

**Phase I Archeological Survey for
Installation of Scaffolding at Fort Jay,
Governors Island National Monument,
New York County, New York**

GOIS 2013C PEPC 15779 PMIS 195023

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Project Summary

A Phase I archeological survey was conducted at Fort Jay, Governors Island National Monument (GOIS, Park) to investigate where scaffold footings will be installed at the Gate and Guardhouse. This scaffolding is necessary for repairing stonework and sculpture. Project personnel helped delineate the Area of Potential Effect (APE), which is divided into three areas:

- The dry moat (ditch) north of the bridge to the Gate of the fort,
- The dry moat south of the bridge, and
- The area behind the Gate and Guardhouse.

Excavation units were not positioned to match specific proposed footing locations, which may be changed, but were chosen to provide information that could be used to characterize the APE in general. The Scope of Work (SOW) called for 16 shovel test pits (STPs), each of which was to be 0.5 x 0.5 m (1.6 x 1.6 ft) and excavated to a minimum depth of 0.5 m (1.6 ft) below ground surface (bgs), and two 1 x 1-m (3.2 x 3.2-ft) units on the surface behind the Guardhouse, excavated until a hard surface or obstruction was encountered. All soil was to be screened and the four walls and floor of the units examined.

These methods were followed during fieldwork, which was performed from September 9 to 12, 2014 under good weather conditions. Fourteen STPs and the two 1 x 1-m (3.2 x 3.2-ft) units were excavated, as explained below. (A third 1 x 1-m [3.2 x 3.2-ft] unit was considered for the Guardhouse Area after the interim report was submitted, but weather conditions did not permit excavation of this unit.) Maps indicating the location of excavation units, sketches, photographs, and soil profile descriptions (using a Munsell Color Chart) were made or taken in the field. Artifacts were preliminarily described in the field, bagged, and saved for more thorough identification and cataloging using the Interior Collections Management System (ICMS). The artifacts, original field notes, and a copy of this report will be curated at GOIS. Artifacts are discussed in the following text and are presented in Appendix B of this report. Several soil samples were also taken for further inspection; soil data for excavation units are presented in Appendix C.

Dry Moat – North of Bridge Area. In the dry moat north of the bridge seven STPs were excavated. Soils were very dark brown (7.5YR 2.5/2) silty fine sandy loam (0 to 0.30 m bgs) over yellowish-brown (10YR 5/4) silty fine sand to depths of 0.5 m (1.6 ft) bgs. No features were found. Modern trash was in the top stratum, but 21 artifacts, mostly from the 18th and 19th centuries, were below this. A fragment of a clay pipe made in Glasgow, Scotland (by

Duncan McDougall, 1847-c. 1891), other clay pipe fragments, glass, and a green shell-edged pearlware sherd (1800-1830) were among these artifacts. A brick dating from 1870-1929 was found in one unit (STP 5) in a band of mixed soils. Because footings in dry moat areas will not exceed 0.3 m (1 ft) bgs, no cultural material will be adversely affected.

Dry Moat – South of Bridge Area. In the dry moat south of the bridge seven STPs were excavated. The soil was similar to that north of the bridge in color, texture, and depth of strata. Mottling at the horizon boundaries suggests episodic pooling of water. There were no features, and the 19 artifacts found here are generally more recent than those recovered north of the bridge. As with the area of the dry moat north of the bridge, here no cultural material will be adversely affected by erecting the scaffolding.

Guardhouse Area. Behind the Guardhouse (Building 201), on a surface over the sally port, two 1 x 1-m (3.2 x 3.2-ft) units (labeled A and B) were excavated. These were placed here to address archeological questions (the presence or absence of cultural material and evidence of former building segments and building sequences) as well as engineering concerns. Specific locations for investigation were suggested by structural engineers for the project. The level of effort for the two STPs not excavated was allotted to additional work on these units.

Unit A was increased (to 1.4 m [4.6 ft] in length) to compensate for two areas of concrete blocking excavation. Next to a deteriorated retaining wall, Unit A exposed an opening in its western edge. The condition of the wall was reported to the project managers, and work concluded on this unit as a matter of safety.

Unit B was excavated over the sally port, next to the western wall of the Guardhouse, with its northern wall 1.8 m (6 ft) from the central east-west axis of the Guardhouse. This unit contained Feature 1, a concrete structure over another structure that was coated with a black, tar-like substance. From historical records of work done on the sally port, the concrete and black coating apparently date from 1938.

The 11 artifacts from these units were glass fragments, a roofing nail, and a 1942 Newfoundland penny. There was no evidence of an earlier building. Scaffold supports will not adversely affect any subsurface cultural deposits.

No additional archeological treatment is recommended. The dry moat is, however, an archeologically-sensitive area (particularly below 0.25 m [0.8 ft] bgs), and future ground disturbance merits archeological investigation. Engineers will assess footing placement, but no cultural resources will be affected by the proposed activity in the areas that were investigated. Any changes in plans for erecting the scaffold will require additional archeological investigation. Artifacts and field notes will be curated at the Park.

Introduction

This is a report on Phase I archeological fieldwork at Governors Island National Monument (GOIS, Park), a unit of the National Park Service (NPS) in New York Harbor, in advance of the installation of scaffolding to repair stonework and sculpture at Fort Jay. A description of the project can be found in the NPS online systems, Planning, Environment and Public Comment (PEPC), file 15779 and the Project Management Information System [PMIS] file 195023. This project is designated by the Northeast Region Archeology Program as GOIS 2013C. Work was done by Richard D. Holmes, Ph.D., R.P.A., in his capacity as Archeologist for the Hurricane Sandy Recovery Team of the NPS.

Reporting. This report conforms with provisions of the Scope of Work (SOW) prepared by William Griswold, Ph.D., R.P.A. (of the NPS Northeast Regional Archeology Program [NRAP]), and is consistent with New York State Historic Preservation Office (SHPO) *Phase I Archaeological Report Format Requirements* and the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (Appendix C, DO-28, 1997). NRAP has reviewed this report and provided guidance for the curation of artifacts and field records.

Acknowledgments. Assistance was provided by David Bittermann, Project Manager, and Kathleen Johnson, Historic Architect, of the NPS, who visited the project area and provided guidance regarding footing placement. Mr. Bittermann returned to examine the 1 x 1-m units. Park Superintendent Patti Riley, Facilities Manager Ed Lorenzini (now retired), Chief of Interpretation Michael Shaver, and staff member Noah Lumsden provided help that made this project possible. Their contributions are gratefully acknowledged, as is that provided by the NRAP staff, including William Griswold, Ph.D., R.P.A., and Gail Frace.

Project Location and Setting

Location. Governors Island is in the Upper Bay of New York Harbor (Figure 1). It consists of approximately 172 acres, of which 22 acres are under NPS administration as Governors Island National Monument. The mouth of the East River, a tidal strait, separates Governors Island from Manhattan, and Buttermilk Channel flows between it and Brooklyn (Figure 2).

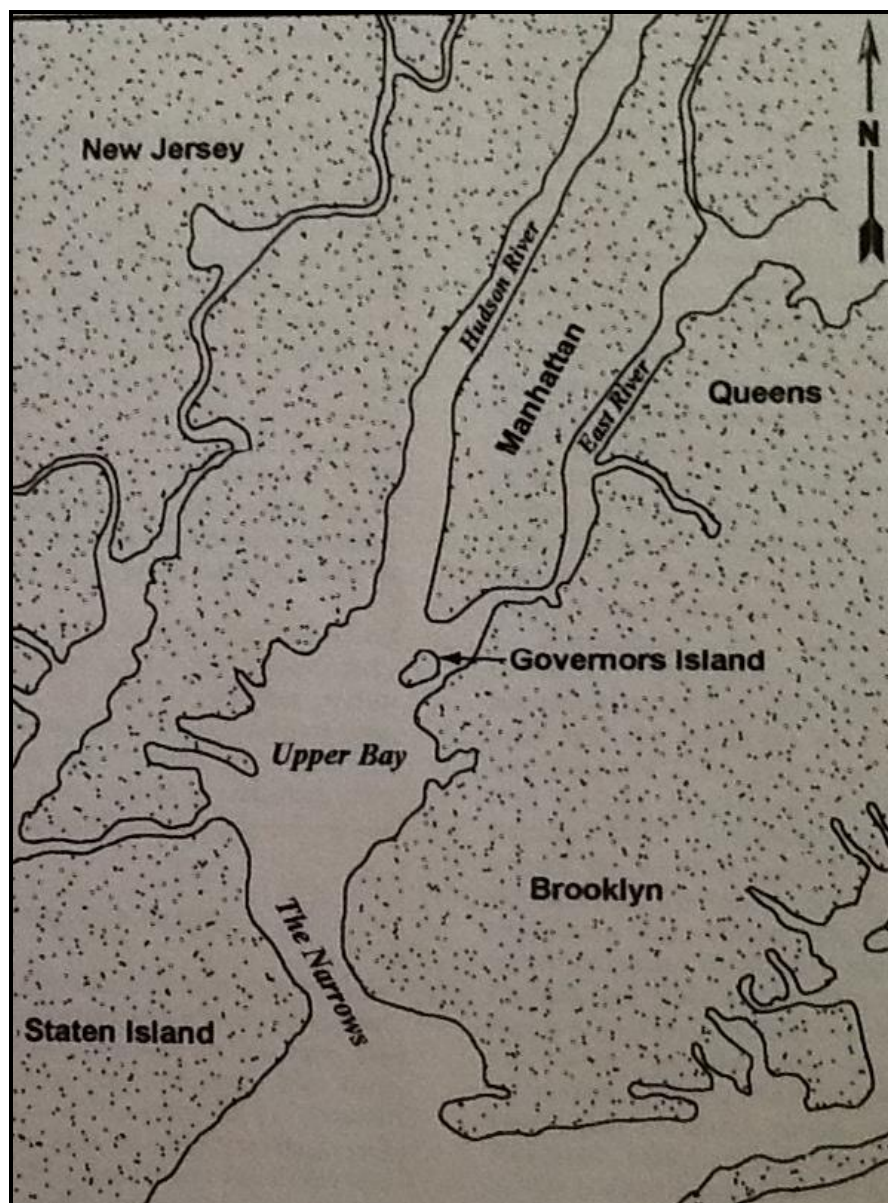


Figure 1. Governors Island. Adapted from Wright and Binzen (2003).



Figure 2. Governors Island on USGS Jersey City, NJ/NY Quadrangle. Most buildings in the southern part of the island have been demolished.

Geology, Soils, and Vegetation of Governors Island. The northern part of the island is a natural landform and is a remnant of glacial activity. Geoaarcheologists have commented:

The island has a core of bedrock and glacial till. Particle size analyses of the capping sandy sediments identify glaciofluvial, fluviomarine, and shoreface depositional energies as well as some contribution of fines from human activity. Sediments from archaeological contexts are characterized by elevated levels of organic matter and phosphorus (Thieme, Schuldenrein, Herbster, and Schabel 2003).

According to the New York City soil survey (NRCS online site), modified soil in the northern portion is Unadilla-Riverhead pavement and buildings complex, 0 to 8% slopes. The southwestern part of the island, and a majority of the island's area, is artificial fill deposited between 1902 and 1911 from material excavated for the Lexington Avenue subway. This soil is defined as Laguardia-Ebbets pavement and buildings, wet substratum complex, 0 to 8% slopes.

The area around Fort Jay has been landscaped extensively for more than 200 years. In the dry moat is a mowed grass lawn, with shade trees nearby. Under the bridge in the APE the soil has been eroded and is bare.

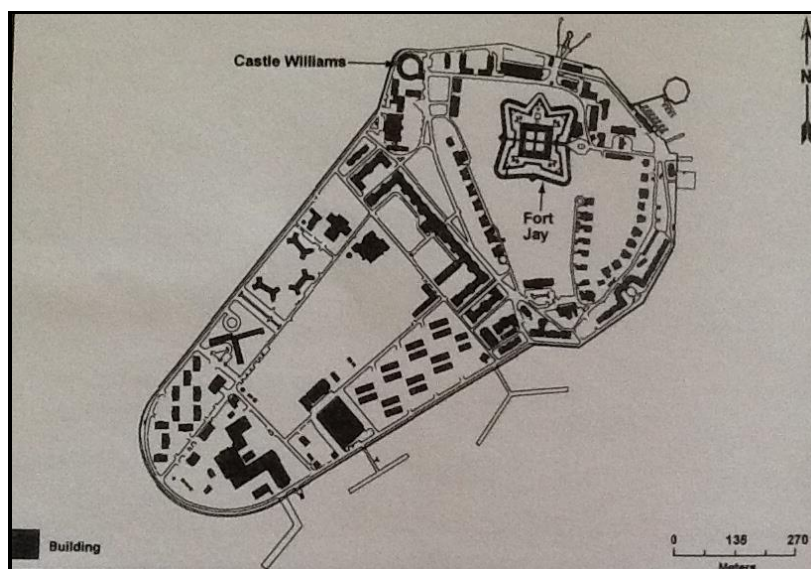


Figure 3. Governors Island. Adapted from Wright and Binzen (2003).

Fort Jay. Formerly called Fort Columbus, Fort Jay is one of two large military structures in the National Monument (Figures 3 and 4). It is Building 201 and Structure #8 at the Park, and is on the List of Classified Structures (LCS) (ID 233500), and is recorded in the NPS Archeological Sites Management Information System (ASMIS) (GOIS00003). It is listed in the National Register of Historic Places and is part of the Governors Island National Historic Landmark District. An overview of its history and architecture is in the Historic Structure Report (HSR) for Fort Jay (Yocum 2005); a description of the Guardhouse from the HSR as Appendix A.

According to the Governors Island Archeological Overview and Assessment (AOA) states, “It was mainly the vast landscaping that occurred during the 1790s, and later in the 1800s, that disturbed so many of the historic sites on the height of

land. However, the remnants of the earlier sites that have been located indicate the possibility that more may yet be identified (Wright and Binzen 2003: 143).”

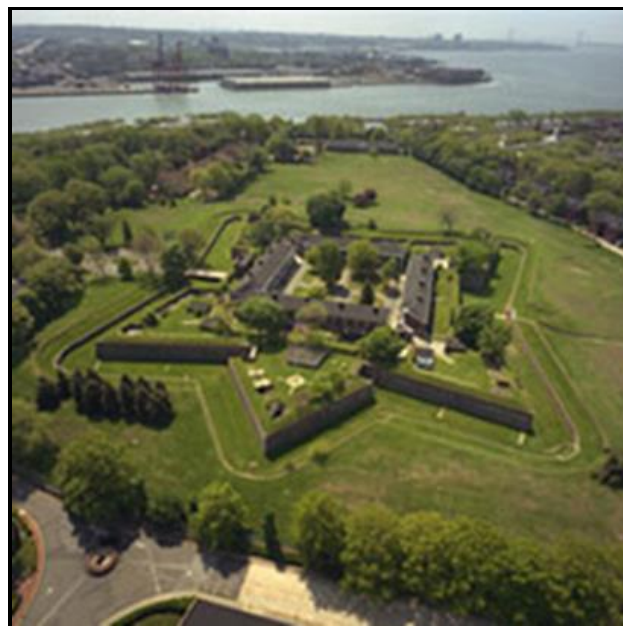


Figure 4. View of Fort Jay, looking south, with project area in the left middle ground.

Culture History of the New York Harbor Region and Land Use History of Governors Island

Several culture histories of the New York Harbor region (i.e., the harbor and its littoral, the harbor islands, Manhattan, adjacent areas of Long Island, New Jersey, and the southern Hudson Valley) can be found in previous research reports for Governors Island and for locations elsewhere around the harbor (e.g., Liberty Island, Fort Wadsworth on Staten Island). Another place where these summary culture histories have been presented is the *Archeological Overview and Assessment for Governors Island National Monument* (Wright and Binzen 2003); other relevant culture history summaries can be found in the *Archeological Overview and Assessment for the Sandy Hook Unit of Gateway NRA* (Bianchi and Linck n.d.) and the *Archeological Overview and Assessment for the Jamaica Bay Unit of Gateway NRA* (Mangi Environmental and Lone Tree Archaeology and Environmental 2005).

Archeologists working in southern New York and adjacent areas of New Jersey and New England have addressed the occupation and subsistence of Native American populations (e.g., Dincauze 1974, 1975, 1990; Kraft 1986; Snow 1980). There is an extensive literature on the Historic periods of the region, from early European exploration, Dutch settlement, the Dutch and English colonial periods, and subsequent history of New York from the eighteenth to the twenty-first centuries. A general work on the archeology of this region, both prehistoric and historic, is by Cantwell and Wall (2001).

Although culture periods are not the same as chronological units (at least for prehistory), they are conventionally associated with certain time periods. Historical periods are more often defined by specific historic events (e.g., establishment of the earliest permanent Dutch settlement in 1624) or general temporal units (e.g., the nineteenth century). In both cases, it is the archeologist or historian who is determining significance of chronology and cultural developments, which may not reflect what was seen as significant by the people living in the past. For the sake of convenience, the common periodization of the past is used for this culture history and land use history.

Paleoindian Period

The earliest known human occupation of the New York Harbor region was during the **Paleoindian period**, 10,500 to 9,000 years ago, following the retreat of the last major glaciers. This does not necessarily mean that the environment was glacial or peri-glacial as humans first came to this area. There may have been a variety of environments, including forests that included many different plants and animals.

Archeological evidence for the Paleoindian period in southern New York and nearby New Jersey is not great, with much of it consisting of isolated finds of fluted projectile points. A few sites in New York, however, like the Port Mobil site on Staten Island, indicate more extensive occupation. No doubt, there were Paleoindian sites on the formerly exposed glacial outwash plain that were subsequently submerged. When the Port Mobil site was occupied, Staten Island was connected to the mainland (Ritchie 1980), as was Governors Island (Wright and Binzen 2003:13).

Archeologists surmise that the people living in North America during this period were organized into small bands that were mobile, with seasonal hunting and gathering subsistence strategies. They possessed a lithic tool kit that included fluted projectile points, often made of chert that was transported long distances. What should be remembered when considering the Paleoindian-period occupation of the New York Harbor region is that sea level was still much lower than today. Consequently, the environmental adaptations required for survival here at that time were not focused on marine resources but inland species.

Archaic Period

In the first part of the next culture period identified by archeologists, the **Early Archaic** (9,000 to 8,000 years ago), the climate in the New York Harbor region became more temperate, warmer, and drier, with estuaries forming and a spruce-pine, then a mixed pine-hardwood, forest developing (Kraft and Mounier 1982). Sea level rose, putting much of the coastal plain under water and making landforms that were previously part of the mainland into islands. Nonetheless, the place that is now New York City was still inland, and sea level was about 45.7 m (150 ft) lower than today (Cantwell and Wall 2001:46).

Although Early Archaic sites are not numerous in the Northeast in general, the view that once prevailed among archeologists that this part of the East Coast was “empty” during the Early Archaic period was revised, initially because of investigations of sites on Staten Island (Ritchie and Funk 1971). There is a consensus among researchers that the people of this culture period had adapted to changing environmental conditions. With the extinction of Pleistocene megafauna, the smaller mammals common in the region today were the game sought by Early Archaic-period hunters. These people moved in established territories, had settlements that were smaller than in the previous Paleoindian period, and used river, lake, and other wetland resources. They used stones from local lithic sources for tool manufacture, and bifurcated-base projectile points are characteristic of this period.

Cantwell and Wall (2001:53) commented on the Early Archaic:

The debates about Early Archaic peoples have now shifted from environmental explanations for their disappearance to estimates of their population size and

questions about their adaptations to this post-glacial landscape. Part of our difficulty in trying to reconstruct the lives of these people is that their environment, like that of the earlier Paleoindian peoples, has no modern analogues. It is completely beyond modern experience and is, in that sense, a true *terra incognita* for scientific exploration.

In the **Middle Archaic** (8,000 to 6,000 years ago) there was a warming trend, with the environment becoming similar to that of today, by about 7,500 years ago (Funk 1993). Deciduous forests with varied plants and animals characterized the Northeast of the Middle Archaic period. Large settlements that served as “base camps” and that were occupied for more than one season, along with smaller camps near seasonal resources, developed in this period. With increased resources to be used, there were more elaborate and specialized tool kits made from chipped and ground stone (Dincauze 1976), and lithic material that is inferior to chert for tool manufacture (e.g., quartz, quartzite, argillite, and rhyolite) was used. Among the resources used in this period were anadromous fish.

Oysters (*Crassostrea virginica*) and other shellfish were used in this period. Although the nutritional value of oysters has led to debates about when and under what circumstances (e.g., times of food shortage) that they were taken and eaten, shell middens dating from this period indicate that shellfish were extensively harvested. These ancient middens, along with those created in later periods, were a long-lasting feature of the New York landscape; early European accounts of shell heaps on the shore, early archeological investigations (in the 19th and 20th centuries), and even a street name (Pearl Street in Manhattan) attest to the presence and prominence of middens around the harbor.

There are few traces of the Middle Archaic in what is now New York City. Some sites with stone projectile points characteristic of the period have been recorded on Staten Island. The now-submerged areas of the coastal plain may have been more intensively occupied than this formerly inland area (Cantwell and Wall 2001:56).

In the **Late Archaic** (6,000 to 3,000 years ago) there is an increase population in the New York Harbor region. There are more reported sites in coastal New York and the lower Hudson Valley (Wright and Binzen 2003:14). Sea level stabilized, although it was still about 18.2 m (60 ft) lower than today. Sites from the Late Archaic period have been recorded near inlets and on lower river terraces; in the New York Harbor region they have been found on Manhattan, Long Island, and Staten Island.

Many different ecological niches and topographic settings were used for sites, which were repeatedly occupied. During the Late Archaic, maritime resources were more intensively used

than previously. Shellfish evidently provided a substantial source of nutrition along the coast, as did waterfowl and fish.

Archeologists have identified three cultural traditions in this period – the Laurentian, the Small Stemmed, and the Susquehanna Traditions – based on projectile point types. These cultural traditions have been associated with particular regions in the Northeast, adaptation to different environments, and possibly ethnic identity; relationships among these traditions remain a research topic of interest. Trade with other areas (e.g., the Delaware River Valley) is suggested by the presence of certain lithic materials (e.g., argillite); trade and long-distance contact are other research topics for this period.

A final sub-division of the Archaic has been termed **Transitional Archaic** or Terminal Archaic and has been dated variously (e.g., 3,700 to 2,700 years ago or 3,500 to 3,000 years ago). During this phase, adaptive strategies and settlement patterns common in the subsequent Woodland period developed. Several distinctive projectile point types (e.g., Orient Fishtails, Susquehanna broadspears, Wayland notched) appear, as did the manufacture of soapstone (i.e., steatite [zinc talc chloride] from New England or Pennsylvania) bowls. The first grit-tempered ceramics are found in sites at the end of the Archaic. On eastern Long Island, complex human burials have been investigated, but in New York City this period is primarily represented by “poorly documented finds of Orient points and steatite pots” (Cantwell and Wall 2001:72).

Woodland Period

The Woodland period has been traditionally distinguished by archeologists as having ceramics and increased plant cultivation. Although generally fragile and therefore difficult to transport, ceramic vessels can be more easily made than steatite bowls, and there are more sources of clay than steatite. It is often associated with more sedentary settlement patterns and with horticulture (for the cooking or storage of plant foods).

Like the Archaic, the Woodland is divided into units. First of these is the **Early Woodland**, which lasted from about 3,000 or 2,700 to 2,000 years ago. Along with ceramics (particularly Vinette I style, grit-tempered pottery), certain projectile point types (e.g., Meadowood and Rossville) were made in this period. Localized, semi-sedentary settlements were occupied on the coast, and they show increasing intra-site complexity (Mournier 1997). Shellfish (e.g., oysters and clams) were used but may not have been as large a part of the people’s diet until the next period (Wright and Binzen 2003:15). Except for what is known from the North Beach site, in the vicinity of today’s LaGuardia Airport, there is little Early Woodland-period material in New York City.

The **Middle Woodland** period (2,000 to 1,000 years ago) show signs of increased population occupying semi-permanent settlements. A contrast is sometimes been presented between the interesting cultural developments happening elsewhere in eastern North America (e.g., complex societies, ornaments, elaborate burials, such as those identified with the Hopewell culture) with what was happening in the Northeast. People on the coast were living in small, egalitarian communities, but they were not completely cut off from or entirely different from what was happening elsewhere. Ceramics became more elaborate in this period. There is a site in the Bronx that contained mica plates from outside the region; pottery and purple argillite from the Delaware River Valley have also been found at Middle Woodland sites. Clearly there was trade over a wider region taking place (Cantwell and Wall 2001:77-82).

In the **Late Woodland** period (1,000 to 450 years ago), a warmer climate favored plant cultivation. People aggregated into large villages. Although this characterization of the Late Woodland period can be justified along rivers in the inland parts of the Northeast, there is not much evidence of this on the coast in the New York Harbor region or in southern New England. There are differences of opinion among archeologists on the nature of the Late Woodland period. Even the extent of maize-beans-squash horticulture has been a subject of debate: although early Europeans reported farming villages, some archeologists contend that the shift to increased dependence on plant cultivation and settled villages was a response to European contact. Because of intensive subsequent building in New York City, many sites have been obliterated, and the only documentation of sites tends to be poor. Consequently, we are at a disadvantage in the study of the Late Woodland period, especially horticulture, in this region (Cantwell and Wall 2001:93-116; Wright and Binzen 2001:16).

Smaller settlements and camps have been documented, and they were used for acquiring resources, such as shellfish. Not far from the project area, across the harbor, a Middle to Late Woodland-period shell midden site was reported by Griswold (2002) on Liberty Island.

Contact and Early Colonial Periods

Kraft and Mounier wrote (1977:139):

During [the Late Woodland period to the coming of European traders and settlers, to the early seventeenth century] it appears that the entire region now identified with New Jersey, eastern Pennsylvania, southern New York, and the northern portions of Delaware and Maryland, was the homeland of the ancestral Lenni Lenape, or Delaware Indians, as these people came to be known by Euro-Americans...

Although European explorers visited the area since 1524, the first permanent European settlement was established in the New York Harbor region in 1624 on Governors Island. The

following year, the settlement was moved to Manhattan (Wright and Binzen 2003:17). In 1637, the Dutch governor, Wouter Van Twiller, acquired Governors Island for himself, with two Native Americans signing the deed. Known for its oak, hickory, and chestnut trees – it was named Nooten Eylandt, or Nut Island in Dutch – it is not clear if Native Americans continued using or occupying the island.

Europeans built a sawmill on the island. In 1998, excavations by PAL found remains of charred wood on the northeast side of Nolan Park, in the front yard of the Governor’s House (Garman and Russo 1998:61). The island was also leased for a tobacco plantation. The GOIS Archeological Overview and Assessment states:

The archeological evidence on Governors Island for these early occupations [i.e., those noted above and any putative occupation earlier or later than these prior to the conquest by the English] is sparse; an early-seventeenth century Dutch trade bead [Kidd type Ivk4 Dutch-manufactured compound round bead, 1590-1635] and a Dutch sawmill encapsulate the entire known occupation of this island during this period...There is currently no evidence for other ethnic interactions on Governors Island during this period (Wright and Binzen 2003:23).

The English Colonial period began in 1664, although the Anglo-Dutch Wars continued until 1674. In this period, Governors Island was reserved for the Governor in 1699. It is likely that the island was used for pasture or agriculture.

Eighteenth Century

There is a mystery about the existence of a Governor’s House on the island in the first decade of the eighteenth century. It is not clear if the building was built, or if it had been built what happened to it. By 1710, there is no such building on the island, which was then being used as a quarantine station. Governors Island was the location of housing for between 7,000 and 10,000 Palatine refugees, fleeing Germany to settle in and near the Hudson Valley. Subsequently, the island was fortified, and it was used for garrisoning troops. The “Royal Americans” were stationed here before attacking the Fortress of Louisbourg in 1755.

In the American War of Independence, the island was not at first fortified. American troops under General Israel Putnam were among those who occupied the island in April 1776. An earthen fort was constructed at the location of Fort Jay. After the British occupied New York, American forces vacated the island. During the war, the British were on the island and established a naval hospital and other buildings there until they left New York in 1783 (Wright and Binzen 2003:31ff.). An archeological survey conducted by Louis Berger & Associates in 1994 found skeletal remains of seven Colonial-period males between Fort Jay and Castle Williams; these burials date to either the British occupation of the island in the middle

eighteenth century or are American prisoners-of-war who had been held on the island (LBA 1995).

During the first decade of the Federal government, Congress funded the First System of Fortifications to protect the U.S. coast. In 1794 plans were made for Fort Jay, and by 1798 several buildings had been constructed on the island (Wright and Binzen 2003:37).

Nineteenth Century

From 1806 to 1811 Castle Williams was built to the west of Fort Jay. This was part of an extensive system to defend New York Harbor. It included, in addition to the fortifications on Governors Island, Castle Clinton (Southwest Battery), North Battery (on the Hudson River), Fort Wood (on Bedloes, now Liberty, Island), Fort Gibson (on Ellis Island), and, on Staten Island, Fort Richmond, Fort Tompkins, and other forts. Fortification of New York Harbor deterred the British Navy from attacking it.

Fort Jay, later called Fort Columbus (only to be renamed Fort Jay in the twentieth century), was taken down and rebuilt:

In 1806, the old earthen fort was demolished, except for the walled counterscarp, gate, sally port, magazine and two barracks, to allow construction of the larger, newer Fort Columbus...At the time of completion, it consisted of an enclosed Second System square fortification with four bastions and a ravelin surrounded by a dry moat (Wright and Binzen 2003:39).

After the War of 1812, during which Fort Jay did not see action with the enemy, Governors Island was used as an arsenal, as a harbor defense during the Civil War, as a prisoner-of-war camp for Confederate soldiers during the Civil War, and as the regional headquarters for the Army. Numerous buildings were constructed in the nineteenth century on Governors Island.

Twentieth Century

The island was expanded at the south end in the early twentieth century, and, although both Fort Jay and Castle Williams were obsolete, the old forts were preserved and put to a variety of uses by the Army through two world wars and other conflicts. In 1966 the Army ended its long occupation of the island, and it was taken over by the U.S. Coast Guard.

Governors Island was the scene of two notable events in the 1980s. In 1986, President Reagan presided over the lighting of the re-dedicated Statue of Liberty, and in 1988 he met with Soviet President Gorbachev. Governors Island National Monument was later designated by President Clinton, and the remainder of the island was transferred to New York State and New York City for public purposes.

Area of Potential Effect

Subsurface investigation was limited to the Area of Potential Effect (APE), where scaffold footings may be placed, near and around the Gate, Guardhouse, and within the Dry Moat of Fort Jay (Figure 5).

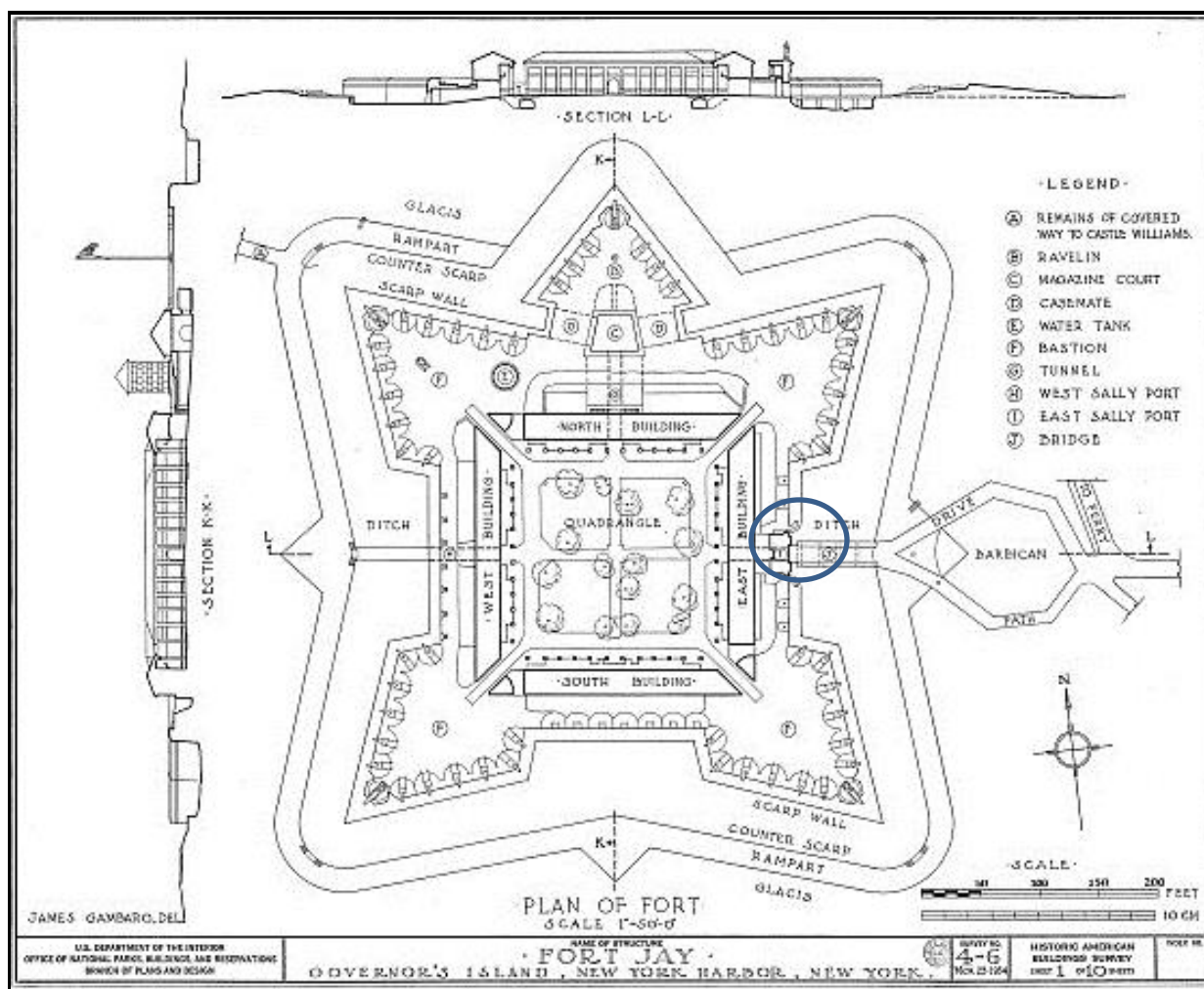


Figure 5. Plan of Fort Jay, with Gate, Guardhouse, and portions of the Dry Moat within the APE circled. From Historic American Buildings Survey (HABS) NY, 31-GOVI, 1- (sheet 1 of 10).

Although footings are indicated on project plans provided by the scaffold design contractor (Plan B Engineering, Inc.), the eventual location of footings may vary from these places. Testing was done within the APE not at specific locations proposed for footings but at places that would provide data sufficient to characterize the APE's component areas in general.

The reader should be aware that there are different levels in this relatively small space:

- The level at the bottom of the Dry Moat;
- The level of the Gate entrance and bridge (referred to in some documents as the “tunnel” or “sally-port tunnel” level) and
- The level above the Sally Port and behind the Gatehouse.

Appendix A is attached to this report in order to assist readers not familiar with the fort in orienting themselves. It contains relevant extracts from the HSR for Fort Jay (Yocum 2005).

Three Areas Within the APE. Three areas within the APE were selected for testing. These component areas are depicted in Figure 6.

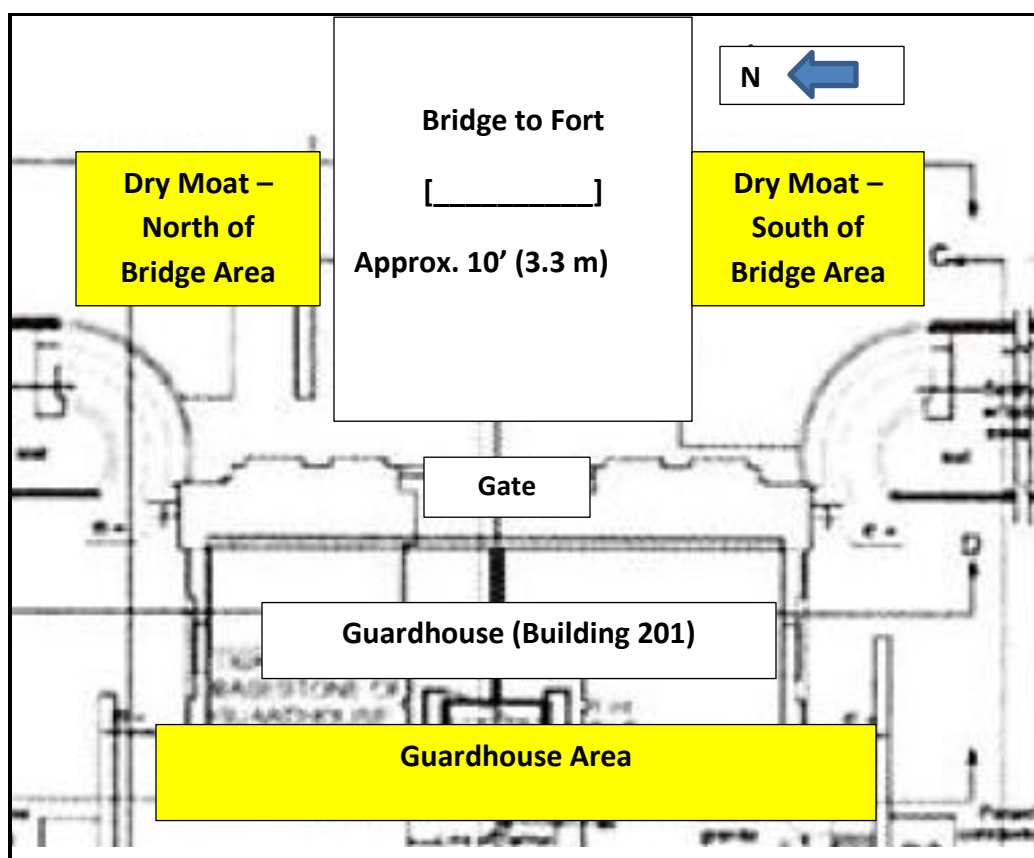


Figure 6. Plan of Fort Jay Dry Moat, Gate, and Guardhouse. The three areas selected for testing are indicated by colored blocks. From project plans prepared by Plan B Engineering, Inc.

The three areas that comprise the APE and that were investigated are:

Dry Moat – North of Bridge Area. This area is the floor of the dry moat, from where the granite scarp (i.e., wall of the fort on the inner side of the dry moat) curves west towards the gate, extending up to the bridge (Figure 7). It has an area of approximately 4 x 4 m (13 x 13 ft). A concrete stairway leads down to the moat floor. A drawing from 1881 depicts the area without the concrete stairs (Figure 8), which apparently date to the World War II era.



Figure 7. Dry Moat – North of Bridge Area, looking southwest.



Figure 8. Drawing of Gate, showing location of North of Bridge Area, 1881. Note absence of stairs. From Yocum 2005: Figure 41.

Dry Moat – South of Bridge Area. This area is on the floor of the dry moat, from where the granite scarp of the fort curves towards west the gate, extending to the bridge (Figure 9). It has the same dimensions as the previous area. A mound of earth is in the corner formed by the scarp and the gate. The area is level in a photograph from 1913 (Figure 10).



Figure 9. Dry Moat – South of Bridge Area, looking northwest.



Figure 10. Photograph of Dry Moat – South of Bridge Area, 1913. Ground is level. The bridge has since been replaced. From Yocum 2005: Figure 55.

Guardhouse Area. “A brick Guardhouse abuts the upper gate of Fort Jay on the interior (west) side, where it sits above the sally- port tunnel” (Yocum 2005: 196). The brick wall of the Guardhouse forms the eastern boundary of this area. The eastern wall of the East Barracks (Building 202) is the western boundary of this area. Retaining walls adjacent to the areaway (i.e., a sunken space affording access, air, and light to the basement of the East Barrack [Building 202]) form the northern and southern boundaries of this area. It is approximately 9.75 x 4 m (32 x 13 ft). An overview of this area is shown in Figure 11.



Figure 11. Guardhouse Area, looking north. Note condition of retaining wall.

Additional maps and photographs of these areas are presented below in the section on Work Completed and Project Results.

Prior to Fieldwork

In March 2014, James W. Kendrick, Ph.D., NPS Northeast Regional Archeologist, provided information on this project, designated as GOIS 2013C. Subsequently there was a meeting of NPS personnel involved in this project on March 13, 2014 at GOIS to discuss the archeological component of this project and the larger project with which it is associated.

A utility mark-out was conducted, and one electric cable was located in the Guardhouse Area. GOIS personnel determined that this line was not active. A survey for unexploded ordnance (UXO) was also performed, and the project area was found to be clear of dangerous material.

Work Plan

The SOW called for:

- 16 shovel test pits (STPs). The STPs are intended to help assess the effect of the 0.3 x 0.3-m (1 x 1-foot) footings, which will be buried approximately 0.3 m (1 foot) deep. Their placement should, however, evaluate the effect of the installation of footings overall and not try to anticipate exact placement of each footing. These units may be backfilled.
- Two 1 x 1-m (3.2 x 3.2-ft) units. These are to assess the archeological deposits in the Guardhouse Area. Excavation will end when the vault for the sally port is reached. If the vault is not reached within 1.3 m bgs, the unit will be quartered, and excavation will continue to 1.8 m bgs. These units are not to be backfilled.

Research Issues

The original Guardhouse had a wing, remnants of which may remain below grade. The APE underwent significant changes in the 1830s, including rebuilding and relocation of the East Barrack and rebuilding of the original 1795 Guardhouse. By the mid-19th century, the configuration of the Gate and Guardhouse seems similar to that of today (Figure 12).

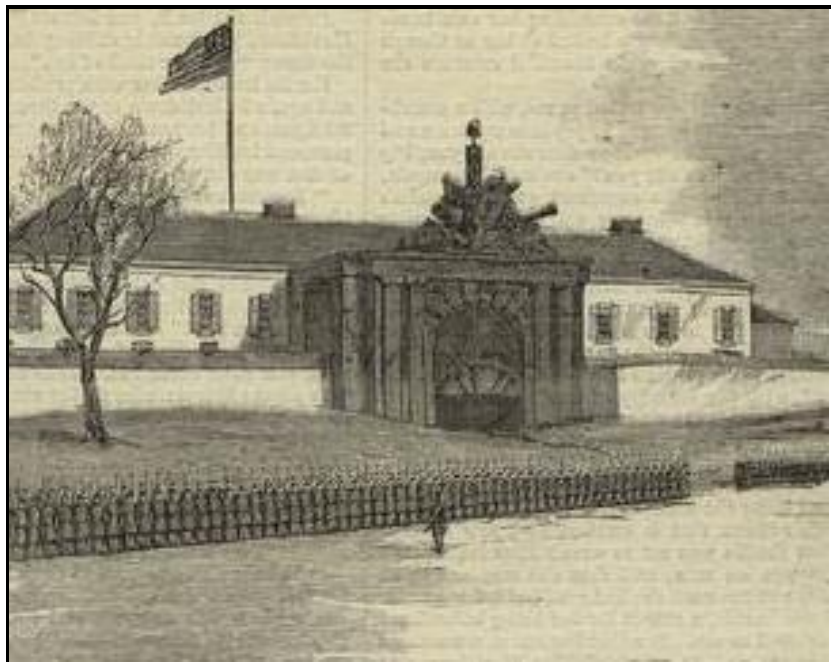


Figure 12. Gate, Guardhouse, and East Barrack, 1861.
From Yocum 2005: Figure 28.

Extensive work was done on the Guardhouse in 1938; this is summarized by Yocum (2005: 146):

Three architectural drawings for repairing the gate and guardhouse at Fort Jay are prepared. Work on the two interior rooms of the guardhouse may have been carried out at this time, based on notes to “lay new wood floor” and apply “new plaster on walls.” (Drawing files, Building 910, Governors Island. Note that one of these drawings was photographed by the Historic American Buildings Survey [HABS] in 1982- 83 and included in the report “Governors Island, Fort Columbus (Fort Jay), survey number HABS NY- 4- 6, negative no. NY- 4- 6- 33. [Reproduced below as Figure 13.]

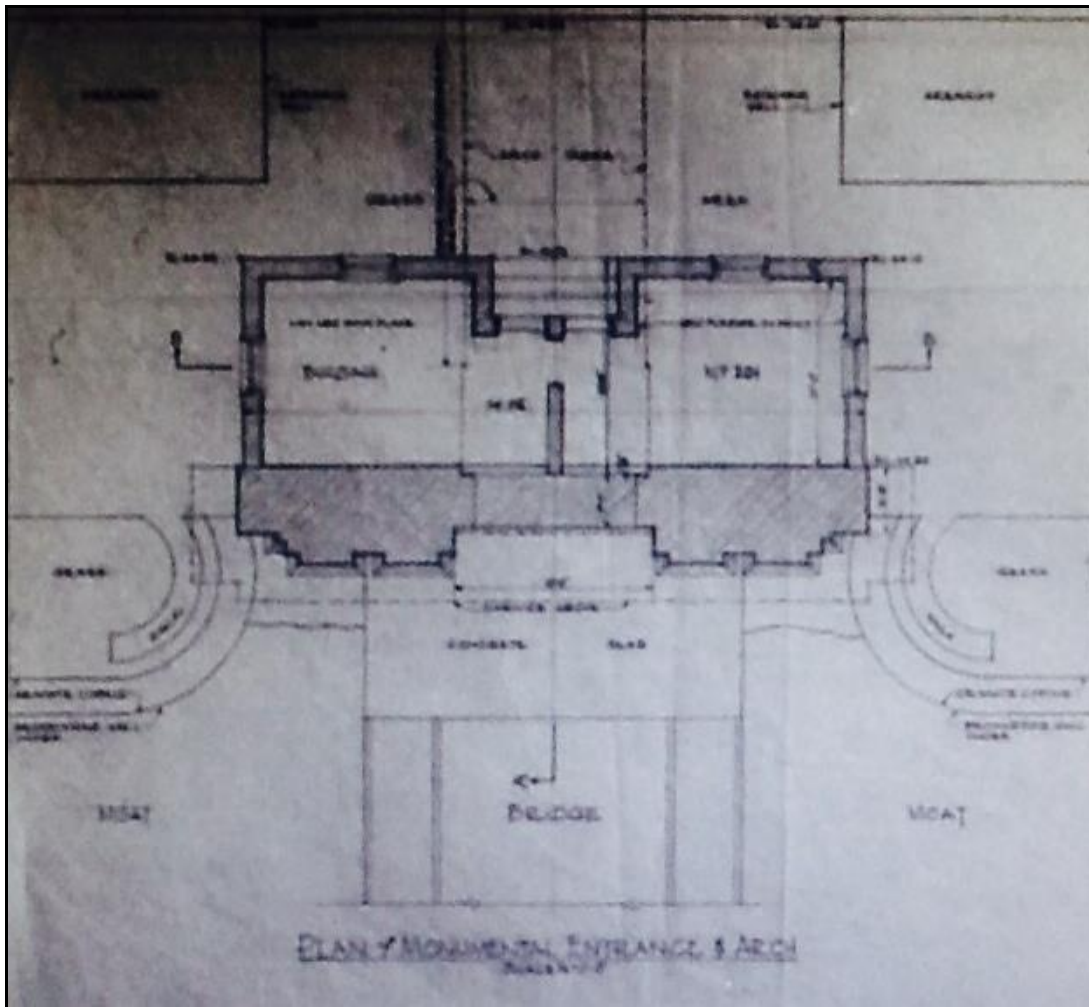


Figure 13. Photograph of 1938 plan, made by HABS 1981-1983, of Gate and Guardhouse. Note that there are no concrete stairs in place north of the bridge.

In addition to these specific concerns, investigations in this area may be able address the general research questions posed in the AOA (Wright and Binzen 2003: 146-147).

Work Completed and Project Results

Fieldwork at Fort Jay on Governors Island was performed September 9 through 12, 2014. Weather conditions were dry and favorable. Part of the first day was spent with David Bittermann and Kathy Johnson of the NPS at the project area, locating areas of concern and APE boundaries. This information supplemented what was gathered on a site visit on March 13, 2014 and plans provided for the project. GOIS Facilities Manager Ed Lorenzini facilitated the project and Noah Lumsden, also on the GOIS staff, provided valuable assistance.

Appendix B presents the artifacts found in the excavation units. Appendix C includes coordinates of the northwestern corner of each STP, soil stratigraphy, and information on artifacts and features.

Dry Moat – North of Bridge Area. Seven STPs (STPs 1-7) were excavated 1 m apart in the dry moat north of the bridge to Fort Jay (Figures 14 and 15). A datum point was selected on the scarp where it begins to curve towards the gate. Horizontal coordinates in this part of the APE are measured from this datum. Vertical measurements are taken from the northwest corner of each STP. The ground surface is fairly level throughout this part of the APE, except for a slight depression in front of the concrete stairs and a slope at the edge of the bridge.



Figure 14. Looking southwest at Dry Moat -- North of Bridge Area. STP 1 (coordinates N 0/E+1; the northwestern corner is in line with the North datum and 1 m [3.2 ft] to the east of it) is being excavated.

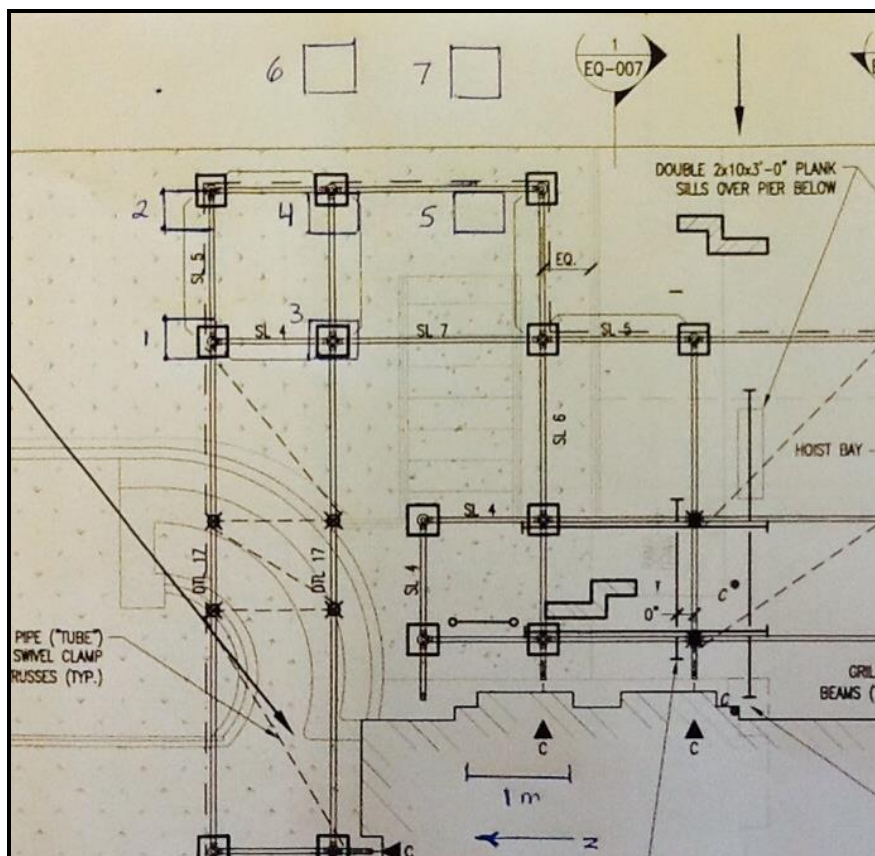


Figure 15. Plan view of Dry Moat – North of Bridge, with STPs 1-7 indicated. Field sketch map. STPs 0.5 x 0.5 m (1.6 x 1.6 ft), 1 m (3.2 ft) apart. Note stairs. Locations of proposed scaffold footings and scaffolding shown on map.

The typical STP stratigraphy was very dark brown (7.5YR 2.5/2) silty fine sandy loam (0 to 30 cm [0 to 1 ft] bgs) over yellowish-brown (10YR 5/4) silty fine sand to 50 cm (1.6 ft) bgs. All walls had similar profiles and no features. Artifacts in the upper stratum included modern trash. In the second stratum were late 18th and early 19-century artifacts (e.g., clay pipe stem and bowl fragments, olive green bottle glass, a sherd of hand-painted blue-on-white porcelain, and a sherd of green incised shell-edged pearlware [1800-1830, Figure 16], and a brick [1870-1929]).

Figure 16. Green shell-edged pearlware (1800-1830), found in STP 6, 50 cm (1.6 ft) bgs.



Dry Moat – South of Bridge Area. Seven STPs (STPs 8-14) were excavated 1 m apart in the dry moat north of the bridge to Fort Jay (Figures 17 and 18).

Figure 17. Dry Moat – South of Bridge Area. STP 8 (coordinates S 0/E+1; the northwestern corner is in line with the South datum and 1 m [3.2 ft] to the east of it) is being excavated.

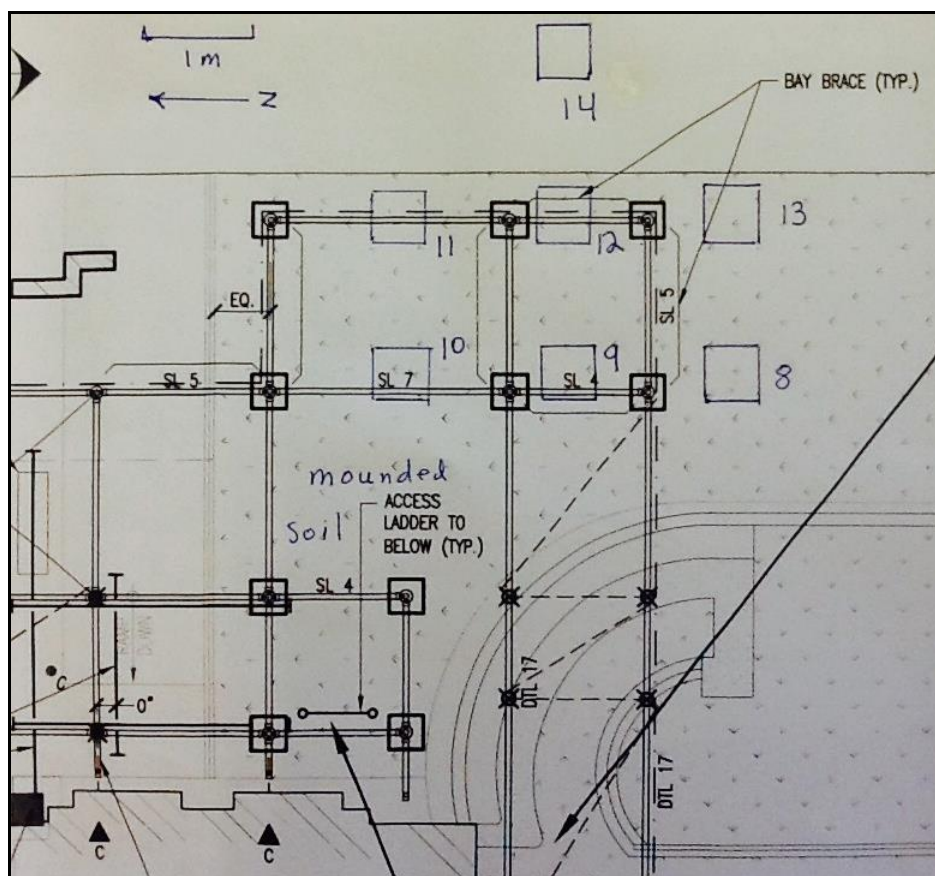


Figure 18. Plan view of Dry Moat – South of Bridge, with STPs 8-14 indicated. Field sketch map. STPs 0.5 x 0.5 m (1.6 x 1.6 ft), 1 m (3.2 ft) apart. Locations of proposed scaffold footings shown on map.

As with the previous area, a datum point was established on the scarp, and horizontal measurements were taken from it; vertical measurements were made from the northwest corner of each STP. The STPs in the dry moat south of the bridge contained soils similar to those observed in the STPs north of the bridge: Typically, very dark brown (7.5YR 2.5/2) silty fine sandy loam (0 to 30 cm [0 to 1 ft] bgs) over yellowish-brown (10YR 5/4) silty fine sand to depths of 50 cm (1.6 ft) bgs. Between these soil horizons there is some mottling, suggesting standing water periodically in this location. There is a mound of soil where the fort wall curves to meet the gate that had a thicker upper stratum than elsewhere in this area or in the previous area; this soil was removed to provide a consistent vertical datum for the STPs in this portion of the project area and for comparison with those north of the bridge as well. Some soil was harder packed than those to the north. No features were found. Some recent trash was in the upper stratum, but the lower stratum contained a variety of glass fragments, a pistol bullet, and a rifle shell casing.

Guardhouse Area. Two 1 x 1-m units were excavated here. Understanding the location and complex characteristics of this area is aided by the drawings and photographs below. (Figures 19, 20, 21, 22, and 23).

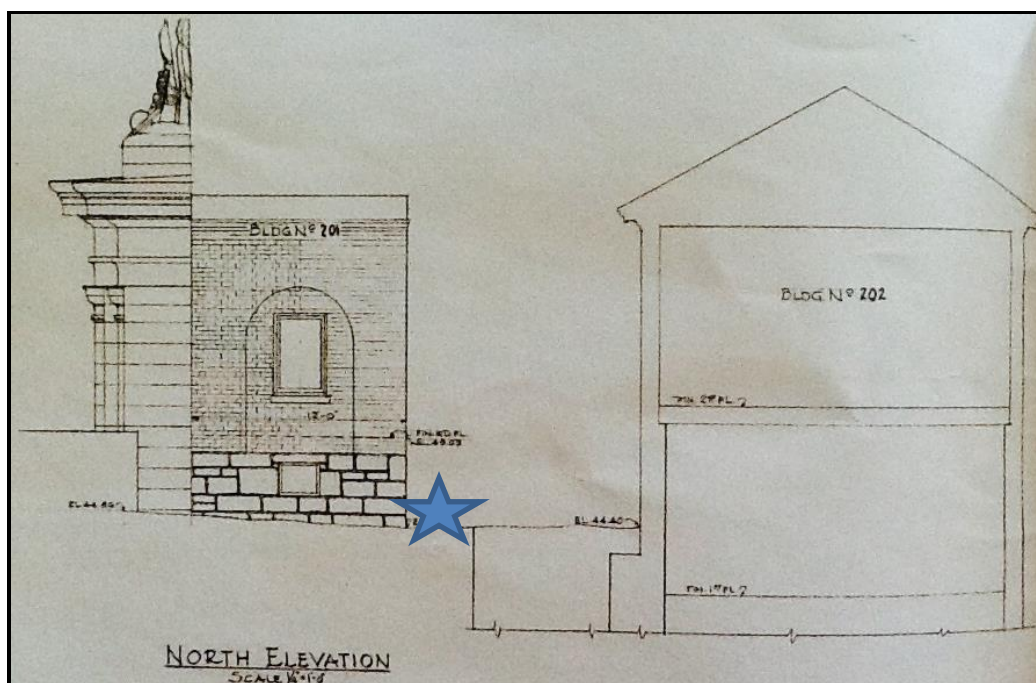


Figure 19. Drawing (1938) of north elevation. Star indicates surface investigated with 1 x 1-m (3.2 x 3.2 ft) units (Units A and B) within Guardhouse Area. Areaway shown between East Barrack (Building 202) and Guardhouse.



Figure 20. Looking south towards Guardhouse Area. Building 201, right; eastern wall of Building 202, left. Unit A excavated at arrow.

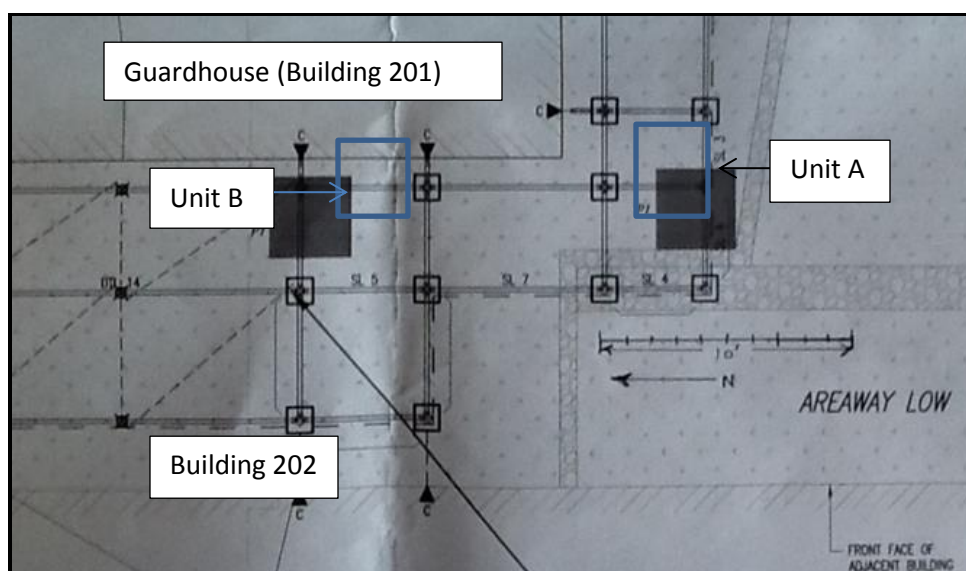


Figure 21. Plan of Guardhouse Area, east at top. Black squares are locations suggested for the 1 x 1-m (3.2 x 3.2 ft) units, outlines show the actual location and area of Units A and B.



Figure 22. Guardhouse Area, looking north, with areaway in foreground. Note condition of retaining wall below hurricane fence. Photograph taken in September 2014.

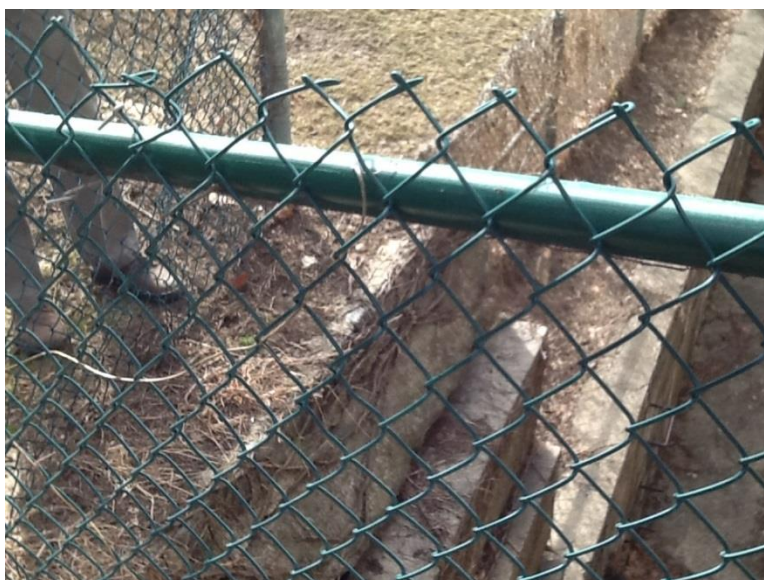


Figure 23. Retaining wall in Guardhouse Area, next to areaway, looking south. Photograph taken in March 2014.

Unit A was next to a hurricane fence bordering the retaining wall that borders the areaway (Figures 22 and 23). This retaining wall shows signs of stress, and engineers for the project were interested in learning more about the condition of the wall. Thus, in addition to addressing archeological questions about (a) the possible presence of cultural materials at this location and (b) the construction sequence of the Guardhouse and potential remains associated with former wings of the building, excavation of Unit A could provide information on the structural condition of the wall.

It was necessary to lengthen Unit A to compensate for two areas of concrete. At the western edge of Unit A was a trimmed rectangular granite stone not aligned with any other architectural element and dipping into a hole (Figures 24, 25, and 26). This hole was where the large stone blocks that were used to make the wall are turning in (Figure 22). The information on this unit was recorded, the unit was not backfilled, and the Project Manager was notified of the condition of the wall and potential dangers of further excavation here. Because of the perceived hazards, excavation was halted on this unit except for some careful probing.



Figure 24. Unit A, looking west, tape extended 1 m (3.2 ft). Note dark soil, stone, and bricks.



Figure 25. Unit A, looking south, tape extended 1 m (3.2 ft).



Figure 26. Unit A, looking southeast, showing eastern wall.

Because the surface was very uneven and hummocky, the surface was skimmed smooth. Two patches of concrete -- one by the fence pole on the southwestern corner of the unit and the other on northwestern corner, which appeared like dumped excess concrete -- were present. Soils were very dry mixed fill material (0-9 cm [0 to 0.3 ft] bgs), over yellowish-brown (10YR 5/4) silty fine sand (9-18 cm [0.3 to 0.6 ft] bgs), with some dark ashy soil at the bottom of the excavation, about 20 cm (0.6 ft) bgs; a few clinkers were present. A sample of this dark soil was taken with a trowel. During examination in the laboratory, a 1942 Newfoundland penny was found in the sample. Other than this coin, only some window glass and concrete fragments were present in this unit. On the east wall, a few small fragments of sandstone, which were not trimmed or mortared, were visible.

In addition to the rectangular trimmed granite stone noted above, there were four bricks, without mortar, in this unit. The top one, resting above the other three, is visible in Figure 21. This machine-made brick has "G.S.B.&P." incised on its surface. The lower three bricks are aligned with each other, along their long axes, but are not mortared; they appear to have been placed in a deliberate manner. There are no markings on these machine-made bricks. At the conclusion of fieldwork, when the unit was left unfilled, these bricks were had been replaced in the position in which they had been found.

Unit B was located next to the western wall of the Guardhouse, 6' (1.8 m) from the east-west centerline of the Guardhouse (Figure 21). The northern edge of the unit is a cast iron pipe (Figures 27 and 28). Next to the Guardhouse wall is an electrical cable that is not continuous and is out of service; this was detected by a utility survey prior to archeological fieldwork. Fragments of the cable sheathing were present in the unit and on the nearby surface. Two flagstones were removed from the location chose for the unit, and a thin layer of sparse vegetation and loose mixed fill soil was cleared from the surface of this unit (Figure 27). Within 0.05 m (2") bgs was the top of Feature 1.

Feature 1 (Figures 27, 28, and 29) is a concrete structure that dips from the Guardhouse wall to the west. It has a smooth surface that meets another surface to form a groin. Beneath the structure is rough concrete and stone. The feature extends the entire unit east to west and 0.5 m (20") north-south. Overall, the feature has the appearance of a cap or small roof that would conduct water away from the Guardhouse wall.

Few artifacts (e.g., wire nails, some wood fragments) were in the soil of Unit B. The maximum depth reached was 0.66 m (26 inches) bgs. All soil is dry, dusty fill material. One granite block was in the unit, apparently randomly deposited when the area had last been excavated and backfilled. No evidence of a previous structure was observed.

Beneath the concrete in Feature 1 is an area covered with a tar-like substance (Figures 28 and 29). This material extends for the width of the unit in an east-west direction over the Sally Port tunnel, but it is not exposed in the southern wall of Unit B (Figure 30). A drawing from construction plans (1938) indicates that there was to be 2 inches of concrete with a 5-ply waterproofing (Figure 31). The same plans call for the removal of the brick arch and replacing it. Thus, the present Sally Port roof and Feature 1 date from this period or later.



Figure 27. Unit B, looking northeast, tape extended 1 m. Western wall of Guardhouse (Building 201) abutting the unit on the east, cast iron pipe on the northern edge of the unit. Feature 1 is the concrete structure at the northern end of the unit.



Figure 28. Unit B, looking northeast, tape extended 1 m (3.2 ft).
Feature 1: Concrete over coated lower level. Note disconnected electric cable
and cast iron pipe.



Figure 29. Unit B, looking north. Two components of Feature 1 exposed.



Figure 30. Unit B, looking south.

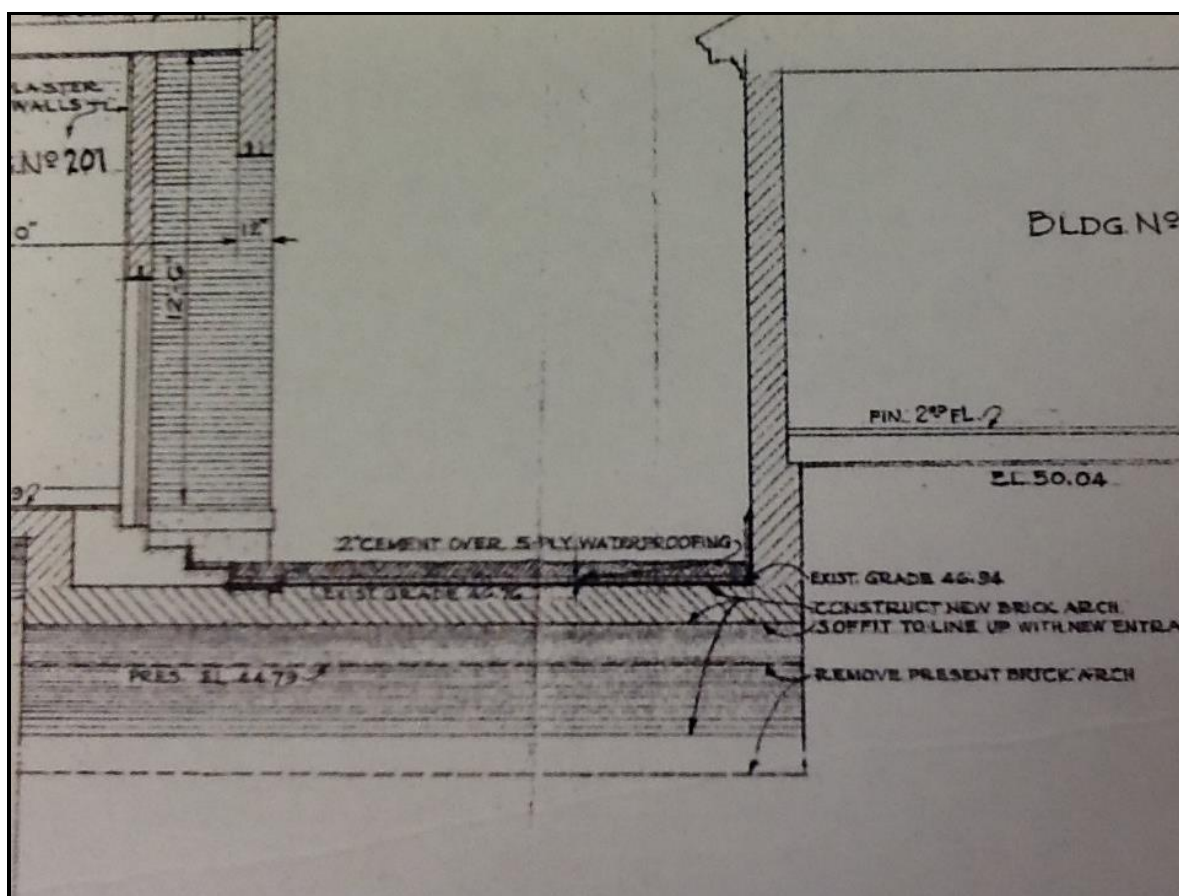


Figure 31. Construction plan (1938): Specification for cement over 5-ply waterproofing.

Conclusions and Recommendations

Archeological excavation of the three portions of the APE revealed that in the dry moat there is an area of sensitivity for 18th and 19th – century material below the upper stratum of loam. Since the footings will not extend to depths of more than 12” (0.3 m) bgs, the proposed excavation for the scaffold footings are unlikely to impact cultural resources on either side of the bridge in the dry moat.

The two 1 x 1-m (3.2 x 3.2 ft) units excavated above the Sally Port tunnel level behind the Guardhouse revealed evidence of a deteriorated retaining wall (Unit A) and 1938 reconstruction of the Sally Port roof (Feature 1 in Unit B). A 1942 Newfoundland penny in ashy soil in Unit A suggests that there was a need to fill in this area near the retaining wall abutting the areaway after work was done on the Sally Port roof in 1938. No evidence of previous buildings, specifically any wings to the Guardhouse, was found. A project, beyond the scope of the proposed construction, may reveal evidence of earlier architecture, and this area should be considered highly sensitive for potential archeological remains. The results of this investigation may prove useful to structural engineers in designing the scaffolding required for repair of stonework and sculpture on the Gate and Guardhouse.

No further archeological work is recommended for this project. Any changes in plans for erecting the scaffold will require additional archeological investigation.

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Appendix A: Architectural Descriptions from the Fort Jay HSR (Yocum 2005)

Ditch (Dry Moat): pp. 191-192

Fort Jay is surrounded by a sodded ditch, or dry moat. This is an early feature of the fort that existed as early as 1800 (fig. 7), and which was retained during the reconstruction of 1806- 08, as shown on the 1813 plan by Joseph Mangin (fig. 9). Colonel Williams described this feature in his “Draft of a Report to the Secretary of War” dated November 1808 as “the Ditch...about 40 Park in width.” Grass was growing in the ditch by 1881, described in a news article as “smooth and intensely green.” An underground tank of unknown type had been installed in the east ditch north of the sally port by 1962, noted on a plan of that date as “underground reservoir 200.” An archeological assessment of Governors Island undertaken in 1996 noted that remediation for lead contamination was being undertaken in the ditch concurrent with the archeological survey. Although no subsurface archeological testing was performed at that time, various informants reported finding historic bottles, clay pipes, ceramic sherds, and ammunition in the exposed soil.

Scarp: p. 193

The scarp is the inner wall of the ditch, which rises at a slight angle from the ditch. It is constructed of granite ashlar topped by a rounded granite cordon thought to date to repairs made in the 1830s. The position of the scarp dates to the rebuilding of Fort Jay in 1806- 09 when it was extended outward 14 ft and faced with durable masonry—most likely sandstone. Colonel Jonathan Williams explained in his “Draft of a Report to the Secretary of War” in November 1808 that the reason for extending the wall was “owing to the small talas or slope requisite for a Wall.” Williams further noted that the wall was 16 ft tall, 8 ft wide at the base, 6 ft wide at the top, and supported on the interior side beneath the terreplein by buttresses 5 ft long spaced 18 ft apart. Extensive rebuilding of the scarp appears to have taken place from 1831 to 1834, judging by reports submitted to the Engineer Department. This most likely involved replacement of original sandstone walls with the more durable granite that exists today...

Another major project to repair the masonry walls of Fort Jay, including the scarp, was proposed by the U.S. Coast Guard Civil Engineering Unit in August 1992 (“Rehabilitation of Moat Walls”). The work included repairing cracked stones, replacing missing stones, resetting displaced stones, and removing graffiti and obsolete electrical equipment. The extent to which this work was carried out, if at all, is not known.

Sally Port: pp. 195-196

The sally port, or main entrance, is centered on the east side of the fort opposite the postern. Like the postern, the sally port consists of two connected portions: a low arched passage that opens onto a bridge across the ditch, and a tall passage in the center of the east barrack that opens onto the quadrangle. Of these two portions, the former is the oldest as illustrated on a plan dated 1801 (fig. 7). The walls are cut sandstone and the vaulted ceiling is brick. Additional features of this early passage are a monumental gate on the east side and a stone- and- brick guardhouse built on top of the passage (see “Gate” and “Guardhouse”). The west portion of the sally port that passes through the east barrack dates to the construction of that building in 1834-37. The lower walls here are cut granite, the upper walls are brick, and the flat ceiling is wood. Machinery for the now- missing drawbridge is located in this section,

and presumably dates to the 1830s. The floor of the entire sally port is concrete covered with asphalt. More research needs to be done to determine the original floor material. There are no doors at the sally port, most likely because the drawbridge served the function of closing the entrance (see “Bridges”).

Gate and Sculpture, pp. 196-197:

The monumental sandstone gate at the east sally port is one of the oldest surviving elements of Fort Jay. Construction of the gate may have begun as early as 1797; it had been completed by February 1802, when it was described by Major D. Wadsworth as “a handsome Gateway with a *Corps de Garde* [guard room].” Colonel Jonathan Williams noted in his “Draft of a Report to the Secretary of War” dated November 1808 that “the Gate” was one of only a few structures retained during the reconstruction of the fort beginning in 1806. The gate was recorded in early plans of the fort dated 1801 and 1813 (figs. 7 and 9). Its appearance today is believed to be little changed from its original construction, being a neoclassical design rendered in large pink sandstone blocks that features a low arched entrance set in a tall blind arch flanked by two pairs of Doric pilasters supporting a full stone entablature. The gate was described in 1891 as a “sort of triumphal arch.” Two bronze commemorative plaques are mounted to the front facade of the gate. One, mounted on the south pier in 1952, honors the students of Columbia University who helped construct the fort in the 1790s. The other, mounted on the north pier in 1976, commemorates John Jay, for whom the fort was named.

The gate is surmounted by a sandstone trophée d’armes sculpture. This is an elaborate grouping of statuary featuring symbols of the republic and equipment of war, including a bald eagle clutching the shield of the United States, a liberty cap atop a fasces, flags, guns, a mortar, and cannon balls. Documentation of the sculpture is surprisingly scarce. No records have yet been found of its commission or execution, nor has a name or date been identified on the work itself. A popular legend recounted by Edmund B. Smith in his 1913 history of Governors Island identifies the artist as a “prisoner who was a stonecutter by trade” who worked on his masterpiece at some unspecified time. Early plans of the fort and its gate dated 1801 through 1839 give no indication that a sculpture existed in those years.

The earliest pictorial image of the sculpture is an engraving published in *Harpers Weekly* on May 6, 1861, several months before the first Confederate prisoners were received on Governors Island (cover and fig. 28). The earliest known photograph is dated 1864, which shows the eagle with no wings and only the lower portion of the flag on the south side (fig. 30). Whether the sculpture had been left partially completed, or was damaged at some later date, is not known. Even more curious is the fact that the sculpture remained in this state for more than 30 years, as evident in later photographs dated 1890 and circa 1898 (figs. 43 and 49). New wings and the upper portion of the flag had finally been added by 1913 (fig. 55). The left wing disappeared again sometime between 1951 and 1982- 83 (figs. 73 and 85), and it has yet to be replaced. A recommendation made by the U.S. Coast Guard in 1992 to replace the sculpture with a replica made of “cast stone” was never carried out.

Guardhouse, pp. 202-203:

A brick Guardhouse abuts the upper gate of Fort Jay on the interior (west) side, where it sits above the sally- port tunnel. Construction of the gate and Guardhouse may have begun as early as 1797 and had been completed by February 1802, when Major D. Wadsworth described “a handsome Gateway with a *Corps de Garde* [Guardhouse].” Colonel Jonathan Williams noted in his “Draft of a Report to the Secretary of War” dated November 1808 that “the Gate” was one of the few structures retained during

the reconstruction of the fort beginning in 1806. Williams may have neglected to mention the Guardhouse because it was considered to be a component of the gate. Early plans showing both the gate and its gable- roofed Guardhouse are dated 1801 (fig. 7) and 1813 (fig. 9). No mention was made of the Guardhouse when the barracks were reconstructed in the 1830s, suggesting that the old Guardhouse was retained at that time. The earliest pictorial view of the existing structure is an engraving showing the south elevation that was published by Harpers Weekly in May 1861 (cover and fig. 28).

The Guardhouse is a small one- story, gable- roofed structure with two rooms in the main story and two unconnected rooms in the basement story that straddle the sally- port tunnel. Original surviving elements include the cut- sandstone foundation walls and steps, upper brick walls laid in Flemish bond, blind arches characteristic of the Federal style at the doorway and window openings, shallow- pitch gable roof, and built- in stone gutters. The foundation and upper walls of the Guardhouse abut the stonework of the gate, leading previous studies to surmise that the Guardhouse was constructed sometime after the gate. While this may have been the case, the documentary evidence mentioned in the previous paragraph suggests that both the gate and the Guardhouse existed by 1802. Alterations have been made to the Guardhouse over the years, such as new wooden floors and plaster walls installed in the main story, as specified on a plan dated 1938 (fig. 72). Four window openings in the main story were enclosed with brickwork, and four window openings in the basement story with brickwork or stone, sometime after 1938. A pair of exterior metal doors replaced earlier doors of unknown appearance sometime in the 20th century. Finally, access to the two basement rooms was removed at some unknown date. Physical investigation of the basements may reveal additional information about the early construction and layout of this early structure.

Numbers were assigned by the U.S. Army to the buildings and structures on Governors Island by 1879. It was not until the mid- 20th century, however, that the small guardhouse received its own number. A plan dated 1964 labels the guardhouse as number 201. This numbering system was retained by the U.S. Coast Guard during the years 1966- 97 and remains in use today.

Appendix B: Artifact Catalog

Dry Moat – North of Bridge Area

Coordinates are meters from the North Datum on scarp; all coordinates are the northwestern corner of the shovel test pit (STP); vertical measurements are cm below ground surface (bgs) from this corner of each STP. The STPs were 0.5 x 0.5 m (1.6 x 1.6 ft) to depths of about 0.5 m (1.6 ft) bgs. All soil was screened. All measurements for stratigraphy were taken in metric units; artifacts were measured in English units where appropriate.

STP 1 (N 0/ E +1.0)

- 28-30 cm bgs #1: Clay pipe stem fragment, 1.4" (3.5 cm) long, bore diameter 0.12" (0.3 cm) (1)
#2: Whiteware sherd, surface spall (early 19th c – Present) (1)
- 30-50 m bgs #1: Clay pipe stem fragment, 1.4" (3.5 cm) long, bore diameter 0.08" (0.2 cm) "ASGOW" (GLASGOW?) on one side, "—OUG—" on the other, likely made by Duncan McDougall of Glasgow, Scotland, between 1847 and circa 1891, (1)
#2: Clay pipe bowl fragments, one with the top edge of the bowl; they cannot be retrofitted to each other (2)
#3: Clear glass bottle base sherd, octagonal bottle, approximately 1.5" (3.8 cm) diameter, maximum dimension of sherd is 1.25" (3.2 cm), opalescent surface suggesting inundation or burial in a wet soil (1)
#4: Glass sherd, color difficult to determine as the surface is covered with gold-colored pigment that is flaking off, gold color appears on flat surfaces and surfaces that have shatter scars, opalescent finish to area under the gold color; maximum dimension of 7 cm; thickness varies; may be a vessel fragment (1)
#5: Clear glass bottle sherds, one is part of a body with varying thickness and has more surface abrasion than the other sherd; the other is part of a bottle neck and is clearer glass (2)
#6: Thin metal ring, 1" (2.5 cm), bottom of a spent cartridge (?)

STP 2 (N 0/ E +2.5)

- 10-20 cm bgs #1: Clear bottle glass sherds (2)
#2: Clear bottle lip fragment, one piece (manufactured with an ABM) (1)
#3: Clear window glass fragment (1)
#4: Natural green bottle glass, bottom of a bottle. Note: Impression "17 C-18037"; possibly a Coca-Cola bottle, but attempts to identify were not conclusive (1)

40-50 cm bgs #1: Light olive green glass flat (bottle?) sherd (1)
#2: Hand-painted blue underglaze porcelain sherd (1)

STP 5 (N -3.0/ E +2.5)

30-50 cm bgs #1: Red brick with name in frog: "DENB" = De Noyelles Brick Company, active 1870 – 1929; found in an area of mixed soils; Note: Brick left at GOIS, not removed from Park

STP 6 (N -1.5/ E +4.0)

50 cm bgs #1: Ferrous metal nail, corroded and bent, approximately 5" (12.7 cm), probably a cut nail (1790-Present) (1)
#2: Green hand-painted shell-edged pearlware sherd, maximum dimensions 1.2 x 0.4 " (3 x 1 cm), (1800-1830) (1)

STP 7 (N -3.0/ E +4.0)

50 cm bgs #1: Whiteware sherd (1820-Present), small, glazed on both sides (1)

Dry Moat – South of Bridge Area

Coordinates are meters from the South Datum on scarp; all coordinates are the northwestern corner of the shovel test pit (STP); vertical measurements are cm below ground surface (bgs) from this corner of each STP. The STPs were 0.5 x 0.5 m (1.6 x 1.6 ft) to depths of about 0.5 m (1.6 ft) bgs. All soil was screened. All measurements for stratigraphy were taken in metric units; artifacts were measured in English units where appropriate.

STP 8 (S 0/ E +1)

30-40 cm bgs #1: Clear/aqua glass sherd, base of bottle, 12-sided bottle, diameter 1.75" (4.45 cm), pontil (1)

STP 9 (S +1.5/ E +1)

40-50 cm bgs #1: Clear glass sherds, shattered into small pieces, possibly part of table service, one part of a base for a vessel (7)
#2: Brown bottle glass sherds, (beer bottle glass, post 1880s?) (2)
#3: Natural green glass sherd, bottle lip fragment, lip not applied.
#4: Clear glass fragment of shot glass, heavy base, shattered top (1)
#5: Bullet, 10 mm diameter, being analyzed (1)

STP 11 (S +3/ E +2.5)

- 40-50 cm bgs #1: Clear glass bottle neck fragment, lip may be applied but the piece contains only a portion of the lip, prior to 1900, (1)
 #2: Clear glass sherd, curved, with two incised lines (measuring marks or decoration?) (1)

STP 13 (S 0/ E +2.5)

- 30-40 cm bgs #1: Clear-aqua glass sherd, bottle fragment, soda or seltzer bottle (?), no impressions on sherd (1)
 #2: Oyster shell fragment, powdery texture to surface. (1)
 #3: Rifle shell casing, center percussion, no primer, rim at base, no apparent inscription, partly crushed end – possibly .45 (1)

STP 14 (S +1.5/ E +4.0)

- 40-50 cm bgs #1: Ferrous metal spike, very corroded, approximately 5.25" (13.3 cm), possibly cut (1790-Present) (1)
 #2: Lock washer, split style, metal, 0.5" (1.3 cm) (1)

Guardhouse Area

This was the area where two 1 x 1-m units were excavated. Vertical measurements were taken from the northwestern corner of each unit. The surface was leveled of debris, loose soil, and vegetation before excavation began; measurements were taken from the leveled, cleared surface.

Unit A

- 0-20 cm bgs #1: Fragments of clear window glass, maximum dimension 2" (5 cm) (2)

Dark soil sample
 About 20 cm bgs

- #2: 1942 Newfoundland penny (1)

Unit B

30-40 cm bgs

- South side of unit #1: Fragments of clear window glass, one more abraded than the others, all are small (under 2"[5 cm] in length) (4)
 #2: Fragments of clear bottle glass (2)
 #3: Natural green bottle neck, shattered, with seam, 20th c (1)
 #4: Roofing nail, modern (1)

Appendix C: Soil Data

Dry Moat – North of Bridge Area

Coordinates are meters from the North Datum on scarp; all coordinates are the northwestern corner of the shovel test pit (STP); vertical measurements are cm below ground surface (bgs) from this corner of each STP. The STPs were 0.5 x 0.5 m (1.6 x 1.6 ft) to depths of about 0.5 m (1.6 ft) bgs. All soil was screened. Sidewalls are similar to the wall indicated, unless otherwise stated. All measurements for stratigraphy were taken in metric units; artifacts are measured in English units where appropriate. All of this area was covered with mowed grass during fieldwork.

STP 1 (N 0/ E +1.0)

0-28	7.5YR 2.5/2 very dark brown silty loam; some small brick fragments in soil
28-30	Transition to next stratum; pipe stem fragment
30-50	10YR 5/4 yellowish brown hard-packed sand; pipe stem and bowl fragments, glass, etc.

STP 2 (N 0/ E +2.5)

0-38	7.5YR 2.5/2 very dark brown silty sandy loam; similar to STP 1 but deeper; glass fragments
39-50	10YR 5/4 yellowish brown silty fine sand, looser than upper stratum; blue-on-white porcelain and olive green glass

STP 3 (N -1.5/ E +1.0)

0-30	7.5YR 2.5/2 very dark brown silty sandy loam
30	Darker soil, some ash and clinkers, piece of coal; not a well-defined lens feature
30-50	10YR 5/4 yellowish brown silty fine sand; mixed at top with soil from stratum above Fewer small brick fragments in soil compared with STP 1 Perhaps this area was washed out and filled

STP 4 (N -1.5/ E +2.5)

0-30	7.5YR 2.5/2 very dark brown silty sandy loam; some clear glass fragments near the surface, cellophane wrapper, unworked piece of schist
30	Some soil mixing
30-50	Narrow banding of soils, perhaps evidence of periodic standing water leaching minerals Soil becomes more orange with depth
50-55	10YR 5/4 yellowish brown sand at bottom of unit

STP 5 (N -3.0/ E +2.5)

0-30	7.5YR/ 2.5/2 very dark brown silty sandy loam
30	Darker soil, like crushed coal, but not in a distinct lens or horizon, perhaps a dumping or filling episode, but later examination found no coal
30-50	10YR 5/4 yellowish brown sand (very close match to Munsell Color Chart) At 30-50 there was some mottling, with a brick fragment with the lettering "DENB" (1870-1929)
Probe	The bottom of the unit was probed with a trowel on the northern and western walls; some plastic fragments, palm-size concrete fragments (1930s-style with pebbles), and a small piece of mica schist (Manhattan schist); may be a deposit of trash or demolition material mixed with soil here in a low spot or this material sank in place

STP 6 (N -1.5/ E +4.0)

0-25	7.5YR 2.5/2 very dark brown silty sandy loam
25-50	Mottled soil fading into more orange soil
50+	10YR 5/4 yellowish brown fine sand Pearlware fragment around 50 cm

STP 7 (N -3.0/ E +4.0)

0-25	7.5YR 2.5/2 very dark brown silty loam
25-50	Mottling, trending down to 10YR 5/4 silty sand
Probe	Trowel probe at bottom of unit revealed soil similar at this depth to that seen in other units here Piece of sandstone (8 inches long, 4-5 inches wide, and 1 inch thick, not worked, at 47 cm bgs (not saved) This unit is close to a pier supporting the bridge

Dry Moat – South of Bridge Area

Coordinates are meters from the South Datum on scarp; all coordinates are the northwestern corner of the shovel test pit (STP); vertical measurements are cm below ground surface (bgs) from this corner of each STP. The STPs were 0.5 x 0.5 m to depths of about 0.5 m bgs. All soil was screened. Sidewalls are similar to the wall indicated, unless otherwise stated.

STP 8 (S 0/E +1)

0-20	7.5yr 2.5/2 very dark brown silty sandy loam; close to Munsell but not as exact as some other units to the north
20-40	Orange and brown mixed soils, perhaps mixed by leaching; clear and aqua glass sherds (part of vessels?)
40-50	10YR 5/4 yellowish brown sand, some dark cinders and coal

STP 9 (S +1.5/ E +1)

0-20 7.5YR 2.5/2 very dark brown silty fine sandy loam

20-40 Mixed soils

40-50 10YR 5/4 yellowish-brown fine silty fine sand

Glass and a bullet in 40-50 cm

Surface here is inclined: the southern edge of this unit is about 10 cm (4 in) higher than the northern edge of STP 8

STP 10 (S +3.0/ E +1.0)

0-50 Soil is similar in color to those nearby (7.5YR 2.5/2 very dark brown) but has some darker areas (7.5YR 3/3 very dark gray); it is ashy in texture, consistent in appearance to bottom of unit; perhaps some type of fill

Surface here is inclined: the southern edge of this unit is about 10 cm (4 in) higher than the northern edge of STP 9

STP 11 (S +3/ E +2.5)

0-30 7.5YR 3/3 dark gray silty fine sand

30-35 Mottled soil

35-50 Apparently a fill material mixed with lowest stratum soil

50+ 10YR 5/4 yellowish brown silty fine sand

Glass at 40-50 cm

Western edge of this unit is about 7.5 cm (3 in) below the eastern edge of STP 10

STP 12 (S +1.5/ E +2.5)

0-35 7.5YR 3/3 very dark gray, probably fill, like that in STP 11 (upper stratum)

35-50 10YR 5/4 yellowish brown silty fine sand

STP 13 (S 0/ E +2.5)

0-40 7.5YR 3/3 very dark gray fill-like material, similar to this colored soil in nearby units; brick fragments and clam shell in fill material

40-50 10YR 5/4 yellowish brown fine sand

Rifle shell casing 30-40 cm

STP 14 (S +1.4/ E +4.0)

0-50 7.5YR 3/3 very dark gray silty sand

Grades to lighter color

Ferrous artifacts at 40-50 cm

Guardhouse Area

This was the area where two 1 x 1-m units were excavated. Vertical measurements were taken from the northwestern corner of each unit. The surface was leveled of debris, loose soil, and vegetation before excavation began; measurements were taken from the leveled, cleared surface.

Unit A

- 0-9 Very mixed, dry-dusty soils
- 9-18 10YR 5/4 yellowish brown silty fine sand
- 18-40 Dark mixed soils, with orange and grown fill, sandstone fragments, window glass
Concrete, worked stone, and bricks

Unit

- 0-66 Dry-dusty soil at top
Various depths to this unit, with concrete and tar-like substance at bottom
Belgian blocks loosely placed in unit