbles					fill
E	6	3	62-81	10YR4/2	silty loam					buried 'A'
E	6	4	81-95	10YR4/6	silty loam					
E	7	1	0-22	10YR4/3	silty loam	historic	glass	1	light aqua flat frag. (discarded)	
E	7	1				historic	metal	1	wire nail (discarded)	
E	7	2	22-50	10YR7/1	sand					mottled w/10YR6/4
E	7	3	50-60	10YR5/6	silty sand					

FORT TOTTEN
SECTION F

SECTION	STP NUMBER	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
F	1	1	0-21	10YR3/2	compact clayey loam	historic	glass	1	blue finish & neck frag.	
F	1	2	21-22	-	sand w/90% gravels					roadbed; excavation halted because of impenetrable gravel
F	2	1	0-30	10YR3/3	loam	historic	ceramic	1	unglazed redware	charcoal flecking observed
F	2	2	30-50	7.5YR5/6	compact silty loam					
F	4	1	0-23	10YR3/3	sandy silt loam	historic	ceramic	1	whiteware sherd	
F	4	2	23-40	7.5YR4/6	compact silty loam					
F	5	1	0-39	10YR3/3	sandy loam w/10% gravels	historic	ceramic	1	whiteware sherd (discarded)	fill; mottled w/10YR4/6; coal observed
F	5	1				historic	glass	1	amber container frag. (discarded	
F	5	1				historic	glass	3	light aqua flat frags. (discarded)	
F	5	1				historic	structural	1	brick frag. (discarded)	
F	5	2	39-59	10YR3/3	sandy loam	historic	structural	1	brick frag. (discarded)	buried 'A'
F	5	3	59-69	10YR4/6	clayey loam					
F	6	1	0-15	10YR3/2	silty loam	historic	ceramic	1	whiteware sherd	
F	6	1				historic	glass	1	brown container frag.	
F	6	1				historic	glass	1	clear container frag.	
F	6	1				historic	structural	1	brick frag.	
F	6	2	15-30	10YR4/4	sandy silt					
F	6	3	30-50	10YR4/6	sandy silt					
F	7	1	0-35	10YR4/3	silty loam	historic	ceramic	1	whiteware sherd	fill; mottled w/10YR4/6
F	7	1				historic	glass	1	amber container frag.	
F	7	1				historic	structural	1	brick frag.	
F	7	2	35-58	10YR4/3	silty loam					buried 'A'
F	7	3	58-75	7.5YR5/4	silt					
F	8	1	0-9	10YR3/2	loam					
F	8	2				historic	ceramic	1	whiteware foot sherd	
F	8	2	9-51	10YR4/4	silty loam	historic	ceramic	3	whiteware sherds	coal observed
F	8	2				historic	faunal	1	bivalve shell frag.	
F	8	2				historic	glass	1	brown container frag.	
F	8	2				historic	glass	1	clear lamp-glass rim frag.	
F	8	2				historic	glass	2	light aqua flat frag.	
F	8	2				historic	metal	2	unidentified nails	
F	8	2				historic	structural	2	brick frags.	

FORT TOTTEN
SECTION F

SECTION	STP NUMBER	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
F	8	2				historic	structural	1	mortar	
F	8	2				historic	structural	1	roofing slate	
F	8	3	51-74	7.5YR5/6	-					
F	9	1	0-49	10YR4/3	silty loam	recent	glass	-	light aqua frags. (discarded)	
F	9	2	49-68	10YR5/6	sandy silt					
F	10	1	0-37	10YR3/3	silty loam	historic	glass	2	clear container frags.	
F	10	1				historic	metal	1	unidentified ferrous	
F	10	2	37-55	10YR4/6	silty loam					
F	11	1	0-17	10YR3/3	-	historic	glass	1	clear container frag.	fill; asphalt chunks observed
F	11	1				historic	glass	1	clear container frag. w/frosted label	
F	11	1				historic	glass	4	green container frags.	
F	11	1				historic	metal	1	wire nail	
F	11	2	17-57	10YR4/6	-					fill
F	12	1				recent	glass	1	clear container frag. (discarded)	
F	12	1	0-21	10YR4/3	sandy loam	recent	glass	1	green container frag. (discarded)	
F	12	2	21-65	10YR4/6	sandy loam					
F	13	1	0-50	10YR4/3	sandy loam					fill; concrete, brick & coal observed
F	13	2	50-70	10YR4/6	sandy loam					
F	14	1	0-23	10YR4/3	sandy silt loam					fill; coal, asphalt and brick observed
F	14	2	23-44	10YR5/6	sandy silt					
F	15	1	0-70	-	-					disturbed; excavation halted because of wire/cable
F	16	1	0-40	10YR3/2	sandy loam	historic	metal	3	wire nails (discarded)	
F	16	1				historic	structural	1	brick frag. (discarded)	
F	16	2	40-78	10YR4/6	sand					Fe staining
F	17	1	0-78	-	-					disturbed; coal, brick & nails observed; excavation halted because of wire/cable
F	18	1	0-49	10YR4/3	sandy loam	historic	metal	3	unidentified nails	
F	18	2	49-89	10YR4/6	sand					
F	19	1	0-76	10YR5/4	silty sand	historic	metal	1	cut nail	fill (?)
F	19	1				historic	metal	1	spike	
	19	2	76-85	10YR5/6	sand					fill (?)
F	20	1	0-66	10YR5/4	-	historic	metal	1	cut nail (discarded)	fill (?)

FORT TOTTEN
SECTION F

SECTION	STP NUMBER	LEVEL	DEPTH	MUNSELL	SOIL	ARTIFACTS	TYPE	COUNT	DESCRIPTION	REMARKS
F	?	1	0-12	10YR3/2	compact clayey loam	historic	metal	1	wire nail (discarded)	
F	?	1				historic	structural	1	brick frag.	
F	?	2	12-27	-	sand w/90% gravels					roadbed; excavation halted because of impenetrable gravel

APPENDIX E NEW YORK STATE MUSEUM SITE FILE INFORMATION

NEW YORK STATE MUSEUM

3122 Cultural Education Center
Albany, NY 12230
518/474-5813 FAX 518/473-8496

Anthropological Survey

DATE: 01/15/97

To:
HOPE LEININGER
TETRA TECH, INC.
5203 LEESBURG PIKE, SUITE 900
FALLS CHURCH, VA 22041

Proposed Project: FORT TOTTEN MILITARY RESERVATION
7.5' U.S.G.S. Quad: FLUSHING

In response to your request our staff has conducted a search of our data files* for locations and descriptions of prehistoric archaeological sites within the area indicated above. The results of the search are given below.
If specific information requested has not been provided by this letter, it is likely that we are not able to provide it at this time, either because of staff limitations or policy regarding disclosure of archaeological site data.

Questions regarding this reply can be directed to the site file manager, at (518) 474-5813 or the above address. Please refer to the N.Y.S.M. site identification numbers when requesting additional information.

Please resubmit this request if action is taken more than one year after your initial information request.

*[NOTE: Our files normally do not contain historic archeological sites or architectural properties. For information on these types of sites as well as prehistoric sites not listed in the N.Y.S.M. files contact The State Historic Preservation Office; Office of Parks, Recreation & Historic Preservation; Agency Building #1; Empire State Plaza; Albany,NY,12238 at (518) 474-0479.

RESULTS OF THE FILE SEARCH:

Recorded sites ARE NOT located in or within one mile of the project area. If so, see attached list.

Code "ACP" = sites reported by Arthur C. Parker in The Archeology Of New York, 1922, as transcribed from his unpublished maps.

SEARCH CONDUCTED BY: BW (initials) Anthropological Survey, NYS Museum

cc: N.Y.S. OFFICE OF PARKS, RECREATION AND HISTORIC PRESERVATION; HISTORIC PRESERVATION FIELD SERVICES BUREAU

01/15/97 To: HOPE LEININGER, TETRA TECH, INC.

Project: FORT TOTTEN MILITARY RESERVATION Topo. Maps: FLUSHING
BW (initials) Anthropological Survey, NYSM
Recorded sites ARE NOT located in or within one mile of the project area.

New York State Museum Prehistoric Archaeological Site Files
EVALUATION OF ARCHAEOLOGICAL SENSITIVITY FOR PREHISTORIC (NATIVE AMERICAN) SITES
Examination of the data suggests that the location indicated has the following sensitivity rating:
HIGH PROBABILITY OF PRODUCING PREHISTORIC ARCHAEOLOGICAL DATA.

The reasons for this finding are given below:

[ ] A RECORDED SITE(S) IS(ARE) INDICATED IN, ADJACENT TO, OR IN THE VICINITY OF THE LOCATION AND WE HAVE REASON TO BELIEVE IT(THEY) COULD BE IMPACTED BY THE PROPOSED ACTIVITY.

[ ] A RECORDED SITE IS INDICATED IN THE GENERAL VICINITY OR SOME DISTANCE AWAY. DUE TO THE MARGIN OF ERROR IN THE LOCATION DATA IT IS POSSIBLE THE SITE ACTUALLY EXISTS IN OR IMMEDIATELY ADJACENT TO THE LOCATION.

[X] THE TERRAIN IN THE LOCATION IS SIMILAR TO TERRAIN IN THE GENERAL VICINITY WHERE RECORDED ARCHAEOLOGICAL SITES ARE INDICATED.

[X] THE PHYSIOGRAPHIC CHARACTERISTICS OF THE LOCATION SUGGEST A HIGH PROBABILITY OF PREHISTORIC OCCUPATION OR USE.

[ ] THE PHYSIOGRAPHIC CHARACTERISTICS OF THE LOCATION SUGGEST A MEDIUM PROBABILITY OF PREHISTORIC OCCUPATION OR USE.

[ ] THE PHYSIOGRAPHIC CHARACTERISTICS OF THE LOCATION SUGGEST A LOW PROBABILITY OF PREHISTORIC OCCUPATION OR USE.

[ ] EVIDENCE OF CULTURAL OR NATURAL DESTRUCTIVE IMPACTS SUGGESTS A LOSS OF ORIGINAL CULTURAL DEPOSITS IN THIS LOCATION.

[ ] THE PHYSIOGRAPHIC CHARACTERISTICS OF THE LOCATION ARE MIXED, A HIGHER THAN AVERAGE PROBABILITY OF PREHISTORIC OCCUPATION OR USE IS SUGGESTED FOR AREAS IN THE VICINITY OF EITHER PRESENT OR PREEXISTING BODIES OF WATER, WATERWAYS, OR SWAMPS. A HIGHER THAN AVERAGE PROBABILITY IS SUGGESTED FOR ROCK FACES WHICH AFFORD SHELTER OR FOR AREAS SHELTERED BY BLUFFS OR HILLS. AREAS IN THE VICINITY OF CHERT DEPOSITS HAVE A HIGHER THAN AVERAGE PROBABILITY OF USE. DISTINCTIVE HILLS OR LOW RIDGES HAVE AN AVERAGE PROBABILITY OF USE AS A BURYING GROUND. LOW PROBABILITY IS SUGGESTED FOR AREAS OF EROSIONAL STEEP SLOPE.

[X] PROBABILITY RATING IS BASED ON THE ASSUMED PRESENCE OF INTACT ORIGINAL DEPOSITS, POSSIBILITY UNDER FILL, IN THE AREA. IF NEAR WATER OR IF DEEPLY BURIED, MATERIALS MAY OCCUR SUBMERGED BELOW THE WATER TABLE.

[ ] INFORMATION ON OTHER SITES MAY BE AVAILABLE IN A REGIONAL INVENTORY MAINTAINED AT THE FOLLOWING LOCATION(S).

COMMENTS:

cc: N.Y.S. OFFICE OF PARKS, RECREATION AND HISTORIC PRESERVATION; H. P. FIELD SERVICES BUREAU

Tellman 3 of 3

TETRA TECH, INC.
5303 Leesburg Pike, Suite 900
Falls Church, VA 22041
Telephone (703) 931-9301
FAX (703) 931-9222

New York State Museum
Attn: Beth Wellman
Albany, New York

Via Telefax: 518-473-8496

Dear Ms. Wellman:

Tetra Tech is currently conducting a Section 106 compliance Phase I archaeological investigation of two military bases on Long Island. We would like to request a State Museum Site File search as part of our investigation. The project areas are (1) the Bellmore Maintenance Facility in Nassau County and (2) Ft. Totten in Queens. Photocopies of appropriate portions of US quad sheets follow. Tetra Tech understands that any information you provide us is sensitive and that the exact locations of any archaeological sites identified near the project areas are protected. Thank you for your help, if you need any additional information please call me at 703-931-9301 ext 482. Thanks.

Sincerely,

Hope Leininger
Archaeologist

OF97-7