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Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area

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Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area
Staten Island, New York

Site History

Existing Conditions

Analysis & Evaluation

Treatment

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National Park Service, Boston, Massachusetts, 2008

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Cover Image: Painting of Battery Weed looking east from Fort LaFayette in the Narrows, by artist and Army soldier, Seth Eastman, c.1872. Collection of the U. S. Army Center for Military History, reproduced from *Prints & Posters, The Eastman Forts,* http://www.history.army.mil/html/artphoto/pripos/eastman1.html (accessed February 2008).

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INTRODUCTION

Battery Weed, a massive granite fort built between 1847 and 1864 as a component of a larger military reservation, guards the easternmost point of Staten Island at the entrance to New York Harbor from the Atlantic Ocean. Through the early twentieth century, this prominent headland was critical to harbor defenses and navigation, and also attracted many visitors with its panoramic views. Over the course of a century, the fort and its surrounding headland were adapted in response to changes in America's systems of coastal defense. This historic evolution remains visible in the landscape, although obscured in areas by vegetation and structural deterioration.

Through historical research and evaluation of existing conditions, this cultural landscape report (CLR) documents how the Battery Weed headland has changed over time and the historical and physical contexts that influenced those changes. It describes existing conditions, and evaluates the historic significance and character of the landscape. The report also provides recommendations on enhancing the landscape's historic character in the context of other park goals. In particular, the report will inform critically needed repair and improvement projects, including a planned rehabilitation of Battery Weed's seawall and dock. The National Park Service has initiated this cultural landscape report in advance of this and other projects to ensure appropriate treatment and management of the cultural landscape.

PROJECT SETTING

The Battery Weed headland lies along the western shore of the Narrows, the water passage to New York Harbor where the landforms of Staten Island and Long Island lie closest together. (Figure 0.1) Here, the granite fort holds a commanding position below a 125-foot high bluff, although now greatly overshadowed by the adjoining Verrazano-Narrows Bridge completed in 1964. Battery Weed was once part of a system of fortifications protecting the Narrows that included Fort Tompkins on the bluff above, and Forts Hamilton and Lafayette on the eastern or Long Island side.

The Battery Weed headland is part of Fort Wadsworth, a military reservation that was transferred to the Department of the Interior in 1994 as part of the Staten Island Unit of Gateway National Recreation Area. (Figure 0.2) Gateway, which encompasses numerous former military and city park lands in lower New York Harbor and adjoining coastal areas, was established by Congress in 1972 along with Golden Gate National Recreation Area in San Francisco as the first park system specifically for urban recreation. The primary purpose of Gateway

National Recreation Area is to preserve and protect, for the use and enjoyment of present and future generations, an area possessing outstanding natural, historic, and recreational features.[1]

Battery Weed is at the eastern edge of Fort Wadsworth, situated below the site's other major fortification, Fort Tompkins. (Figure 0.3) The shoreline is lined by earthen batteries, most of which are hidden beneath vegetation, while the interior or upland portions historically contained support facilities such as housing and mess halls. Much of this area was redeveloped during the 1980s. Today, facilities in this area are used by the park for offices, staff housing, and a visitor center, and by other agencies including the U. S. Coast Guard and Army Reserve.

PROJECT SCOPE AND METHODOLOGY

A cultural landscape report, as defined by the National Park Service, is the primary guide for the management of a cultural landscape. The report documents the physical history and existing conditions of the landscape, evaluates its historic character, and recommends treatment strategies to guide short and long-term management.

This cultural landscape report focuses on the National Register-listed Battery Weed and its immediately surrounding landscape that forms a headland extending into the Narrows of New York Harbor and encompass a series of viewsheds. (Figure 0.4) The boundaries extend from the overlook and stone wall along the top of the slope bordering Fort Tompkins, east to the seawall along the shore, and north and south encompassing portions of Batteries Bacon and Catlin. The project area includes several ancillary buildings and structures, most of which are related to a mine (torpedo) defense system that was deployed in the Narrows. The project boundaries do not correlate to any historic property or use boundaries.

The site history chapter of this report tells the story of the development of the landscape within the project study area within the historic contexts of coastal defenses, Fort Wadsworth, and development of Staten Island. The existing conditions, analysis & evaluation, and treatment chapters focus on the project study area while addressing the larger Fort Wadsworth context only to the extent that it concerns management of the Battery Weed headland. The report addresses all landscape features within the project study area such as buildings and structures including Battery Weed, the Torpedo Storage Building, and the north dock; circulation such as the roads and mine railway; topographic features including batteries and the engineered slope above Battery Weed; and natural

systems, notably successional woods and invasive vines that have obscured historic buildings and structures.

This scope of work follows the four main objectives outlined in the project agreement for this report. The first objective is to document the historic design and evolution of the landscape to inform management decisions regarding the nature and appropriateness of proposed rehabilitation efforts to minimize the loss or disturbance of significant characteristics, features, and materials. The second is to document the changing historical appearance of character-defining site features, notably vegetation, circulation, topography, and the dock/seawall. The third objective is to provide limited contextual documentation on coastal fortifications and other contexts as appropriate in order to provide documentation that supports park consultation responsibilities under Section 106 of the National Historic Preservation Act of 1966. The fourth objective is to recommend treatment strategies to guide the design and engineering for upcoming construction projects as well as the long-term management of the cultural landscape.

The organization of this report is based on *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques* (NPS, 1998). This report is comprised of CLR Part I including site history, existing conditions, and analysis and evaluation, and Part II addressing treatment. The site history and existing conditions chapters document the physical evolution of the landscape in narrative and graphic form. The analysis and evaluation chapter draws on the body of historic research to identify a period of historic significance. It also examines the existing conditions of historic features to determine their status as contributing or non-contributing to the historic character of the cultural landscape. Treatment, the fourth chapter, provides conceptual-level recommendations that reflect the findings of the analysis and evaluation, framed within the context of broader park planning efforts.

This report has been prepared to complete a "thorough" level of historical research, as defined by NPS DO-28, which includes review of all available historical resources including both primary and secondary sources. Primary materials included construction documents, plans, maps, photographs, and written documentation from the collections of Gateway National Recreation Area, the National Archives, the New York Public Library, the New-York Historical Society, and the State Island Institute of Arts and Sciences. A wealth of secondary material has been compiled through the work of many researchers over the years relating to the character and history of Fort Wadsworth and the Battery Weed headland. Sources specific to Battery Weed included Frederick R. Black's 1983 "Historic Resource Study, A History of Fort Wadsworth, New York Harbor,"

and a 2006 URS Corporation report, titled "Phase IA Archeological Investigation Rehabilitate Battery Weed Seawall and Dock Fort Wadsworth Unit, Gateway National Recreation Area Staten Island New York." This report was intended primarily to document the history and prehistory of the seawall restoration project area, and included much relevant material to the site history in the form of maps, drawings and historic photographs. Both the Staten Island Institute of Arts and Sciences and the New York Historical Society provided many nineteenth century etchings and drawings depicting the Narrows. Research included the review of a portion of the Staten Island Institute's collection of artwork and porcelain pieces featuring historic views of the Narrows and Fort Wadsworth. Archeological and natural history collections at Staten Island Institute were also reviewed.

Other sources of information proved helpful in telling the story of Battery Weed in the broader context of Staten Island history, including Henry G. Steinmeyer's 1987 *Staten Island 1524 - 1898*. Early maps, plans, etchings, and documents from public and private collections compiled from original sources were found in a six volume set titled *The Iconography of Manhattan Island 1498 - 1909*, by I.N. Phelps Stokes.

The findings of this report are graphically documented on a series of plans pertaining to the site history, existing conditions, analysis and evaluation, and treatment. A combination of methods was employed in the development of the plans. Historic maps, plans, and photographs were examined and compared to determine the changes that occurred in the landscape over time. Field inspections were conducted to determine the existence and condition of features in the landscape.

TERMINOLOGY

The long history of the Battery Weed headland has left a legacy of changing place and feature names that is often confusing. The table below lists these changes and the dates when each was in use, keyed to the map in Figure 0.5. Obscure military terminology is defined in Appendix B.

CHANGING NAMES IN THE BATTERY WEED HEADLAND AND FORT WADSWORTH			
Name	Map Key	Refers To	Dates Used
Flagstaff Hill	A	Signal station at the top of the bluff south of Fort Tompkins; same general location as Stag Stake and Signal Hill	c.1779
Van Deventer's Point	B	Point of land south of the Battery Weed headland	c.1790 – 1890
Stag Stake	A	Site at the top of the bluff; same general location as Flagstaff Hill and Signal Hill	c.1790
Signal Hill	A	Signal station at the top of the bluff; same general location as Flagstaff Hill and Stag Stake	c.1812
Battery Point	C	The Battery Weed headland	c.1800
Fort Tompkins	D	Original Fort Tompkins	c.1807 – 1859
Fort Tompkins	E	Present Fort Tompkins	1859 – present
Water Battery	F	Original Fort Richmond	1809 – 1846
Fort Richmond	F &G	Original Fort Richmond & present Battery Weed; same as the Water Battery	1809 – 1865
Fort Wadsworth	G	Present Battery Weed	1865 – 1902
Fort Wadsworth	H	Entire military reservation	1902 – present
Battery Weed	G	Present Battery Weed	1902 – present

SUMMARY OF FINDINGS

HISTORICAL OVERVIEW

Human settlement on Staten Island dates back to the Paleo-Indian period 10,000 years ago. Prior to the late seventeenth century, Staten Island was home to the Lenape people, also known as the Delaware, who were part of the larger Algonquian linguistic group that occupied the East Coast from the Chesapeake Bay to Maine. European colonial settlement of the land began in c.1662 with the Dutch, followed by the British with English Crown land grants for agricultural settlement later in the century. Sometime between 1776 and 1783, the British constructed an artillery post near the present site of Battery Weed. By 1794, following American independence, the State of New York began to acquire lands at the Narrows for defensive works though none was constructed during the period from 1794 to 1807 that military historians identify as the First American System of coastal fortifications.

During the period between 1809 and 1846 corresponding with the Second American System of coastal fortifications, the Battery Weed headland witnessed its first substantial military fortification. By 1809, a new fort in a half circle of solid masonry, along with a cluster of buildings and a new wharf (dock) north of the fort, was under construction by the State of New York along the shoreline of the Narrows. The second system fort, on the present site of Battery Weed, was named Fort Richmond, for Richmond County (Staten Island), and was also known as the Water Battery.

The federal government undertook a new program of coastal defense between 1846 and 1867, known as the Third American System. By February of 1847, the forty-seven acre state military reservation at the Narrows passed to federal ownership. The U. S. Army almost immediately began construction of the new Fort Richmond, following the Third American System, but the structure would not be complete for nearly another two decades. By the Civil War, the fort was substantially complete and readied for protection of New York Harbor. In 1865, the War Department officially changed the name of Fort Richmond to Fort Wadsworth in honor of Brevet Major General James S. Wadsworth of New York, who died from wounds he received during the Battle of the Wilderness in Virginia.

In 1876, the new Fort Tompkins was completed on the bluff above Battery Weed, marking nearly three decades of continuous construction activity at the federal military reservation. However, by this time both forts had become in large part militarily obsolete due to technological advances in heavy ordnance. Although no longer used, the armaments remained in place on site. With the heavy construction finally complete and peacetime conditions prevailing, the Battery Weed headland became a favorite spot for informal public use, functioning effectively as a public park. Visitors picnicked along the top of the slope and strolled along its walks and on the seawall around Battery Weed, enjoying the unsurpassed panoramic views of New York Harbor.

Beginning in 1887, the modernization of the harbor defenses brought extensive changes to the landscape of the Battery Weed headland. The assembly of a special board by President Cleveland, chaired by Secretary of War William C. Endicott, to address the state of the nation's military readiness resulted in what is known as the Endicott Era in coastal defense. The Endicott Era brought changes to the Battery Weed headland including the addition of new concrete and earthen batteries, a lighthouse on Battery Weed; and cable tanks, storage buildings, and railways associated with a submarine mine (torpedo) defense system. In 1902, the name of the Fort Wadsworth was changed once again to Battery Weed in honor

of Brigadier General Steven H. Weed, killed at Gettysburg. The name Fort Wadsworth was reassigned to the entire military reservation.

With the end of World War I in 1918, the garrison at the Fort Wadsworth reservation diminished dramatically. In 1919, command of the post was transferred from the Coast Artillery Corps to the Infantry and by 1927, only fourteen enlisted men resided on site. In the mid-1930s, the Works Progress Administration (WPA) began a series of projects at Fort Wadsworth. These may have included construction of a concrete seawall and construction of a stone wall along the overlook where visitors often came to admire the panoramic view of the harbor. With the onset of World War II, Fort Wadsworth again prepared for military action. Between 1942 and 1944, the Army made plans to deploy a series of submarine mines (torpedoes) across the Narrows by vessels operating from the site of Battery Weed, although it is not known if this ever occurred. In 1942, the last manned battery, Battery Catlin located north of Battery Weed, was taken out of service. Until 1945, Fort Wadsworth was home to the Harbor Entrance Control Post (HECP) with an observation tower located on top of Fort Tompkins.

Fort Wadsworth remained militarily active during the postwar period, but Battery Weed and its surrounding headland were largely abandoned. Along with lack of use came marked changes in the character of the landscape, notably the growth of trees on formerly maintained open ground and deterioration of buildings and structures. Between 1959 and 1964, the Verrazano-Narrows Bridge was constructed across the Narrows with its approach crossing the center of Fort Wadsworth south of Battery Weed. The construction of the bridge resulted in a marked change to the setting of the Battery Weed headland, looming high to its south and obstructing the once panoramic views. While the bridge was under construction, all wood buildings were removed from the headland, and in 1965, the lighthouse on the top of Battery Weed was decommissioned.

While Fort Wadsworth was home to the radar control center for the area's NIKE Missile System until the 1970s, no features were within the Battery Weed headland, which remained at most a storage area. In 1972, federal legislation was drafted to establish Gateway National Recreation Area and Fort Wadsworth was included as a future recreation area, but remained under military administration and use. Around this time, overgrowth was removed from the area within and immediately surrounding Battery Weed, but the rest of the headland continued to become overgrown. From 1979 to 1994, Fort Wadsworth served as the headquarters of the New York Navy Yard and was extensively redeveloped with new facilities. The Navy made little use of the Battery Weed headland, which suffered fire damage to two buildings and continued to become overgrown with woods.

In 1995, the administration of the Battery Weed headland, as a part of Fort Wadsworth, was transferred to the National Park Service within the Department of the Interior. In the years following this transfer, the park cleared away some of the woods to reestablish the view of New York Harbor, stabilized buildings and structures, and installed interpretive waysides and benches.

ANALYSIS AND EVALUATION

Battery Weed was listed in the National Register of Historic Places in 1972 for significance in the areas of military history and architecture. This report recommends that the landscape of the Battery Weed headland—including the north dock, mining defense complex, adjoining earthen batteries, engineered slope, and overlook—be documented as contributing to the significance of the property in the area of military history under Criteria A and C. It is also recommended that the period of significance for Battery Weed be revised to extend from 1847, the beginning of construction of the Third System fort, through 1945, the close of World War II when active military use of the site ceased. Future National Register documentation should incorporate the Battery Weed headland into a larger property encompassing National Register-listed Fort Tompkins and adjoining portions of Fort Wadsworth that retain historic integrity.

Many features contribute to the historic character of the Battery Weed headland landscape. Spatial features include the moat space, the parade ground within Battery Weed, and the overlook space. Circulation features include the mine railway, overlook promenade, Battery Weed Road, and the dock road. Panoramic views from the overlook and waterfront are also contributing features. Buildings and structures include Battery Weed, the Torpedo Storage Building, the second mine casemate, Battery Catlin parados (magazine), the overlook stone wall, concrete block garage, small concrete shed, north dock, seawall, Battery Bacon north gun emplacement, the Coincident Range-Finder (CRF) station, and slope retaining wall. Topographic features that define the historic character of the landscape include the engineered slope above Battery Weed, and the earthworks of Batteries Catlin and Bacon. Contributing vegetation features include the specimen trees along Battery Weed Road and Hudson Road, and the parade ground lawn. Small-scale features include the parade ground munitions pads, cable testing trough, parade ground flagpole, dock bollards, and dock utility pole.

Although many features have been altered since 1945, there have been relatively few lost altogether. These include six cable tank buildings, a testing tank, and a torpedo loading room building used in the mining defense complex, and three buildings on the north stone dock. There are several non-historic features that

detract from the historic character of the landscape, most notably successional woods and invasive vines that cover formerly open ground and batteries, and chain-link fencing that closes off historic circulation patterns. Major condition issues that detract from the historic character of the landscape include fire damage to the Torpedo Storage Building, loss of the roofs on the Battery Weed magazines, removal of sections of mine railway, collapse of the second mine casemate, loss of the wood extension on the north stone dock, and probable loss of sections of the slope walks.

TREATMENT

The recommended treatment approach for the Battery Weed landscape is Rehabilitation, with a treatment date of 1945 to serve as a benchmark for managing the cultural landscape, corresponding with the recommended end of the period of significance. The following sections summarize treatment recommendations by landscape character area.

Overlook and Slope

The overlook and slope character area extends from the center line of Hudson Road to, but not including the Torpedo Storage Building at the base of the slope and along the west edge of Battery Weed Road to Battery Bacon. Clearing of successional woods and invasive vines on the slope would dramatically enhance the historic character of the landscape and return the full extent of the panoramic views of New York Harbor. Redesign of the overlook terrace with added interpretive elements and lawn, would better recall the informal public use of the overlook dating back to the nineteenth century. Reestablishment of the slope walks would return a distinctive feature to the landscape and if returned to active use, give visitors a dramatic circulation route to Battery Weed. Eroded areas of the slope will require correction of drainage conditions.

Fortress Grounds

The fortress grounds character area encompass the lower terrace including Battery Weed, the parade ground, Battery Weed Road, the dock road, Torpedo Storage Building, Battery Catlin, and Battery Bacon. In this area, the removal of successional and invasive vegetation and the reestablishment of low-growing grasses and native shrubs on and around the batteries will help to reestablish historic open spatial character of the landscape. A systematic approach to preservation, restoration, and reconstruction of the mine defense complex is also important. Because little is known about some components of the mining defense complex, further research and archeology may be helpful to inform future management and enhance interpretation.

North Dock and Seawall

This area includes the bulkhead and dock at the end of the dock road, and the seawall and waterfront area between the east curtain wall of Battery Weed and the Narrows. As is presently being planned, the seawall warrants reconstruction of collapsed and unstable sections. Consideration should be given to potential impacts from projected rises in sea levels. The adjoining moat space warrants treatment to enhance public understanding of its historic functions. This could be accomplished by contemporary additions to recall the moat's original water-filled character. It would also be appropriate to reestablish public circulation along the moat space and seawall surrounding Battery Weed. The north dock should be retained as part of its proposed rehabilitation for active park use. The addition of new facilities, such buildings or visitor shelters, should follow the footprint of the dock as it existed in 1945.

ENDNOTES

1 Legislation quoted in *Draft Site Management Plan Environmental Assessment Fort Wadsworth Gateway National Recreation Area New York/New Jersey* (U.S. Government Printing Office, NPS D-200, 1995), 1.

Figure 0.1: Overview of Battery Weed looking northeast in 2006 across the Narrows toward Brooklyn with Manhattan in the distant upper left and the Verrazano-Narrows Bridge on the right. State University of New York College of Environmental Science and Forestry (SUNY ESF).

Figure 0.2: Map of Gateway National Recreation Area showing Battery Weed at Fort Wadsworth within the Staten Island Unit. The map also indicates the other park sites in green. National Park Service, "The National Parks of New York Harbor" park brochure (Government Printing Office, 2004), annotated by SUNY ESF.

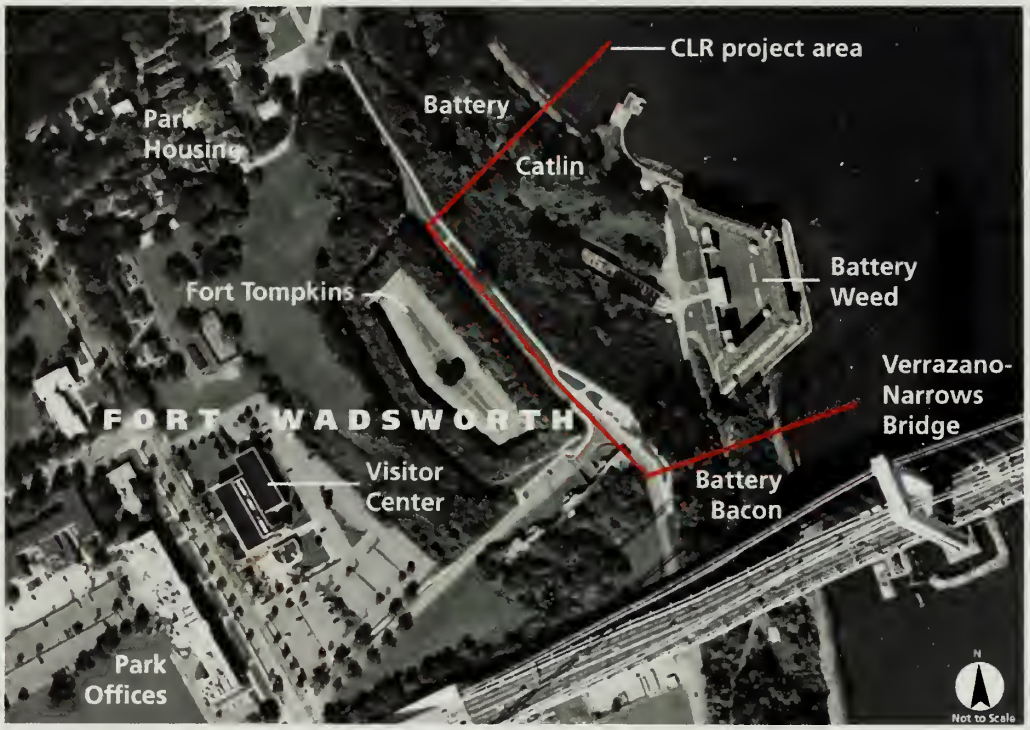

Figure 0.3: Aerial photograph of Fort Wadsworth showing the Battery Weed headland CLR project area and adjoining Verrazano-Narrows Bridge and major features of the former military reservation. USGS aerial photograph, c.2007, reproduced from Microsoft Live Search, annotated by SUNY ESF.

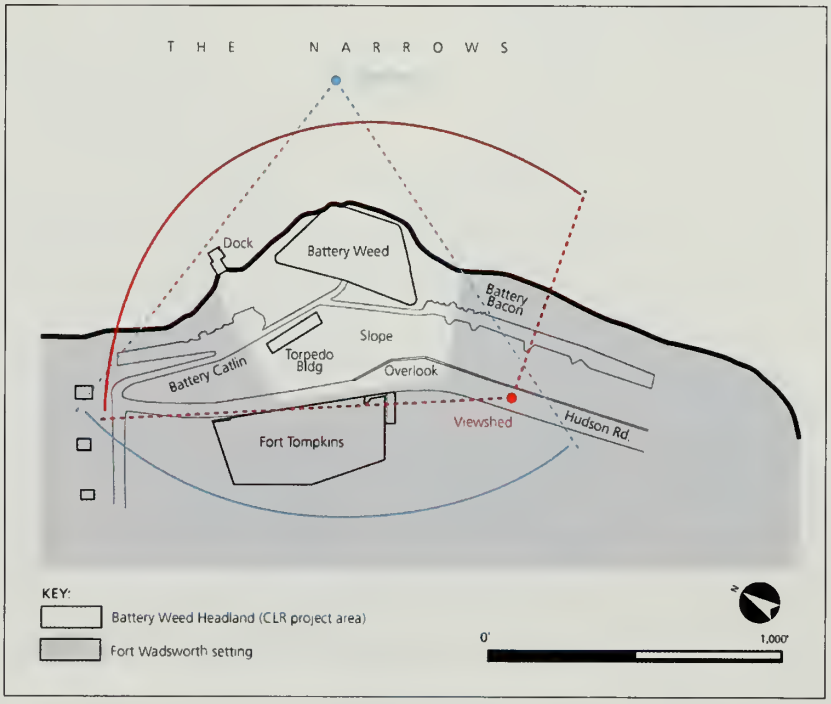

Figure 0.4: Diagram showing the Battery Weed headland CLR project area and its immediate setting in Fort Wadsworth. The project area incorporates the headland at the narrowest part of the Narrows, and is within two key viewsheds. SUNY ESF.

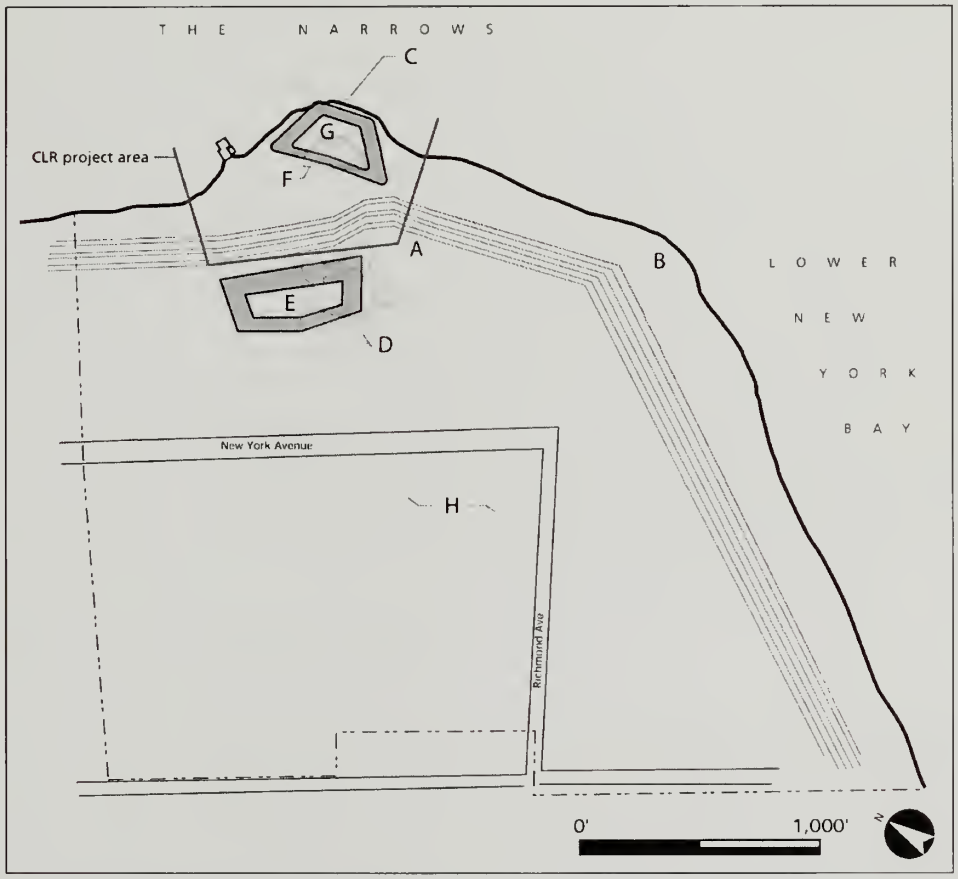

Figure 0.5: Site plan of Fort Wadsworth showing features keyed to the table "Changing Names in the Battery Weed Headland & Fort Wadsworth" (page 5). SUNY ESF.

I. SITE HISTORY

NATIVE ENVIRONMENT AND COLONIAL SETTLEMENT, PRE-1809

Over many centuries, natural processes and physiographic events have shaped the coastal landscape of Staten Island and endowed it with a wealth of historically important resources both cultural and natural. Landform and habitat changes brought by rising sea levels resulted in the creation of inland marshes and supported a diverse collection of plant and animal species. From the time of the earliest sightings of Staten Island by European explorers, the headland at the western bank of the Narrows has held great strategic importance. Colonial agricultural settlement of the area by the Dutch beginning c.1662 included the development of farmsteads featuring simple wooded structures and furrowed fields. Beginning in the mid-eighteenth century, the long and strategic prospect offered from the heights of the bluff above the bay began to overshadow the agricultural value of the land. The vantage point from the bluff above the bay became the site of a semaphore station and lookout as the shipping trade expanded in the region. Recognition of the importance of the vantage point from this landscape led to a continuing effort to protect the entrance to one of the most important cities and trading centers of a young nation.

NATURAL HISTORY

From the time of the retreat of the last great ice sheet, the Laurentide Glacier, approximately 12,000 years ago, the landscape of the Battery Weed headland has remained an index of natural history.[1] The Ronkonkoma and Harbor Hill moraines, terminal deposits left by the retreating glacier composed of boulders, gravel ridges, striated rock, and surface till, form the heights of the New England south coast islands stretching from Cape Cod to Staten Island. (Figure 1.1) These moraines once acted as natural dams holding back glacial melt-water in a series of great lakes to the north. During a period of global warming, the flow of water from the north breached an area of the morainal dam and carved a deep chasm through the till, from the Hudson Highlands, south of the Catskills, to the mouth of the Atlantic Ocean at the site of Battery Weed on the Narrows of New York Bay.[2]

Although the site of Battery Weed is located within the Atlantic Coastal Plain physiographic region, which is generally characterized by level to gently sloping terrain, the extensive glacial deposits forming Staten Island resulted a much more varied topography.[3] Daily tidal flows through the Narrows, to the present day, have eroded the moraine with a water depth in the Narrows of one hundred feet to bedrock.[4]

A formation consisting of a scatter of materials such as sandstones, siltstones and schists in a variety of sizes from very large boulders to small stones and top soils, was left behind at the bluff above Battery Weed because of the carving out of this morainal dam. Over the many centuries, the effects of wind and water further shaped the bluff, eroding away the loose material, and exposing large boulders. This glacial and weather-carved landscape, although it has since been smoothed out and reshaped, remains evident in the steep drop-off from the crest of the bluff above Battery Weed to the waters edge below.

The location of the Battery Weed at the head a major river system and along the coast of the Atlantic Ocean resulted in a diverse ecology. The paleo-environment (pre 8,000 Before the Common Era/BCE) was likely dominated by mixed tundra and spruce woodlands supporting herds of large fauna.[5] During the warming of the Early Archaic period (8,000 BCE - 6,000 BCE), rising sea levels brought environmental changes to the landscape in the form of large inland marsh areas, and a predominance of pine-oak forests.[6]

NATIVE AMERICAN HABITATION

The ecological changes that resulted from broad environmental trends after the retreat of the glacier led to diverse and abundant fauna that supported Native American hunter-gatherer groups. Until late in the seventeenth century, Staten Island was home to the Lenape people, known by Europeans as the Delaware, who were part of the larger Algonquian linguistic family that lived on the East Coast from Maine to the Chesapeake Bay. Archeologists have unearthed projectile points, ceramic remains, and shell middens dating to 3,000 BCE, evidence of Lenape use of the available natural resources near the Battery Weed headland.[7]

The Lenape people called Staten Island *Aquehonga-Monacknong*, or *Monacnong*, meaning enchanted woods.[8] Historian George W. Hilton noted in a 1964 publication that Native Americans also called the island *Eghquaons*, meaning high sandy banks.[9] By any name, the island was host to a prosperous native culture. The Lenape were hunters and fishers harvesting an abundance of oysters from the shallow beds off the shores of the island. Although it is unknown precisely where, the Lenape also made substantial woodland clearings for the cultivation of corn (maize), beans, pumpkins, and tobacco. They made hooks of bone and wove hemp nets for fishing. The Lenape used rushes, grasses and husks to make baskets and mats, and a variety of island plants and other materials were used for medicinal and ceremonial purposes.[10]

EUROPEAN EXPLORATION AND COLONIZATION

European discovery of Native American during the sixteenth century, followed by early seventeenth century Dutch attempts at agricultural settlement, began years of conflict over rights to the land. Commissioned by France to find passage to China, Italian Commander Giovanni da Verrazano anchored his vessel, the Dauphine, off Staten Island in April of 1524. He reported that oysters and fish were plentiful, and bears, turkey, wolves, fox, beaver, and muskrat were known to be on the island.[11] Verrazano's report is the first known written description of Staten Island: "...this region which seemed so commodious and delightful, and which supposed must also contain great riches, as the hills showed many indications of minerals."[12] A 1636 map of New Netherland and New England illustrates the abundant resources discovered in early explorations of the new world. (Figure 1.2)

Explorations along the eastern seaboard of the United States and up the Hudson River brought several early navigators to the shore of the Battery Weed headland. (Figure 1.3) In 1609, Henry Hudson, an English navigator employed by the Dutch West India Company, anchored his vessel the Half Moon in the Narrows off of Staten Island before embarking on his explorations of the Hudson River. Henry Hudson is credited with naming the island Staaten Eylandt in honor of the States-General, the governing body of Holland. Hudson's mate on the Half Moon wrote in his journal of being welcomed by the native people, "well-dressed in deer skins who brought green tobacco in trade for knives and beads. [They were said to] possess yellow copper and great stores of maize or Indian wheat...The country is full of great tall oaks."[13]

Settlement by the Dutch began almost immediately following Hudson's reports home. The Dutch established a settlement named New Amsterdam on the southern tip of Manhattan Island, which reached a population of two hundred by 1626.[14] (Figure 1.4) The government of Holland soon attempted to colonize nearby Staten Island by offering patroonships (large tracts of land granted for settlement) to wealthy directors of the Dutch West India Company and requiring them to bring farm workers and their families with them.[15] Although repeated attempts at settlement were made during the period between 1639 and 1661, none was successful. The first Patroon, Michael Pauw, was granted all of Staten Island and part of New Jersey by the Dutch West India Company in 1630. Pauw made no attempt to colonize the land and apparently relinquished his rights in 1637. Captain David Pietersz de Vries, a prolific international maritime trader, received land rights on Staten Island soon after. In 1639, he sent a few families to settle and established a farm complex of his own, known as a bouwerij (the Bowery) by the Dutch, in the area of the present Tompkinsville two miles north

of Battery Weed. The farm was attacked and destroyed by the Lenape in 1641.[16] Another grant was made to Cornelius Melyn who was granted all of Staten Island except for the De Vries farm. Although Melyn established a colony of about forty settlers approximately one mile south of the present Battery Weed site in 1642, tensions between the Lenape and the settlers led to abandonment of the settlement by 1643. Several violent incidents occurred between the Dutch settlers and the Lenape in the early years of colonial settlement, resulting in casualties of hundreds of people among both groups. In a particularly disastrous massacre known as The Peach War of 1655, a Lenape woman was killed by a farmer named Van Dycke for allegedly stealing a peach from his orchard. The Lenape people avenged her death with an attack on New Amsterdam where they killed Van Dycke. The Lenape were then forced to retreat to Staten Island where they proceeded to destroy Melyn's entire colony. Following this incident, most of the Lenape people left the island, retreating to a mainland area of what would later become New Jersey.[17]

It was not until seven years later, in 1662, that the first permanent Dutch settlement was established approximately one mile south of Battery Weed at South Beach. The settlement, later known as New Dorp, was established in an area of fields suitable for the planting of grain with ample room for the pasturage of cattle, and with a creek that gave access to the lower bay.[18] A record of the explorations in 1679 of two Dutch visitors to the island, Jaspar Dankars and Peter Sluyter, contains a description of a climb up a steep bluff along the eastern shore of Staten Island where the two became lost in the woods before they managed to make their way back to the shore, not far from where they had started their ascent.[19] This account suggests that in 1679, portions of the bluffs along the eastern shore of the island near Battery Weed were thickly wooded.

As the first Dutch colonists were settling in on Staten Island in 1664, King Charles II of England made a gift of the Dutch territories of North America to his brother James, the Duke of York. The agreement allowed the Dutch to remain unharmed, with original rights and uses to remain intact.[20] Following James' accession to the throne of England, and after the Duke of York's purchase of Staten Island from the Lenape on April 13th, 1670, English Crown Land Grants were made to various individuals covering every acre of land on Staten Island. The records of the State of New York disclose a large number of Crown Land Grants on Staten Island that were subject to annual quit-rents, which were fees payable by the grantee to England.[21] A map prepared in 1907 shows colonial land patents dating from 1668 to 1712 in the area of the future site of Battery Weed. An unpatented thirty-acre area marked "F. Walton" appears to be on or adjacent to the Battery Weed headland, the earliest indication of ownership. (Figure 1.5) By the mid-eighteenth century, settlements on Staten Island had grown sufficient to support

at least four villages, with a ferry on the eastern shore to the north of the Battery Weed headland. Here, the Narrows was one of the most important physiographic place on Staten Island, shown prominently on maps of the period along with primary settlements. (Figure 1.6)

Finnish naturalist Peter Kalm (after whom Carl Linnaeus named mountain laurel *Kalmia latifolia*) visited Staten Island in c.1748 and described the colonial island landscape as:

> *...extremely pleasing, as it is not so much intercepted by woods, but offers more cultivated fields to view. Hills and vallies* [sic] *still continued, as usual, to change alternately. Near every farm house was an orchard. Cherry trees stood along the enclosures round corn fields. The corn fields were excellently situated, and either sown with wheat or rye. They had no ditches on their sides, but (as is usual in England) only furrows, drawn together at greater or lesser distances from each other. In one place we observed a water mill so situated that when the tide flowed, the water ran up into a pond, but when it ebbed, the flood gate was drawn up and the mill driven by the water flowing out of the pond.*[22]

A painting of the eastern shore of Staten Island along the Narrows made two decade later illustrates the agricultural landscape that Kalm described. (Figure 1.7) The shore also contained extensive salt meadows consisting of vast stands of native, saltwater-loving species such as salt cordgrass (*Spartina alterniflora)*, and yellow saltgrass (*Spartina patens)*, which were mowed for hay even though they were regularly inundated by the tides. The salt marshes of the coast were a valued natural resource as they produced annually large crops of natural grasses, and furnished good year-round natural pastures for cattle and sheep. Salt hay meadows were highly valued by the farmers whose lands bordered on them, as they constituted an unfailing source of hay for winter use and a surplus for exportation. In addition, salt hay meadows attracted a diverse group of coastal wildlife species such as mussels, egrets, and herons.

From the mid eighteenth century until 1794, the Battery Weed headland and the area to south belonged to John Van Deventer and his family, and was known as Van Deventer's Point (the actual point was south of the Battery Weed headland).[23] (Figure 1.8) Under British rule, title to the land remained in the hands of the Van Deventer family. A farmhouse, later known as the Van Deventer-Fountain House was constructed on the point in c.1786. This property was located on a deep-water channel, ideally positioned for launching Atlantic crossings during the eighteenth century. John Van Deventer operated a shipyard

during the middle of the eighteenth century and was commissioned by a group of Moravian settlers to build a sailing vessel at Van Deventer's Point. The ship he built there in 1748, the "Irene," made fourteen round-trip Atlantic crossings, bringing missionaries and settlers from Europe to the new world.[24]

The Van Deventer property was leased from Ann Jacobsen and Catherine Van Deventer by Cornelius McLean for farming during the late eighteenth century. It is unknown exactly what McLean raised on the leased land, but as illustrated in an etching showing farmland just to the north of the site in 1776, the land would have been suitable for pasturage, and was likely used for this purpose (see Figure 1.7)

STRATEGIC DEVELOPMENT AT THE NARROWS

The landscape of the Battery Weed headland was in a prominent geographic location overlooking the entrance to New York Harbor. During the early years of the eighteenth century, the harbor entrance became the commercial gateway to the interior, including Albany and Montreal and the Great Lakes, by way of the Hudson River. A competitive environment existed between the French and English over important trade routes opportunities for commerce in the region. Although the landscape was not occupied by any fortification at this time, there was a growing recognition of the strategic importance of this and other sites overlooking the entrance to New York Harbor.

Colonial era fortifications in New York Harbor included Fort Amsterdam, built in 1626, at the southern tip of the island of Manhattan, and a battery on Governor's Island. A plan was approved in 1711 for a system of signal guns and fire beacons to be developed for several locations including "some eminence on Staten Island." With a charter for a ferry service between Manhattan and Staten Island given shortly thereafter in 1712, settlers were also beginning to realize the island's potential for agricultural.[25]

Although concerns related to the outbreak of war in the colonies between the French and the British in 1754 resulted in a proposal by the New York colonial government for batteries on Staten Island, the proposal was not implemented. However, in 1755 the colony did authorize a payment to carry two guns down to the Battery Weed headland along with tar barrels and posts for beacons.[26] Maps of this period indicate only one building and a ferry landing at or near the Battery Weed headland (see Figure 1.8).

Following their evacuation of Boston in March of 1776, the British arrived at the Narrows of New York Bay. A drawing dated July 12, 1776, and titled "*View of the Narrows between Long Island and Staten Island with our fleet at anchor and Lord*

Howe coming in," illustrates the British arrival at the bay just to the north of the Battery Weed headland (see Figure 1.7). The British used Staten Island as a staging area, and both British and Hessian troops were stationed there throughout the American Revolution. An artillery post, probably of earth with wooden supports, was constructed by the British at an undetermined location at the top of the bluff above the present site of Battery Weed.

By 1779, British defenses at the Narrows consisted of a redoubt, a line of twenty-six gun platforms, and a hot-shot furnace that was part of an ammunitions system used to set attacking ships afire. During this period, the bluff above Battery Weed became known as Flagstaff Hill, with a signal house and fort of earthworks (see Figure 1.8).[27] The island landscape served the needs of the military, as well as the burgeoning population of Manhattan, in supplying forage and firewood.[28] The British occupation of the land along the west bank of the Narrows resulted in the harvest of many of the available mature trees in the area for fuel. By 1783, the British had evacuated New York, and the earthen fort they constructed on the slope above Battery Weed deteriorated in the years that followed.[29]

During the later eighteenth century, Governor George Clinton of New York, fearing insufficient federal funding to protect the port of New York, established a state board of commissioners, the Commissioners of Fortifications. The board was given extensive authority, including the power to "...enter and survey any land regarded as required for defense, and to purchase such tracts, and, when owners seemed recalcitrant or unreasonable, to proceed through the Chancery Court of the State of New York to force the sale on fair terms."[30] Charles Vincent, an engineer commissioned by the U. S. War Department, identified privately held lands on both banks of the Narrows as lands required for the defense of the port of New York. Vincent submitted a report and comprehensive survey on the fortification needs of New York Harbor in 1794. In this report, Vincent referred to the site at the top of the bluff on the west side of the Narrows as "Stag Stake" and suggested it be used to pass along a successive relay of signals from Sandy Hook to Manhattan via Bedloe's (Liberty Island) two miles to the southwest of the city. By this method, he proposed a means to monitor the entrance to New York Harbor for any threats to security and commercial activity.[31]

In his 1794 report, Vincent also discussed several possible sites for constructing batteries, noting the particular suitability of the site at "Sandy Bay" on the west bank of the Narrows, possibly referring to the Battery Weed headland and the cove to its north.[32] Vincent considered the site "much more interesting on account of vessels coming much closer to it, driven by the currents and endeavoring to avoid the advancing high ground." He suggested the establishment of a battery there "above the level of the highest tides" and "connected by a covered way with a redoubt to be

erected on the extremity of the steep bank where formerly stood a block house." [33] This land belonged to the Van Deventer family, and although they were willing to sell the farm to the state, the board of commissioners considered the price extravagant. Despite this, in November of 1794, twenty-four and one half acres of the Van Deventer property along the shore passed out of private ownership, by order of the Court of Chancery, to the State of New York.[34] Although the Battery Weed headland was in public ownership, the state would not develop the property for military purposes for another fifteen years.

LANDSCAPE OF VAN DEVENTER'S POINT [35]

By the first decade of the nineteenth century, the landscape of Van Deventer's Point, including the Battery Weed headland, had changed relatively little over the course of the preceding centuries. Native American habitation of the area probably had little impact aside from possibly small agricultural clearings. Colonial settlement had a more extensive impact through development of agricultural landscapes. British occupation during the years of the American Revolution had probably the greatest impact on the site with development of an earthen fortification and harvesting remaining woods for fuel. In 1809, the Battery Weed headland was likely a broad sandy flat and beach, possibly interspersed with coastal grasses. The steep, irregular bluff above the future site of the present fort was probably was characterized by glacial boulders, eroded banks, grasses and wildflowers, and trees such as red cedar, oak and pine. Earthen farm roads provided access to the beachfront site from both the north and south running across and diagonally down the bluff. The headland was probably still used for agriculture, probably by the Jacobson family who would have leased the land from the state. A farmhouse was located along the shoreline south of the point, and on the top of the bluff was another farmhouse and barn.[36] Although the state had not constructed fortifications on the headland by 1808, plans were in the works for the strategic development of the Narrows, including construction of a large stone fortress along the water's edge according to the federal second system of coastal fortifications. In the decades to follow, these plans would significantly alter the landscape.

ENDNOTES

[1] Eric Homberger, *The Historical Atlas of New York City: A Visual Celebration of 400 Years of New York City's History* (New York, NY: Henry Holt and Company, LLC, 1995), 14.

[2] US Geological Survey (USGS), "New York City Regional Geology, Verrazano Narrows" (accessed 8 June 2005), http://3dparks.wr.usgs.gov/nyc/parks/loc61.htm.

[3] Ingrid Wuebber and Edward M. Morin, URS Corporation, "Phase 1A Archeological Investigation Rehabilitate Battery Weed Seawall and Dock Fort Wadsworth Unit, Gateway National Recreation Area Staten Island, New York" (Unpublished report prepared for the National Park Service, 2006), 3.1.

[4] USGS.

[5] W. Henry McNab and Peter E. Avers et al., "Ecological Subregions of the United States," (accessed 14 November 2006), http://www.fs.fed.us/land/puds/ecoregions/.

[6] Wuebber, 3.3.

[7] Wuebber, 3.4.

[8] Reginald Pelham Bolton, Indian Notes and Monographs, Indian Paths in the great Metropolis, New York Museum of the American Indian (New York, NY: Heye Foundation, 1922), 187.

[9] George W. Hilton, The Staten Island Ferry (Berkeley, CA: Howell-North, 1964), 53.

[10] Homberger, 16.

[11] Henry G. Steinmeyer, Staten Island 1524 - 1898 (Richmondtown, NY: Staten Island Historical Society, 1987), 12.

[12] Edna Holden, Principle Researcher, Staten Island, A Resource Manual for School and Community, Board of Education of the City of New York (New York, NY: Bureau of Curriculum Research, 1964), 10.

[13] Steinmeyer, 12.

[14] Steinmeyer, 17.

[15] Holden, 11.

[16] Holden, 11, 13; Marcus P. Meuwese, 'For The Peace and Well-being of the Country': Intercultural Mediators and Dutch-Indian Relations In New Netherland and Dutch Brazil, 1600-1664 A Dissertation, (M.A. diss., University of Notre Dame, 2003), 374, (accessed 14 April 2007), http://etd.nd.edu/ETD-db/theses/available/etd-09272003-005338/unrestricted/MeuweseMP092003.pdf.

[17] Holden, 14.

[18] Holden, 20.

[19] Frederick R. Black, "A History of Fort Wadsworth, New York Harbor, North Atlantic Regional Office, Cultural Resources Management Study No.7, 1983" (Boston, Massachusetts: U.S. Department of the Interior National Park Service), 19.

[20] Black, 30.

[21] S.L. Mershon, English Crown Grants (New York: New York Law and History Club, 1918), 28-30.

[22] Steinmeyer, 32.

[23] Black, 21.

[24] American Town Network LLC., "Exhibits in the Historical Museum," (accessed 21 March 2007), http://www.southshore.americantowns.com/servlets/WebPage?actioid= 1720.

[25] Hilton, 19.

[26] Black, 21.

[27] Black, 23.

[28] Black, 22.

[29] Black, 25.

[30] Black, 28.

[31] Black, 33.

[32] Black, 33. "Sandy Bay" is referred to on later maps as a cove just over a mile to the north of the Battery Weed headland, and was the location of a colonial ferry landing. This site is referred to as the sand beach in later reports, and it is likely that the sand beach extended south along the shore at the Battery Weed headland. The sand beach at Battery Weed may have been lost to the construction of fortifications.

[33] Black, 32.

[34] Black, 30.

[35] A period plan is not included for this chapter to lack of available documentation on the landscape in 1809.

[36] Charles Loss, "Map of State Land at Staten Island representing the situation of the ground and the fortifications to be erected," 1809, Cartographic Division, RG 77, Dr. 36, Sht. 17, National Archives II, College Park, Maryland.

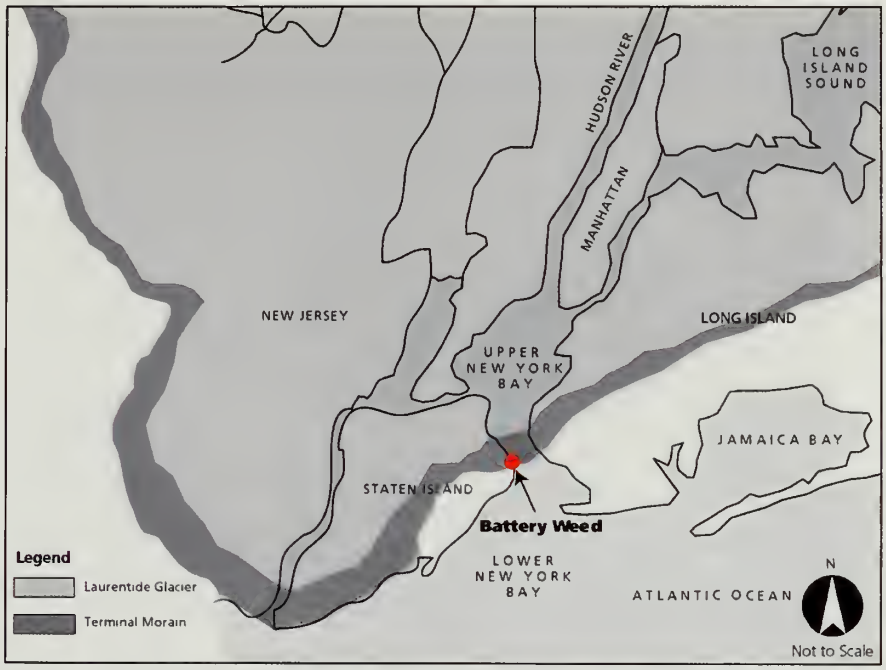

Figure 1.1: Glacial geology of New York City and vicinity showing the extent of the last glacier 12,000 years ago in relationship to the Battery Weed headland and existing landforms. SUNY ESF, based on F. Merrill, et al., United States Geological Survey Geologic Atlas of the United States (Department of the Interior, 1902), New York City Folio, No. 83.

Figure 1.2: Detail of an early map entitled "Nova Belgica et Anglia nova," 1636. This map illustrates the abundant animal wildlife in the region at the time of European contact. Reproduced from I.N. Phelps Stokes, The Iconography of Manhattan Island (New York, New York: Arno Press, 1967), volume 1, CP132, annotated by SUNY ESF.

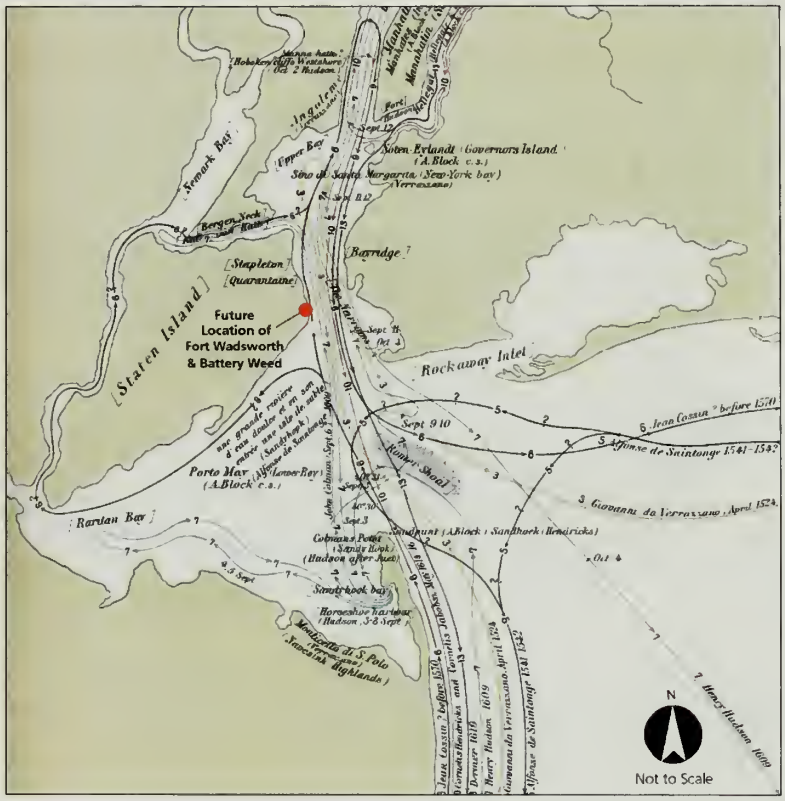

Figure 1.3: A twentieth-century map indicating routes of European explorers between 1524 and 1619 near the future Fort Wadsworth and Battery Weed. Court Surveys, "Map of Explorations in the Neighborhood of Manhattan Island II," 1918, reproduced from I.N. Phelps Stokes, *The Iconography of Manhattan Island* (New York, NY: Arno Press, 1967), volume 2, CP159, annotated by SUNY ESF.

Figure 1.4: An engraving depicting the Dutch settlement of New Amsterdam (Manhattan Island) in c.1650. European and Native American vessels share the surrounding waters. Reproduced from I.N. Phelps Stokes, *The Iconography of Manhattan Island* (New York, NY: Arno Press, 1967), volume 1, P1 1-A.

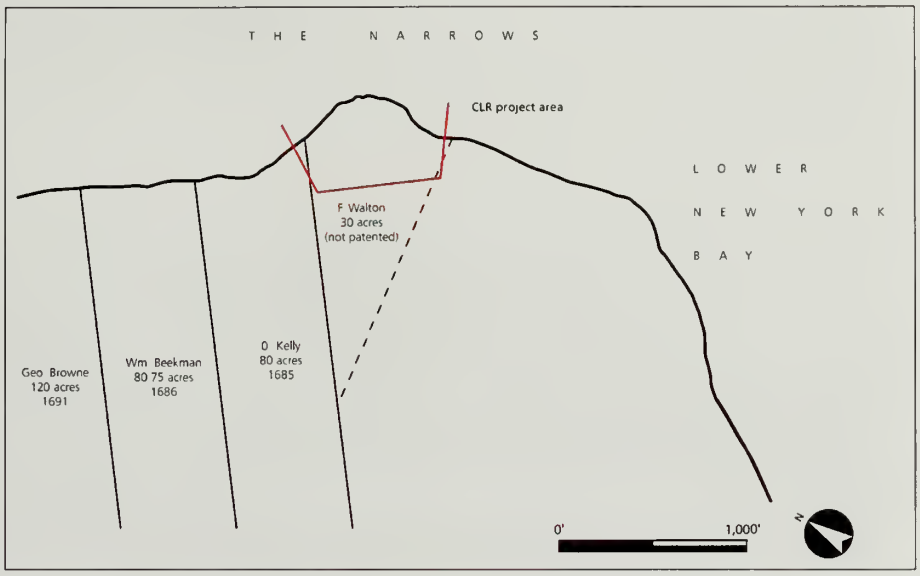

Figure 1.5: Drawing showing colonial land patents made between 1668 and 1712 in the vicinity of the Battery Weed headland. SUNY ESF, based on a map of Richmond County, Staten Island, 1668-1712, Staten Island Institute of Arts and Sciences.

Figure 1.6: This 1745 map, a detail of "Les Principales Fortresses Ports de L'Amerique Septentrionale," indicates "The Narrows" as a prominent place on Staten Island, and shows villages and ferries that existed at the time. Image 00-363, Map Division, New York Public Library, annotated by SUNY ESF.

Figure 1.7: A painting of the eastern shore of Staten Island along the Narrows in July 1776 illustrating the agricultural landscape and bluffs. The painting shows the arrival of Lord Howe in the bay just to the north of the future site of Battery Weed. Reproduced from I.N. Phelps Stokes, *The Iconography of Manhattan Island* (New York, NY: Arno Press, 1967), volume 6, Pl 85, annotated by SUNY ESF.

Figure 1.8: Detail of a 1781 British map showing a "Signal House and Fort" at and near the Battery Weed headland and Van Deventer's Point. The map also indicates a ferry just to the north. Image 00-448, Map Division, New York Public Library, annotated by SUNY ESF.

SECOND SYSTEM STATE FORTIFICATION, 1809–1846

During the early nineteenth century, contrasting cultural values of agriculture, harbor defense, and recreation came together in the landscape of the Battery Weed headland. In 1809, the State of New York began construction of its first military fortifications, transforming the earlier agricultural landscape with large masonry forts, batteries, wharfs, and other facilities constructed according to the second system of coastal fortifications developed by the federal military. During a long period of military inactivity that followed the War of 1812, the land was used for agriculture as well as for recreation. By 1846 at the end of state ownership, the fortifications had purportedly fallen into ruins. This condition, however, added to the picturesque character of the landscape, which had become a popular spot for taking in the expansive view of New York Harbor, and the subject of naturalists, authors, and poets.

ROMANTIC STATEN ISLAND

New York City in the early nineteenth century was a rapidly growing center of trade, finance, and commercial activity. Staten Island, less than five miles offshore to the south remained largely a rural and agricultural community. The island, accessible since 1713 by way of a short ferry ride from Manhattan, expanded quickly in population and in 1800, the total population numbered 4,564, and by 1810 nearly a thousand more individuals had arrived.[1] The island's agricultural landscape featured plowed fields of corn, hay and rye, and orchards and cherry tree hedgerows between the furrowed fields. (Figure 1.9) Although detailed written descriptions of the historic landscape immediately surrounding the Battery Weed headland are few, there are many historic accounts of the landscape of Staten Island. In a book published in 1829 and titled *Three Years in America*, author James Stuart wrote:

> *We saw many comfortable looking farm houses, amidst rich valleys and lands, and orchards abounding in fruit; but what surprised me the most in looking at the fruit, was the extraordinary quantity of cherry trees producing the small black and red cherry. In this ride, I saw a greater number of cherry trees, I am persuaded, than I had seen in the whole course of my life...No part of the wood in Staten Island...is of great size, the British during their occupation of New York, in the Revolutionary War, having cut down for fuel all the wood within their reach.*[2]

Continuing increases in population through the nineteenth century brought the growth and development of village settlements along the eastern shore of the island including Stapleton, Clifton, Tompkinsville, and Edgewater. Affluent

families established country estates to the north and south of the Battery Weed headland. One observer remarked in 1842:

> *...the whole eastern shore [of Staten Island] is becoming almost a continued village from the Quarantine [Tompkinsville] to the Signal poles at Fort Richmond being occupied by country seats and town plots.*[3]

Many authors and artists visited Staten Island during this time or passed along its shores. In 1839, author Herman Melville made a voyage from New York to Liverpool, and passed through the Narrows. Upon his departure and return, he took in the picturesque landscape of the Staten Island shoreline and the state fortifications at the headland in particular. Ten years later, he wrote of this landscape in his novel, *Redburn*. Although probably containing some fiction, Melville captured the character of the Battery Weed headland which had not seen active military use for some time:

> *...on the right hand side of the Narrows as you go out, the land is quite high; and on top of a fine cliff is a great castle or fort* [Fort Tompkins], *all in ruins, and with trees growing round it...It was a beautiful place, as I remembered it, and very wonderful and romantic, too...On the side away from the water was a green grove of trees, very thick and shady and through this grove, in a sort of twilight you came to an arch in the wall of the fort...and all at once you came out into an open space in the middle of the castle. And there you would see cows grazing...and sheep clambering among the mossy ruins...and I once saw a black goat with a long beard standing with his forefeet lifted high up on the topmost parapet, and looking to sea...Yes, the fort was a beautiful, quiet and charming spot. I should like to build a little cottage in the middle of it, and live there all my life.*[4]

Henry David Thoreau, at the age of twenty-six, lived as a tutor at the home of Judge William Emerson in the Staten Island neighborhood of Concord less than two miles directly west of the Battery Weed headland. Since the headland was between Judge Emersons' home and the sea, Thoreau presumably had occasion to walk along the waterfront there. Thoreau provided another character sketch of the coastal island landscape in a letter he wrote in 1843:

> *I must live along the beach, on the southern shore, which looks directly out to sea...The cedar seems to be one of the most common trees here, and the fields are very fragrant with it. There are also gum and tulip trees...The woods are full of honeysuckle in full bloom, which differs from ours in being red instead of white...The painted cup is very common in the meadows here. Peaches, and especially cherries seem to grow by all the fences...The*

> *whole island is like a garden, and affords very fine scenery... seaweed, water, and sand; and even the dead fishes, horses and hogs have a rank, luxuriant odor; great shad-nets spread to dry; crabs and horseshoes crawling over the sand; clumsy boats, only for service, dancing like sea-fowl over the surf, and ships afar off going about their business.*[5]

The island landscape, and particularly the Battery Weed headland overlooking the entrance to New York Harbor, drew the attention of many. From the heights of the bluff, visitors enjoyed the views of Manhattan, the bay and islands to the north and east, and the Fort Tompkins lighthouse—an aide to navigation built in 1828 on the Staten Island shore to the south. The coastal landscape also offered scenic views associated with island agriculture, offshore shipping, and fishing activities that appealed to visitors. The long prospect from atop the bluffs also offered strategic value, and although the aesthetic qualities of the site attracted many, its military importance would dominate the landscape.

STATE FORTIFICATION OF THE NARROWS

By the late eighteenth century, an intensified international competition for territory and resources was underway. American domestic defense policy focused on the identification and acquisition of strategic coastal sites. In 1794, President George Washington initiated the country's earliest unified program for harbor defense, known as the First American System. Washington turned to French engineers residing in the United States to design fortifications for the protection of harbors and ports along the Atlantic Coast. Most forts consisted of shoreline batteries with open works and earthen parapets over which twenty-four pound cannons could fire. Many states retained ownership of defense sites and exercised control over construction and maintenance.[6] While New York had acquired the site at the Narrows during this time, it did not build any structures there under the first system.

Increased tension with Great Britain that led up to the War of 1812 prompted the United States to revitalize its coastal defenses. These improvements in military engineering were later termed the Second American System. The new program initiated during the presidency of Thomas Jefferson called for forts with more elaborate designs, most notably replacing earthen forts with all-masonry structures, many of which included circular or elliptical segments. A major innovation in American military architecture, the casemated gun emplacements, led to the construction of high, vertical-walled harbor defenses with a greater concentration of firepower in multiple tiers of guns. Armament installed during this period was typically larger and of greater numbers than First System weaponry. New York City was one of sixteen coastal locations identified as

requiring defensive works in this new program of coastal fortification.[7] Forts constructed by the federal government during this period in the New York Harbor included Castle Williams on Governor's Island, Castle Clinton at the Battery on Manhattan, Fort Gibson on Ellis Island, and Fort Wood on Bedloe's (Liberty) Island.[8] Although the federal government recognized the merits of fortifications on Staten Island, other sites were funding priorities, so the Battery Weed headland was not initially included in the new federal construction program.

In place of a federal presence, the State of New York proceeded with plans for constructing its own fortification at the Battery Weed headland. In 1809, the state purchased an additional twenty-two acres to the south of the twenty-five acre Van Deventer tract it purchased in 1794.[9] The second purchase made possible the construction of substantial defensive works at the site. The state planned two forts, Fort Tompkins at the top of the bluff and Fort Richmond, known as the Water Battery, on the beach below.[10] An 1809 plan illustrates the proposed state military development, as well as the earlier remnants of agricultural land use. (Figure 1.10) This plan locates the Van Deventer farmhouse ("Jacobsons Dwelling") along with a barn and a fish hut on the shore, and the proposed military works including batteries A and B, Fort Tompkins, Fort Richmond, two barracks, a dwelling, smith shop, office and store. The map shows a wharf extending eastward into the Narrows north of the proposed Fort Richmond.

The state completed construction of Fort Richmond on the shore near the water's edge in 1810. The new Second System fort, built in a half-circle with a cluster of support buildings, and a new wharf to the north was constructed of solid masonry, possibly red sandstone, and measured approximately 266 feet along its west side, roughly 500 feet along the curved channel-facing curtain wall, and approximately thirty feet high. The state constructed two sets of barracks along the straight west wall of the fort and a powder magazine that was located near the center.

By June of 1812, Congress voted for war against Britain, and just a few days later, but prior to the Senate taking the same action, the New York State legislature appropriated $25,000.00 to build the second or upper fort, Fort Tompkins. Instead of the original modified rectangular plan documented in 1809, the state began building a pentagonal bastion in 1814 near the end of the War of 1812. (Figure 1.11) Funding limitations led to cessation of work and the new Fort Tompkins remained unfinished. In addition to Fort Tompkins, by late in 1813 the state completed a blockhouse on the hill near the new fort.[11]

The bluff at the Battery Weed headland, which had been a signal flag site during the Revolutionary War, became known in the early nineteenth century as "Signal Hill" for its role in the relay of optical signals between Sandy Hook and the Merchant's Exchange in Manhattan.[12] In 1812, the state legislature authorized the governor to arrange with the federal government the establishment of a telegraph observatory and signal poles at the state-owned site.[13] A semaphore station, an optical telegraph system consisting of tall signal poles with adjustable flags, was constructed at the top of the bluff above Fort Richmond. (Figure 1.12) By 1819, the state fortifications at the Narrows also included several small structures, probably the barracks, store, and office shown on the proposed 1809 plan (see Figures 1.10, 1.11).

Fort Richmond served an important role during the War of 1812, and was considered the most important defensive position at the Narrows. The fort was used as a checkpoint for all vessels entering or leaving New York Harbor during this period. Although a maximum of 558 men were stationed at the site during the war, in 1814 New York Governor Tompkins stated that there were "quarters and tents at the state works at the Narrows for nearly 750 men."[14] The importance of the fortifications at the Narrows was reflected in February of 1815 when, in honor of the ratification of the treaty of peace between Great Britain and the United States, the 46th U.S. Infantry Regiment at Fort Richmond participated in a "national salute" that was given from several New York Harbor defenses.[15]

Following the end of the War of 1812, the state had scarce funding available for the maintenance and repair of the fortifications, which were largely abandoned in 1816, giving good reason for Herman Melville's description of ruins more than two decades later. Despite the abandonment, the federal government was gaining an increasing interest in the site, in tandem with the growing importance of New York City as a gateway to the interior of the country. Many rounds of negotiations over the transfer of the site to the federal government were held between the State of New York and the War Department from 1820 to 1845, but none was successful.[16]

LANDSCAPE OF THE BATTERY WEED HEADLAND (DRAWING 1)

After the initial development during the period leading up to and during the War of 1812, the state fortifications at the Narrows witnessed little new construction in the decades that followed. At the completion of a survey of the reservation in 1819, the state fortifications included the half-circle of Fort Richmond at the water's edge accessed by a road extending down the steep bluff. To the north of the fort was a wharf (dock), sheltered in a small bay that was probably lined by a sandy beach. The lower terrace surrounding Fort Richmond also contained a

number of smaller buildings in a line at the base of the bluff between the fort and wharf, including a long rectangular building used as a barracks, a storehouse, office, and smith shop, all probably built around the same time as the fort in c.1809. The pre-existing fish hut south of Fort Richmond, a remnant of the earlier private use, probably was removed with the state fortification of the headland. On the top of the bluff overlooking Fort Richmond was Fort Tompkins, the pentagonal bastion partially completed in 1814. To the south on the high point of the bluff was the wood signal tower erected in c.1812 as part of a system of semaphore signals used to communicate across the broad expanse of the harbor. The old farmhouse near the south shore of Van Deventer's Point was probably removed with the development of Fort Tompkins in 1814. The state had planned construction of batteries along the edge of the bluff south of Fort Tompkins, but these were apparently not built during this period.

By 1846, more than three decades after the completion of Fort Richmond, the reservation was reportedly in a ruinous state.[17] While the degree of deterioration at Fort Richmond is not known, Fort Tompkins, which was never completed, was apparently quite ruinous according to the earlier quoted description by Herman Melville. Fort Richmond probably fared better because of its function as a monitor of the shipping lanes through the Narrows. The rest of the state reservation was leased to farmers, who, as Melville wrote, grazed their sheep, cows, and goats there.[18]

While military use of the headland had declined by 1846, this pastoral landscape, including the craggy bluff above Fort Richmond with its panoramic views and groves of trees clinging to the slope, was becoming a favorite destination for strolling.[19] The bustling activity of the sailing vessels below, the curved stone walls of the two Second System forts—Fort Tompkins on the top of the bluff and Fort Richmond on the beach—together with the wind-blown and weathered quality of the eroding rocky bluff lent a lovely picturesque quality to the site. A c.1840 etching captures the uniquely layered character of the headland during this period. In the etching, entitled "Scene on Battery Point," a curious discussion takes place atop the bluff between what appears to be military, government and private interests while sightseers stroll along the crest of the bluff in the background. (Figure 1.14)

Within a decade of this etching, the landscape would change dramatically as the old state fortifications gave way to much larger and stronger defenses erected by the federal government. Despite the change, however, visitors would continue to come to the site for its picturesque qualities.

ENDNOTES

[1] Henry G. Steinmeyer, *Staten Island 1524 – 1898* (Richmondtown, New York: Staten Island Historical Society, 1987), 57.

[2] Steinmeyer, 62.

[3] Steinmeyer, 62.

[4] Herman Melville, *Redburn* (Harmondsworth, Middlesex, England; Penguin English Library, 1849), 81, 82.

[5] Steinmeyer, 63-65.

[6] Emanuel Raymond Lewis, *Seacoast Fortifications of the United States: An Introductory History* (Annapolis, Maryland: Naval Institute Press, 1979), 21-22.

[7] Lewis, 25-33.

[8] Perer Eisenstadt, Editor, *The Encyclopedia of New York State* (Syracuse: Syracuse University Press, 2005), 588.

[9] Frederick R. Black, *A History of Fort Wadsworth, New York Harbor* (Boston, Massachusetts: U.S. Department of the Interior National Park Service North Atlantic Regional Office, Cultural Resources Management Study No. 7, 1983), 44.

[10] Ingrid Wuebber and Edward M. Morin, URS Corporation, "Phase 1A Archeological Investigation, Rehabilitate Battery Weed Seawall and Dock, Fort Wadsworth Unit [sic], Gateway National Recreation Area Staten Island, New York" (Unpublished report prepared for the National Park Service, 2006), 3, 8.

[11] Black, 51. The exact location of this blockhouse is unknown, thus it is not located on the 1809-1846 period plan (Drawing 1).

[12] Wuebber, 3.8.

[13] Black, 45.

[14] Quoted in Black, 53.

[15] Black, 53, 54.

[16] Black, 57.

[17] Black, 70.

[18] Black, 83.

[19] Black, 61.

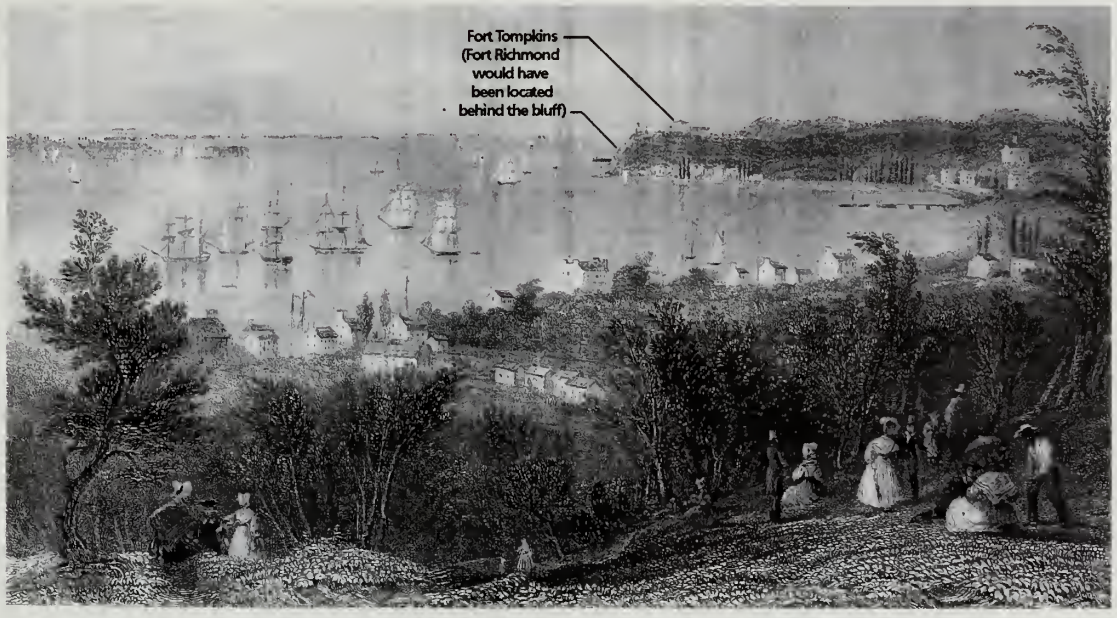

Figure 1.9: An etching of the rural Staten Island landscape, c.1840. The view is looking south along the east shore toward the Battery Weed headland in the distance. Department of Prints, Photographs and Architectural Collections, PR 020, Box 1-Staten Island, New-York Historical Society, New York, New York, annotated by SUNY ESF.

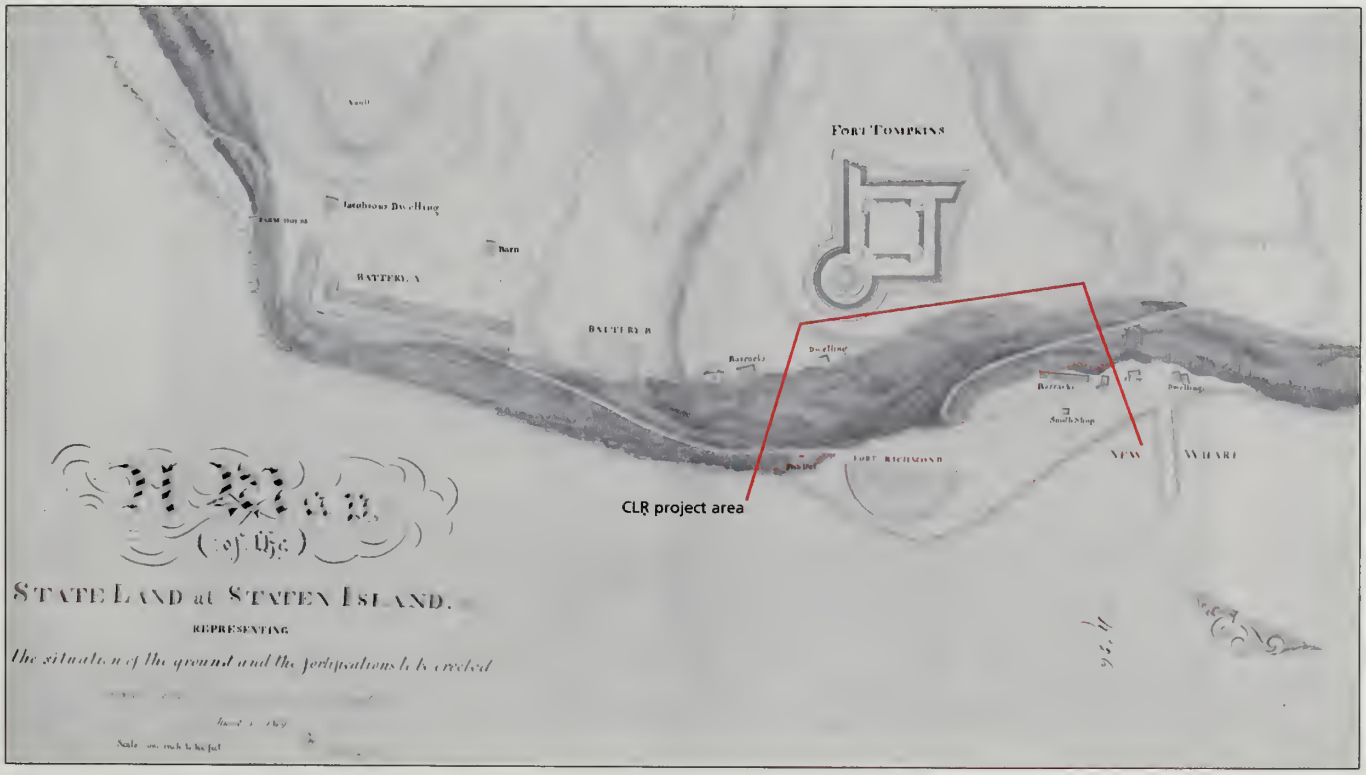

Figure 1.10: Charles Loss, "Map of the State Land at Staten Island Representing the situation of the ground and the fortifications to be erected," March 13, 1809. While the fortifications had not yet been built, the plan does not clearly indicate existing and proposed construction. Farmhouses, dwellings, and barns most likely were preexisting. RG 77, Dr 36, Sht. 17, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

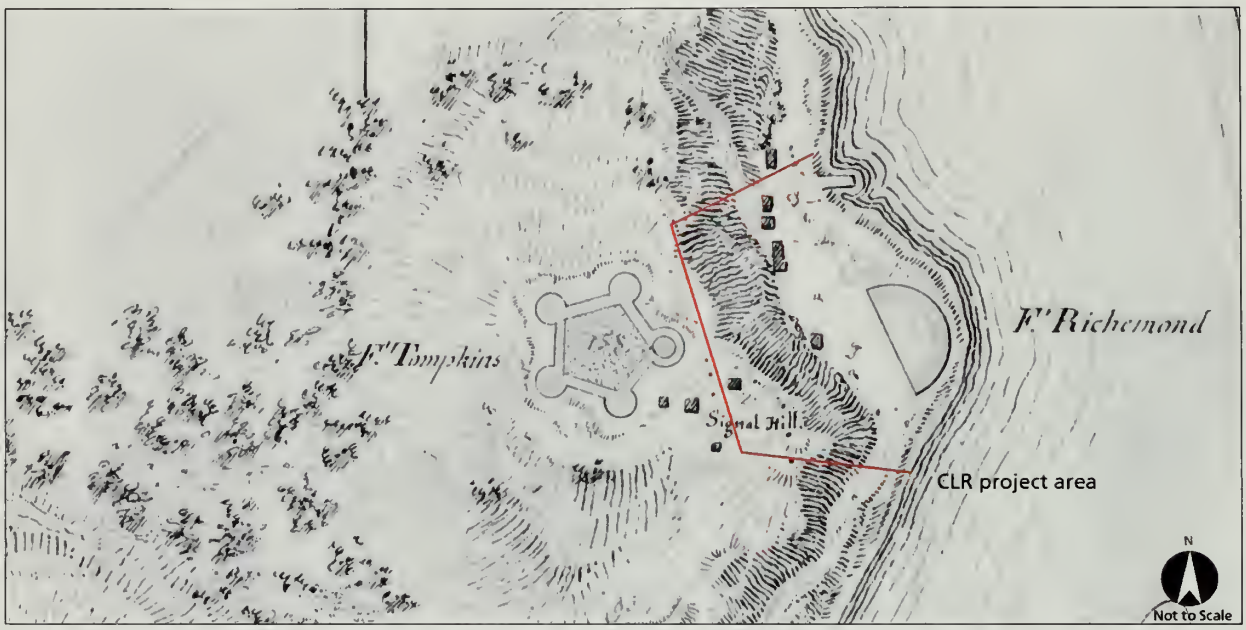

Figure 1.11: An 1819 site map depicting Fort Tompkins as redesigned and Fort Richmond with several small structures to the north and west, and "Signal Hill" at the easternmost point of the bluff. The wharf appears to have been farther north than shown in this drawing (outside of CLR project area). RG 77, Dr 41, Sht. 3, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

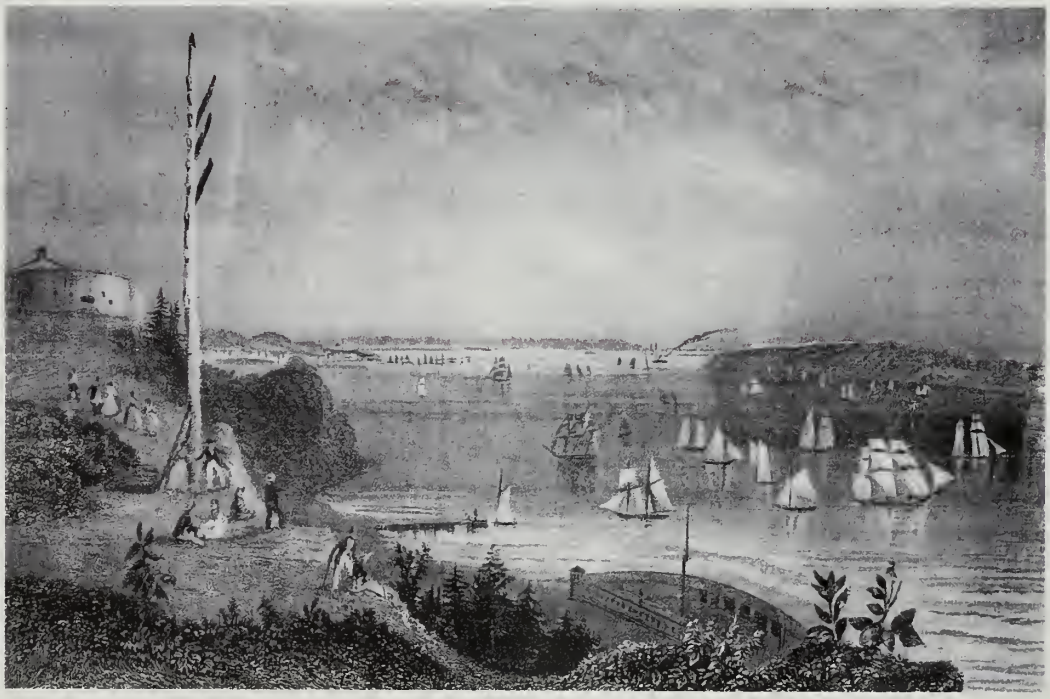

Figure 1.12: A drawing looking north from the bluff above Fort Richmond by W.H. Bartlett, 1839. This image depicts Fort Tompkins to the left at the top of the bluff and Fort Richmond to the right by the water. The pole to the left is a part of the semaphore system, an optical signal. Department of Prints, Photographs and Architectural Collections, PR 020, Box 1-Staten Island, Collection of the New-York Historical Society, New York, New York.

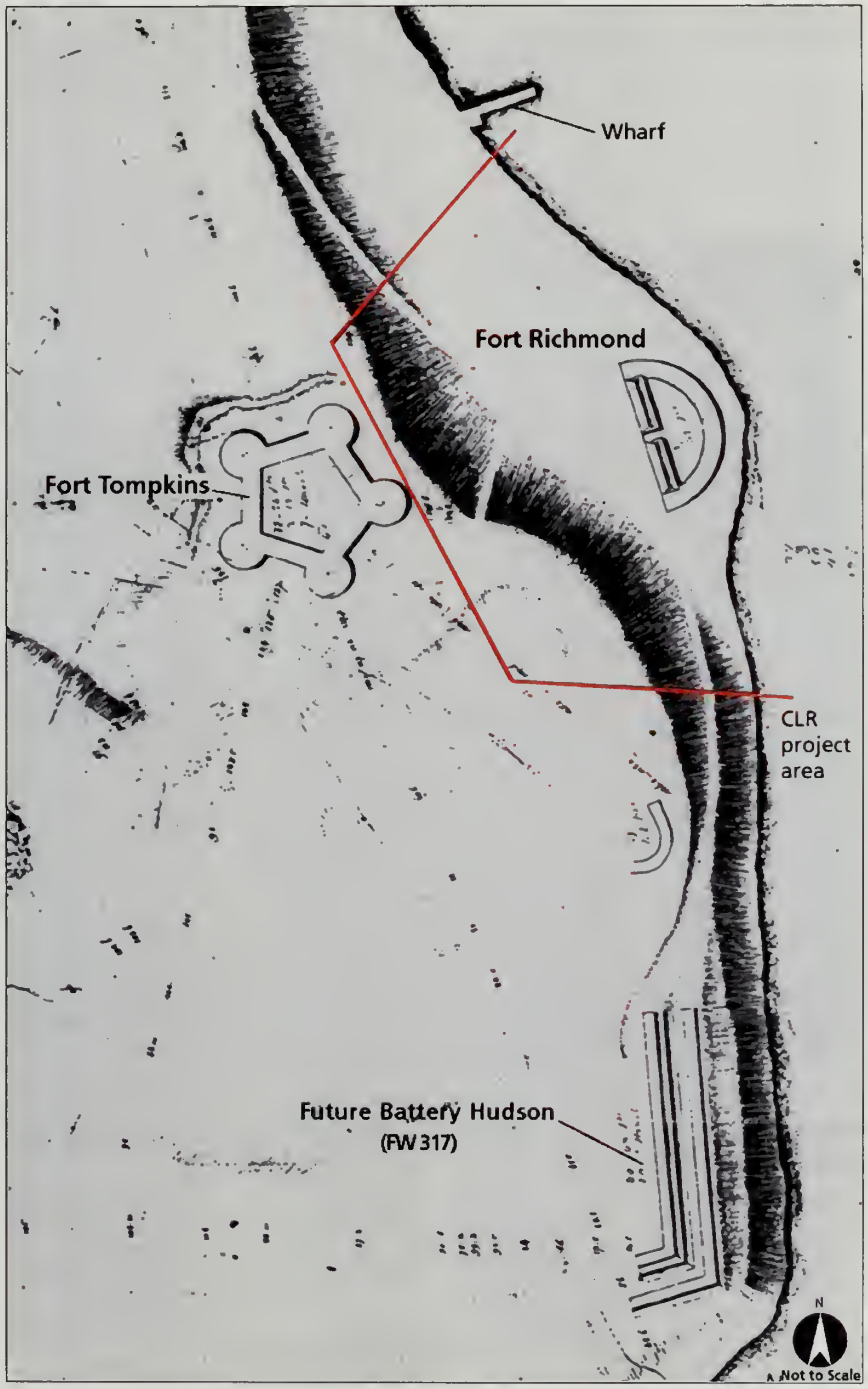

Figure 1.13: Detail of a c.1819 survey of the state fortifications at the Narrows showing Forts Richmond and Tompkins and a dock to the north, and the planned location of a battery that would later become Battery Hudson. Secondary buildings depicted in Figure 1.11 are not shown on this survey. Note the roads extending down the steep bluff. RG 77, Dr 41, Sht. 2, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNYESF.

Figure 1.14: A c.1840 etching looking north from the bluff above Fort Richmond entitled "Scene on Battery Point." The etching depicts Fort Tompkins in the upper left corner, Fort Richmond in the lower right corner, and the semaphore signal on the bluff. Staten Island Institute of Arts & Sciences Archives, Staten Island, New York.

Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area
Staten Island, New York

Second System Period
1809 - 1846

OLMSTED CENTER
for LANDSCAPE PRESERVATION

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

in partnership with:

Department of Landscape Architecture
SUNY College of Environmental Science and Forestry
Syracuse, New York

SOURCES

1. Proposed Fortifications, 1809 (Loss)
2. State Fortifications, 1819 (Poussin)
3. Fort Richmond, 1855 (McPherson)
4. New York Harbor, 1863 (Engineer Dept.)

DRAWN BY

Jean B. Gleisner, Illustrator CS3, 2008

LEGEND

- Assumed feature
- Removed during period
- Added During Period
- 6' Contour
- Building or Structure
- Unpaved Road
- CLR Project Area
- Turf or Low Ground Cover
- Conifer Tree/Shrub
- Deciduous Tree/Shrub

NOTES

Plan illustrates conditions in 1846.
Dates shown indicate initial construction and/or removal during period.
For features built prior to the period, no date is given.
All vegetation shown in approximate scale and location.
Contour lines are approximate.
Names indicated are those used during the period, when known.

N

0' 40' 80' 120' 160'

Drawing 1

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Names indicated are those used during the period, when known.

N

0' 40' 80' 120' 160'

Drawing 1

THIRD SYSTEM FEDERAL FORTIFICATION, 1847–1885

The headland at the west bank of the Narrows, although used consistently for both harbor defense and recreation, changed dramatically during the years between 1847 and 1885. The construction of a new Third System Fort Richmond (Battery Weed), and the later reconstruction of Fort Tompkins above, resulted in extensive reshaping of the coastal landscape. The bluff above the present site of Battery Weed, a rocky and partially wooded overlook, was cleared, graded smooth, and seeded with lawn. Technological advancements in weaponry and military tactics lead to the acquisition of more land for the military post and the addition of ground batteries, large new earthen forms, and subsurface structures in the landscape. All the while, visitors came to the increasingly popular seaside site to enjoy the scenic views of busy New York Harbor.

PASTORAL STATEN ISLAND

Throughout the early nineteenth century, the port of New York served as the main gateway to the interior of the rapidly developing nation. The port was at the head of the state's canal system that gave access to the Great Lakes, and served a rapidly expanding system of railroads on both the New York and New Jersey sides. By 1840, New York City was the busiest port in America, moving tonnages greater than Boston, Baltimore, and New Orleans combined. Seventy percent of the total imports into the United States passed the Narrows into New York Harbor. A renewed interest in coastal defense, particularly at the Narrows that was the main entrance into the harbor from the Atlantic Ocean, accompanied this rapid economic growth.[1] Development of the New York Navy Yard at Brooklyn underscored the nation's interest in the security of New York Harbor.

Along with the economic growth, New York City's population swelled with the influx of immigrants from Europe during the 1840s, and by 1860, the city numbered more than one million people. Respite from the crowded streets was difficult to find. Residential squares such as St. John's Park, Gramercy Park, Union Square, and Washington Square were usually fenced in with access restricted to neighboring property owners. It was not until 1858 that concerns for public health, in addition to a growing desire for pleasant outdoor public social spaces such as those provided in Europe by noblesse oblige, resulted in the Greensward Plan for Central Park by Frederick Law Olmsted and Calvert Vaux.[2]

While such new urban landscapes as public parks and promenades fulfilled some of the needs for public green space, the wealthy and leisure class could also afford to escape the city entirely.[3] The rural, coastal landscape of Staten Island, somewhat wild and windswept, provided a welcome relief from the pace and

disturbance of rapid industrialization and working-class crowds of Manhattan Island, Brooklyn, and nearby cities in New Jersey. For many, Staten Island also had strong romantic appeal. Although romanticism had its roots in Europe in the late eighteenth century, by the mid-nineteenth century, the idea of naturalistic or picturesque beauty that harkened back to preindustrial harmony was becoming widely appreciated among the wealthy and in artistic circles. This was especially evident in New York, a cosmopolitan city with continuing ties to European cultural influences.

Staten Island was especially favored because it offered a sense of remoteness, yet was easily accessible by ferry from Manhattan. During the 1850s, running time of the ferry was only about thirty minutes, only slightly more than it is presently, and by the 1860s, ferries were operating on an hourly schedule.[4] The accommodations aboard these ferries included bars with refreshments, and lunch counters stocked with biscuits, sausages, dried beef, and fruits. On the approach to the island, passengers were able to view the dramatic rise of the terrain from the water. Todt Hill, five miles to the west of Battery Weed at an elevation of 409 feet, was the highest point on the eastern seaboard south of Maine.[5]

Places such as the military fortifications at the Narrows offered cool breezes and picturesque vistas, and were especially popular destinations for an afternoon stroll. (Figure 1.15) During the middle of the nineteenth century, many wealthy New Yorkers also settled on Staten Island, establishing large country estates overlooking the harbor. (Figure 1.16) By the post-Civil War years, these estates, laid out in the tradition of English landscape gardens with winding drives through ample grounds, extended across former farmland to the west and south of Fort Tompkins and Fort Wadsworth. (Figure 1.17) One of the largest estates in the area, belonging to the Appleton and Jones families, lined the west side of New York Avenue across from the military reservation.

The Staten Island landscape also offered its seaside charms as inspiration to artists such as American landscape painter Frederick Kost (1861-1923), who resided on the island between 1867 and 1900.[6] Kost painted softly lit and atmospheric scenes in the New York Harbor region, often depicting harvest of salt hay meadows.[7] Jasper F. Cropsey (1823 - 1841), painter and architect known for landscape and Civil War scenes, was a founder of the American Watercolor Society and was born on his father's farm in Rossville on Staten Island.[8] The landscape architect Frederick Law Olmsted, who designed Central Park along with Calvert Vaux, also was charmed by the beauty of Staten Island. The shorefront farm he purchased at the south end of the island in 1848 was advertised as having a "prospect...of unsurpassed beauty."[9]

FEDERAL FORTIFICATION OF THE NARROWS

The origin of the federal fortification of the Narrows that began in 1847 traces back to development of the Third System of coastal defense that began in 1817 under the direction of French military engineer, Simon Bernard. Unlike the earlier two systems, the Third System was initiated with no immediate need for war-time security. Bernard's goal was to construct forts of permanence that could resist the erosive actions of storms and waves as well as enemy attacks. All forts utilized casemates resulting in multiple tiers of armament. Third System forts varied widely depending on the topography, available materials, remoteness, or proximity to population areas, as well as the size and importance of the channel requiring protection. Third System forts were generally hexagonal in plan, and included one or more tiers of arched casemates that nearly always extended the full length of the seaward front, and walls were made of stone or brick a minimum of five feet thick. Armament improvements included the Columbiad, a smaller gun with greater versatility and range that fired either shell or shot at any angle between zero and forty degrees, and Rodman guns in calibers as large as fifteen or twenty inches. The substantial increase in firing elevation afforded by the multiple tiered-forts nearly tripled the range of American armaments.[10]

Under the Third System, the Army Corps of Engineers designated the west bank of the Narrows a "class one" project, vital to the security of the nation, and recommended that the development of adequate defenses there be commenced as soon as possible. New military objectives began to take shape as hostilities developed with Mexico over expansion of United States territory in the mid-1840s. Plans for construction of the new Third System Fort Richmond (Battery Weed) were begun in 1846, the same year that the Mexican-American War began. Major General Joseph G. Totten, U. S. Chief Engineer, was the principle designer of the new federal fortifications on both sides of the Narrows from 1838 until his death in 1864.[11] One of Totten's main objectives was to have the field of fire include as much of the shoreline to the north and south of the Narrows as possible. Plans for the new Fort Richmond rested on the potential to increase the field of fire by the reorientation of a new structure fifteen degrees further to the south. (Figure 1.18) This reorientation in combination with the range of fire possible from the east side of the Narrows at Forts LaFayette and Hamilton, would secure the harbor entrance.

Conveyance of the forty-seven acre military reservation on Staten Island from state to federal ownership occurred in February of 1847. Almost immediately, the U. S. War Department began construction of the new Fort Richmond directly on the site of the earlier Second System fort. A new stone dock was also planned just to the north. (Figure 1.19) Construction of the new fort employed men with horses and

carts and a pivoting crane structure used to move heavy materials into place. (Figure 1.20) Work on the new fort proceeded quickly. In mid 1850, however, in the wake of the Mexican-American War, federal appropriations began to dry up. The lack of funding slowed work considerably until 1852, when construction operations were suspended completely. It was not until late in the summer of 1854 that Congress renewed appropriations to continue work on the new fort.

Federal plans for the fortifications required the acquisition of additional lands, including five acres in 1854, and seventeen acres at the top of the bluff along New York Avenue acquired from William Aspinwell in 1856. With these purchases, the federal government was in possession of the area from the waterfront at the Narrows to beyond the crest of Flagstaff Hill, a roughly seventy-acre tract that became known as the United States Reservation.

The years leading up to and during the Civil War brought conflicts of ideologies and commercial interests to the New York City region. Economic competition between the northern and southern regions of the nation became an important factor in the years leading up to the Civil War. During this politically tumultuous time, the northeast witnessed a rapidly growing urban population and economy based on industry, family farms, mining, commerce, and transportation. New York City had strong commercial and economic ties with the south and resisted demands to discontinue the profitable cotton shipping trade.

Fort Richmond was nearing completion when the Civil War broke out in 1861, but sections such as the seawall remained under construction. In August of 1861, the fort became garrison for the first troops from the 5th Regiment New York Volunteer Artillery. Despite this, through most of the long years of the Civil War, Fort Richmond did not see any active combat, only occasional artillery testing. Army reports give 1864 as the year of completion of Fort Richmond; adjoining Fort Tompkins remained unfinished. That same year, an inventory of armaments at Fort Richmond listed guns in every position of the three-tier casemates with more guns added to the earth-covered barbette tier during the following year.[12] At the close of the Civil War in November of 1865, the United States War Department changed the name of Fort Richmond to Fort Wadsworth in honor of Brigadier General James S. Wadsworth who died due to wounds received at the Battle of the Wilderness in Virginia the year before.[13]

In the isolationist climate of the years following the Civil War, domestic affairs, especially economic development, became a national priority. A broadly held belief existed that war was unlikely, and a new attitude of anti-militarism developed. A distrust of the military was even voiced by some citizens, and this dampened support for the expansion or modification of coastal fortifications.[14]

Despite this, the War Department invested in a number of major improvements during the post-war period at the Narrows. However, technological advances in heavy ordnance that were occurring during the 1870s soon rendered the forts on the Staten Island shore militarily obsolete. The Third System of compactly designed granite casemates proved to be impossible to modify to accommodate the new larger guns and rifles that emerged following the Civil War.

DEVELOPMENT OF THE U. S. MILITARY RESERVATION

The construction of the new Fort Richmond by the federal government beginning in 1847 resulted in extensive changes to the former state military reservation at the Narrows. Other than the earthen batteries Morton and Hudson, the reservation, however, initially featured few military structures aside from the main forts. Much of the landscape continued to be used for pasturage even beyond the federal purchase of the land. Indeed, account books of Major General Delafield from the 1850s include entries for pasture rental.

In 1859, as work continued on Fort Richmond, the War Department began construction on a new fort to replace the old pentagonal Fort Tompkins. The new fort was planned as a supplemental structure intended primarily to protect Fort Richmond and the reservation's batteries. The new stone fort was built on the site of the old fort in an asymmetrical pentagon plan with flanking earthen batteries to the north and south. (Figure 1.21) The fort featured an internal moat, central parade ground, and exterior earthen glacis. Materials were brought to the site by an inclined railway extending up from the shoreline. Construction would continue for another decade and a half, slowed in part by supply limitations during the Civil War.[15]

The Civil War witnessed construction of a number of other buildings and structures as the troops at the military reservation rose to a high of 1,921. Wood buildings constructed to support the garrison included twelve two-room barracks, two stables, officer's quarters, a hospital, laundry, kitchens, and storage buildings. Following the war, federal funds were not always forthcoming for modifications to batteries and armaments, but engineering and labor was available, and was put to use in the repair and maintenance of the grounds, roads, and remaining buildings and structures on post. By 1867, most of the frame buildings constructed during the war were condemned and subsequently removed.[16] Primary roads were macadamized after the war and others received a new dressing of gravel.[17]

Despite the post-war decrease in military expansion, the military reservation at the Narrows continued to witness major construction as work progressed on

completing the new Fort Tompkins that was begun just prior to the Civil War. Work on the structure was largely complete by 1871, but work continued through 1876, although it was never fully completed. In the surrounding landscape, the new fort replaced the fenced pastureland, round stone bastions, and gently curving earthen road of the earlier fort with paved and straightened roads (present Hudson Road), engineered slopes, and expansive manicured lawn.

Fort Wadsworth was garrisoned by units of the Regular Artillery regiments in the decades following the Civil War. During this time, the number of men on post declined markedly, fluctuating between fifty and one hundred prior to 1890.[18] With much less military activity, and the completion of major construction at Fort Tompkins by 1876, the landscape of the military reservation began to assume a park-like character with only an occasional test firing of artillery. Within the wider scenic context of the island landscape, the dramatic beauty of the reservation with its bluff overlooking the harbor drew the attention and praise of both military and non-military visitors. General Sheridan, who inspected the reservation in the late summer of 1884, wrote that it was "a beautiful post."[19] Caroline Winne, wife of Army surgeon Captain Charles Winne, wrote in the closing years of the nineteenth century after many years on post that she was "...still discovering the attractions at Fort Wadsworth, such as walking in the woods, where she admired the great variety of wild flowers."[20]

THE LANDSCAPE OF THE BATTERY WEED HEADLAND (DRAWING 2)

With federal refortification of the Narrows that began with the construction of the new Fort Richmond in 1847, the landscape began to shift from its romantic, ruined character in the preceding decades since the end of the war with Britain, to a highly engineered, manicured appearance. The landscape during this time also became an integral part of a larger system of defenses designed by General Joseph G. Totten. The headland was carefully engineered to coordinate not only its site-specific conditions, but also a network of fortifications, particularly those on the opposite side of the channel on Long Island: Fort Lafayette as Fort Richmond's water-level counterpart, and Fort Hamilton as Fort Tompkins' upper-level counterpart.[21] (Figure 1.22)

Construction of the new Fort Richmond, which was completed at the close of the Civil War in 1864 at a cost of three quarters of a million dollars, had a marked impact on the surrounding landscape, most notably through replacement of the much smaller half-round fort.[22] The new granite fort was constructed seventy-five feet into the Narrows, which interrupted the natural beach that had remained in front of the old fort. (Figure 1.23) The northeast bastion was located between the high and low water marks. The eastern scarp or outer edge of the new fort was designed to parallel the main ship channel. [23] Given its watery

location, the stone structure was built on a network of wooden piles driven into the earth that supported granite foundation slabs. (Figure 1.24)

The granite block fort measured 286 feet along each channel front wall, and 450 feet along the west or inland scarp wall. Designed with three casemated tiers rising one on top of the other, the fort featured an open top fourth tier known as the barbette tier, which rose sixty-three feet above the Narrows. It was covered with earth and edged with a four foot high wall (parapet) along the channel side. Thirty-one gun emplacements, nine on each of the channel fronts and one in each bastion (corner position) were located on the barbette tier. The gun emplacements, circular raised brick and mortar pedestals, featured iron pintles, or pins, designed to attach to rotating cannon. The area surrounding the gun emplacements on top of the parapet was finished in turf. Circulation was along the interior edge of the barbette tier, which was fitted with an ornamented iron railing.

The increased size of the new Fort Richmond necessitated not only its extension into the Narrows, but also into the adjoining bluff near the southwest bastion. The bluff here was excavated and plans were developed for grading the area into an even, engineered slope. (Figure 1.25) The grading and excavation was, however, limited to a relatively small area and much of the bluff remained in its rocky, eroded, and tree-covered condition. Engineers constructed a retaining wall at the base of the steep slope to hold back the earth and provide a level area for the realigned roadway that extended along the base of the bluff. (Figure 1.26, 1.27) A second wall was constructed to retain the lower edge of the roadbed.

In an effort to inhibit direct ground attack by land or water, General Totten designed a moat around the entire fort. Entry to the fort would be only by way of a drawbridge that was later integrated into a two-story guardhouse completed in c.1860 on the west wall of the fort. (Figure 1.28) Plans for the moat called for it to have a depth of six and one-half feet along the gorge curtain, or landward side of the fort. The ditch was thirty feet wide at its widest point at the entrance to the fort and fifteen feet wide at the bastions. Because the fort was sited beyond the low-tide mark, a cofferdam was needed to allow for the construction of the outer walls of the moat (seawalls). The cofferdam, in place by 1855, was approximately forty feet out from the eastern scarp, and measured about sixteen feet wide, filled with cobbles and boulders contained within a timber frame. (Figure 1.29) The cofferdam also served as a temporary construction wharf.

In 1858, the Army began construction of a new stone dock (wharf) at the north end of the seawall, north of the fort. This replaced the cofferdam around the perimeter of Battery Weed that had been used as a temporary wharf, and

apparently supplemented a second wharf at the south end of the reservation. Measuring thirty-eight feet wide and eighty-one feet long, the north dock provided a permanent berthing place where cargo was unloaded, a necessity given the lack of land routes to Staten Island. Soon after the dock was completed, the Army built an inclined railway extending up the slope from the new dock. (Figures 1.30) The primary purpose of this railway was to bring supplies up to the top of the bluff where construction of the new Fort Tompkins was begun in 1859. Materials were lifted from ships on a davit and powered by steam engine over a horizontal distance of 700 feet and a vertical lift of 125 feet to the construction site.[24]

To the rear of the fort and north dock at the base of the bluff were six ancillary buildings, probably constructed of wood. Several of these may have existed prior to the federal government's acquisition of the reservation in 1847, while others were probably built to support the construction of Fort Richmond. The buildings extended in a row and included, from south to north, a smith shop, galvanizing building, store house, carpenter's shop, office, and a barn. (Figure 1.31)

During the Civil War, the federal government began construction on a number of new fortifications intended to supplement Fort Richmond and Fort Tompkins. On the headland, two massive earthen batteries were built beginning in 1862 along the shoreline to the north and south of Fort Richmond. Construction of the batteries required realignment of the roads as well as removal of the six support buildings at the base of the bluff. Named the North and South Cliff Batteries, each featured a massive earthen berm with a series of open barbette batteries on the top supporting fifteen-inch guns set on stone and concrete emplacements.[25] (Figure 1.32) The North Cliff Battery also featured an underground ammunition magazine known as a bomb-proof parados. This structure was constructed at the south end of the earthen battery, close to Fort Richmond. Access to the parados was by a narrow passage lined by granite retaining walls. The 1863 plan for the batteries also called for construction of an earthwork or berm along the top edge of the bluff with several gun emplacements, and the grading of the bluff into a uniform, engineered slope apparently intended as a sort of glacis for Fort Tompkins (see Figure 1.32). These changes were not made until after the Civil War.

Aside from its primary purpose as a fortification, the military reservation was a popular place for the public to visit in the years leading up to the Civil War, attracted in part by the ongoing construction of the two forts. An etching overlooking Fort Richmond from the top of the bluff published in 1852 illustrates visitors taking in the view of the construction of the new fort and the busy harbor in the background. (Figure 1.33) The etching also shows the irregular and apparently

eroded bluff and a signal house and semaphore station, successors to the earlier signal tower, perched at the edge of the bluff just east of the round bastions of the old Fort Tompkins. A two-rail pasture fence ran alongside an unpaved road at the top of the bluff. This illustration was apparently accompanied by the following article entitled "New York Bay and Harbor:"

> *...the view...from this high promontory, is truly beautiful; here opens from the sea, or lower bay, a fairy scene unsurpassed in the world, not excepting the bay of Naples. All tourists agree on this point. The bay...its smooth surface dotted over by numerous snow-white sails; the hurrying to and fro of hundreds of steamboats, packet ships, and smaller craft, continually passing in and out; while here and there is a gigantic ocean steamer from old Europe. The whole forms a picture of brilliancy, which defies the painter's pencil or the poet's pen.*[26]

This scene was also the subject of an etching produced in 1860, looking over the southwest bastion of Fort Richmond from the top of the bluff, with the Great Eastern steamship sailing up the Narrows. (Figure 1.34) This illustration shows the watered moat with visitors strolling on top of the seawall. Others appear to be taking in the view from the barbette tier of the fort. In c.1872, Fort Richmond—by then renamed Fort Wadsworth—was the subject of a painting by soldier and artist Seth Eastman. (Figure 1.35) Viewed from Fort LaFayette across the Narrows, the painting depicts the massive fortress set against the rough bluff with the low profile of Fort Tompkins above. This water-level view of the fort clearly illustrated its formidable presence on the Narrows.

The character of the landscape surrounding the military fortifications changed markedly in the years soon after this painting was completed. Much of the change was not related to major new building construction, aside from addition of a boathouse on the north dock in 1877, but rather to refinement of the landscape. The long years of construction at the reservation had resulted in irregular piles of earth and improper drainage. Grading and maintenance of the grounds was not just an aesthetic improvement, but was also considered an important contribution to the military readiness of the forts and batteries. The condition of the landscape had also become a matter of public concern. Nearby residents believed drainage problems resulting from the unevenness of the ground contributed to a higher than usual incidence of malaria in the nearby Village of Edgewater. They petitioned the Secretary of War and Congress for appropriations to carry out the needed landscape improvements. In 1873, perhaps as a result of this public pressure, the grounds surrounding Fort Tompkins and Fort Richmond were cleared of vegetation and graded into even slopes. (Figure 1.36) After grading, the exposed soil on parapets, parados,

traverses, terrepleins, glacis, and elsewhere was finished in turf, resulting in a look of manicured lawn.[27] The turf was necessary to hold down the earth and prevent erosion, while mowing kept the ground open and free of obstructing woody vegetation.

One of the most noticeable of these landscape changes was the extensive grading of the bluff to an even, engineered slope, completing the plans drawn in c.1863 and extending the work that had been completed earlier to the section off the southwest bastion of Fort Wadsworth. (Figure 1.37, see also 1.36) Completed in c.1873, the grading transformed the once craggy bluff above the fort into a carefully groomed, steeply sloping lawn. With this grading, the site became spatially open and views to the northeast, east, and southeast were no longer framed with trees and rock outcrops, but completely unrestricted. This change was necessary from a military need in order to provide clear lines of sight from the new Fort Tompkins. It was probably as part of this grading that the earthwork at the top of the slope parallel to Fort Tompkins, proposed in the c.1863 plan, was constructed (see Figure 1.36). The earthwork, referred to as a covered way, featured a road along its inner side, later known as Hudson Road, and two gun emplacements at its south end aimed southeast toward Lower New York Bay.

The engineered slope with its finely manicured lawn is illustrated in a postcard dating to c.1890 looking north toward officers' quarters and post headquarters north of Fort Tompkins on Mount Sec Avenue. (Figure 1.38) The postcard also shows the turf glacis extending off the north end of Fort Tompkins, Hudson Road, and the road leading down to Fort Wadsworth, later known as Battery Weed Road, surfaced either in macadam or fine gravel. This park-like setting proved popular with visitors, who continued to come for the spectacle of the busy harbor. Visitors also picnicked along the crest of the slope and strolled along the seawall around the waterfront of Fort Wadsworth.[28]

Perhaps the most revealing description of the Battery Weed landscape during the late nineteenth century comes from an 1889 Staten Island guidebook by Reau Campbell. Although written two years after the end of this period, this account expresses the character of the headland landscape as it had developed over the previous decades. Campbell describes the experience of visitors who came to the military reservation for a stroll and to take in the view:

> *Fort Wadsworth is a more formidable name than Rosebank* [a neighborhood to the north], *but in these piping times of peace the Fort is a good place to go for a summer's jaunt...Passing in front of the Officers' quarters, a row of comfortable houses with the Commandant's elegant one on the bluff overlooking the sea; then come to the grassy parapets. There is a*

> *smooth pathway all along the top. The view is magnificent. A hundred feet below is the granite lower fort* [Battery Weed] *bristling with a hundred guns...These parapets do not look as made for war, but for lovers' uses. It is a veritable lovers' walk. The gentle sloping* [sic] *requires a slow walk, and there is time to say many pretty words before the end is reached; and the green grass is an inviting resting place, where one may sit and watch the ships come and go...The music from Fort Hamilton comes floating on the summer air across the Narrows...Fort Wadsworth offers everything for a delightful ramble on a summer's day.*[29]

Between 1847 and 1885, the landscape of the old state military reservation at the Narrows was transformed under federal ownership. Aside from the two new stone fortresses and extensive lines of earthen batteries, the once wooded and rocky bluff had been cleared, graded smooth and planted with grasses. Views of the bay from the crest of the slope, once framed with mature trees, were now spatially open, unrestricted, and covered with neatly groomed lawn. Despite the change to a more engineered appearance, the public continued to visit the military reservation, particularly for the walk along the top of the slope and down to Fort Richmond to take in the panoramic view of the harbor. This use, in conjunction with decreased military activity, lent the landscape the feeling of a public park and promenade. In the decades to come, the landscape of the Battery Weed headland would see the addition of many military structures and technological advances, but its overall character as developed during this period would persist.

ENDNOTES

[1] Frederick R. Black, *A History of Fort Wadsworth, New York Harbor* (Boston, Massachusetts: U.S. Department of the Interior National Park Service North Atlantic Regional Office, Cultural Resources Management Study N0.7, 1983), 85.

[2] Elizabeth Barlow Rogers, *Landscape Architecture A Cultural and Architectural History* (New York: Harry N. Abrams, Inc., 2001), 337.

[3] Norman T. Newton, *Design on the Land The Development of Landscape Architecture* (Cambridge, Massachusetts and London, England: Belknap Press, Harvard 1981), 263; Rogers, 217.

[4] Edna Holden, Principle Researcher, *Staten Island, A Resource Manual for School and Community* (New York, NY: Board of Education of the City of New York, Bureau of Curriculum Research, 1964), 65.

[5] George W. Hilton, *The Staten Island Ferry* (Berkeley CA: Howell-North, 1964), 19, 53.

[6] Holden, 140.

[7] National Park Service Arrowhead, From Marsh to Farm, The Landscape Transformation of Coastal New Jersey (accessed 8 June 2007), http://www.cr.nps.gov/history/online_books/nj3/chap5.htm.

[8] Jaspar Cropsey (accessed 8 March 2007), http://www.newingtoncropsey.com/jasper.htm.

[9] Laura Wood Roper, *FLO, A Biography of Frederick Law Olmsted* (Baltimore: The Johns Hopkins University Press, 1973), 56.

[10] Emanuel Raymond Lewis, *Seacoast Fortifications of the United States An Introductory History* (Annapolis, Maryland: Naval Institute Press, 1979), 38-60.

[11] Holden, 65.

[12] Ingrid Wuebber and Edward M. Morin, URS Corporation, "Phase 1A Archeological Investigation Rehabilitate Battery Weed Seawall and Dock Fort Wadsworth Unit, Gateway National Recreation Area Staten Island, New York" (Unpublished report prepared for the National Park Service, 2006), 3.12.

[13] Holden, 85.

[14] Black, 103.

15 Black, 78-80.

[16] Black, 82-85.

[17] Black, 100.

[18] Black, 97.

[19] Black, 97.

[20] Black, 99.

[21] Black, 70.

[22] Black, 71.

[23] Black, 70.

[24] Black, 78, 79.

[25] Black, 81.

[26] Quote from unidentified newspaper article titled "*New York Bay and Harbor*," Saturday, September 25, 1852, clipping in collection of Staten Island Institute of Arts and Sciences.

[27] Holden, 100.

[28] Black, 99.

[29] Quoted in Black, 101, 102.

Figure 1.15: Illustration by Henry S. Beckwith looking north across New York Harbor toward Manhattan from the bluff above Fort Richmond, c.1850. The top of the construction rig at work on the new Fort Richmond is just visible at the base of the bluff. The round bastions of Fort Tompkins and a pasture fence are visible on the top of the bluff. Department of Prints, Photographs and Architectural Collections, PR 020, Box 1-Staten Island, New-York Historical Society, New York New York.

Figure 1.16: A c.1854 bird's-eye-view by John Bornet showing country estates on Staten Island and the federal fortifications at the Narrows. Reproduced from John A. Kouwenhoven, The Columbia Historical Portrait of New York (New York: Doubleday & Company, Inc., 1953), annotated by SUNY ESF.

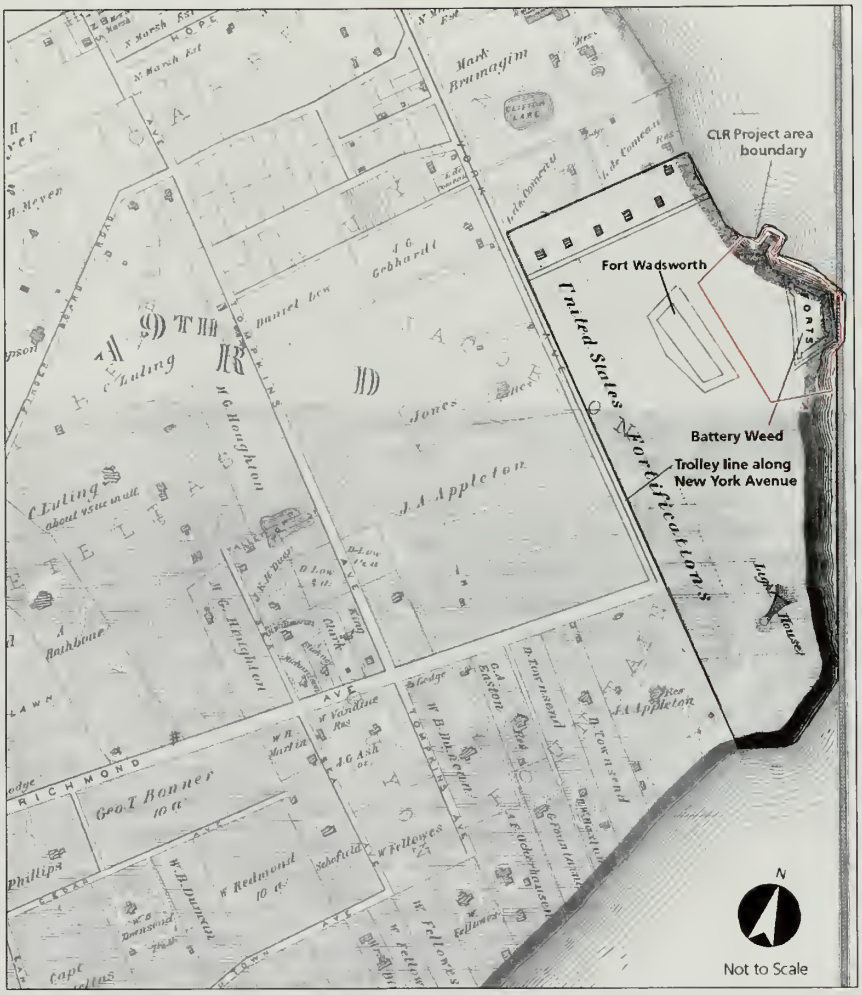


Figure 1.17: Detail of an 1874 atlas of Staten Island showing the development of country estates in the area surrounding the federal military reservation. Collection of the Staten Island Institute of Arts & Sciences, annotated by SUNY ESF.

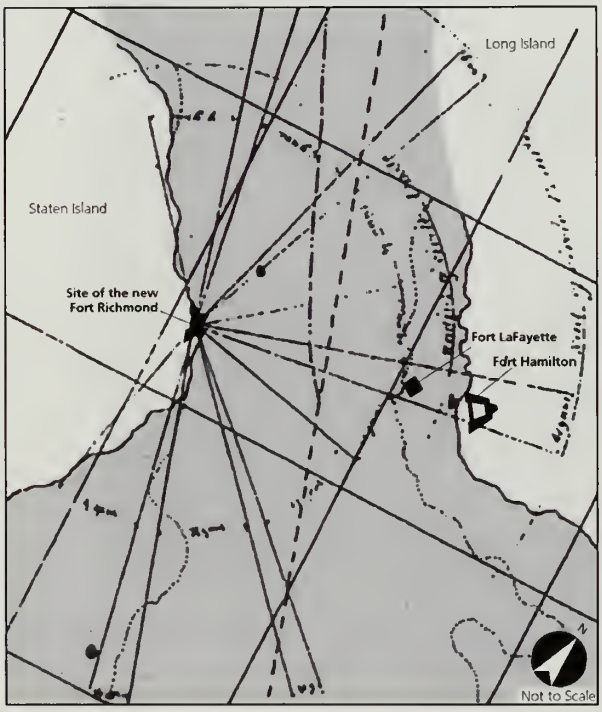


Figure 1.18: Detail from an 1846 plan for the federal fortification of the Narrows showing the relationship of lines of fire from the new Fort Richmond to Forts Lafayette and Hamilton on the Brooklyn side. RG77, Dr 43, Sht. 3, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

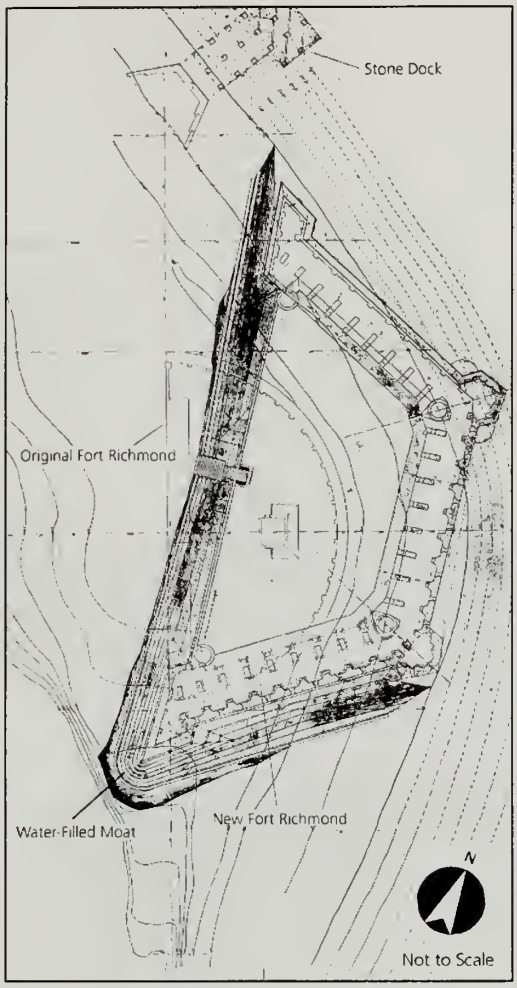


Figure 1.19: Detail of an 1846 plan showing the proposed location of the new Fort Richmond in relationship to the original Fort Richmond, with the dock to the north. RG 77, Dr 43, Sht. 3, Cartographic Division , National Archives II, College Park, Maryland, annotated by SUNY ESF.

Figure 1.20: A c.1847 illustration of the new Fort Richmond (Battery Weed) under construction looking northeast. Note the pivoting crane and workers with horses and carts. Image 19383, Gateway National Recreation Area Archives, Fort Wadsworth.

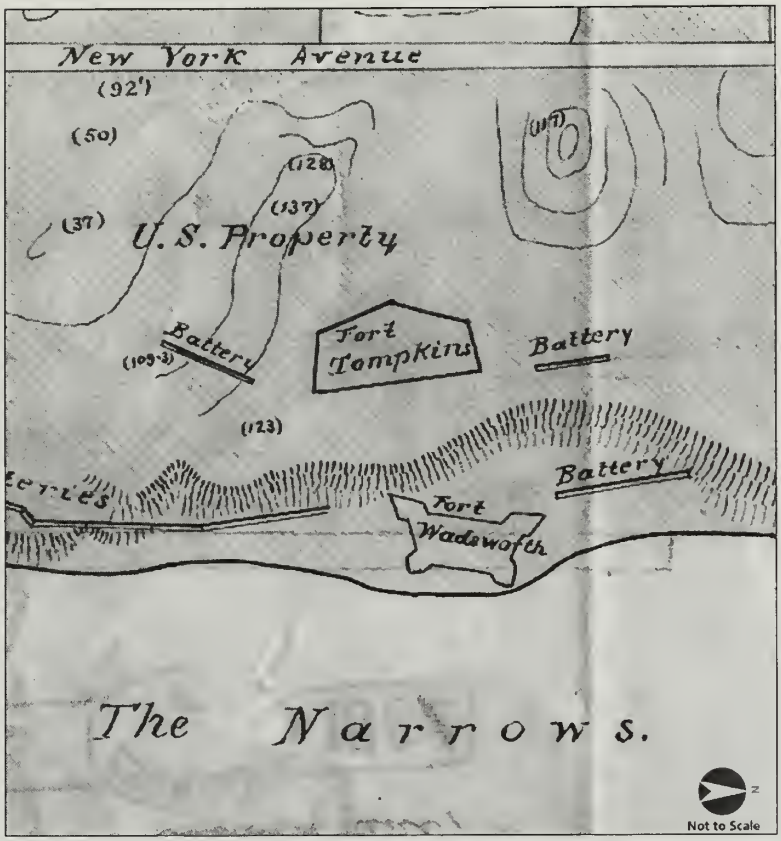


Figure 1.21: Plan of the U. S. military fortifications drawn in 1882 showing footprint of new Fort Tompkins begun in 1859. RG 77, Dr 41, Sht. 91, Cartographic Division, National Archives II, College Park, Maryland.

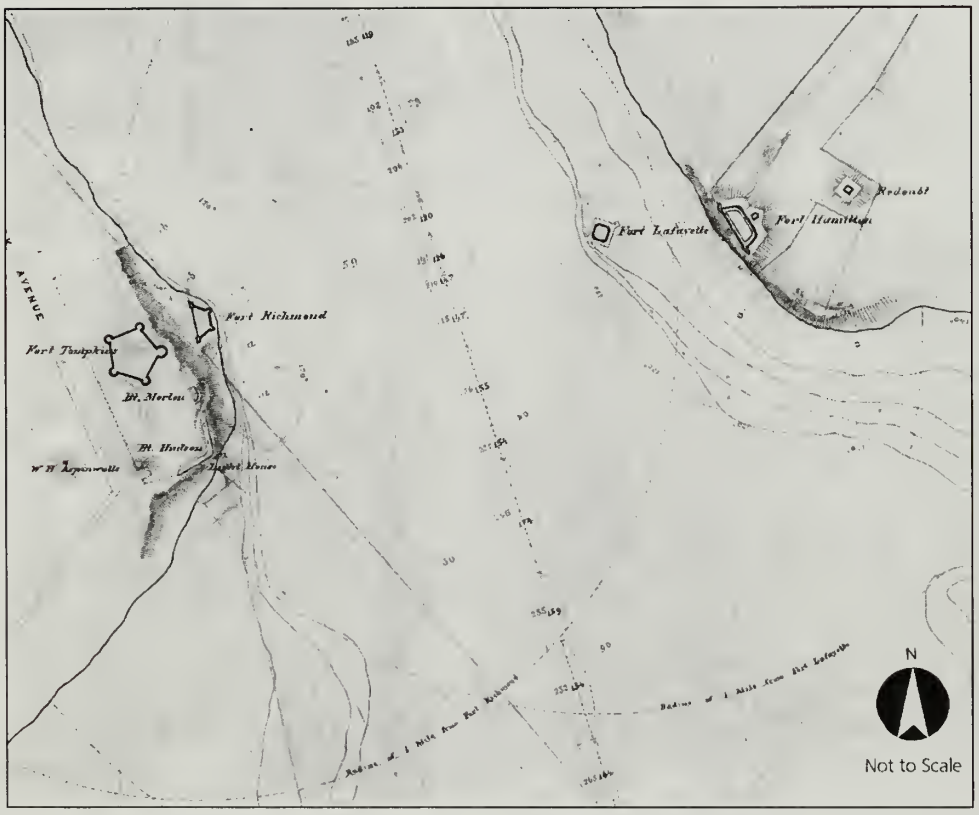


Figure 1.22: An 1857 plan showing the context of the new Fort Richmond as part of a system of fortifications in the Narrows. The old Fort Tompkins had not yet been replaced. RG 77, Dr 36, Sht. 65, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

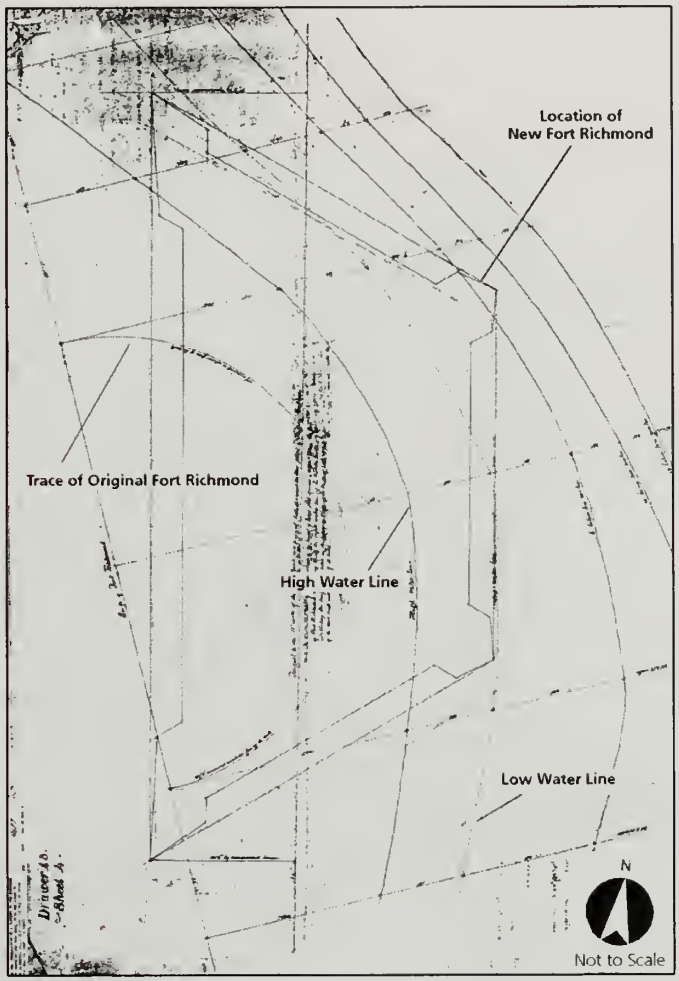


Figure 1.23: Sketch made in 1847 showing the planned location of the new Fort Richmond over the trace of the original Fort Richmond on the waterfront between the high and low water lines. RG 77, Dr 43, Sht. 4, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

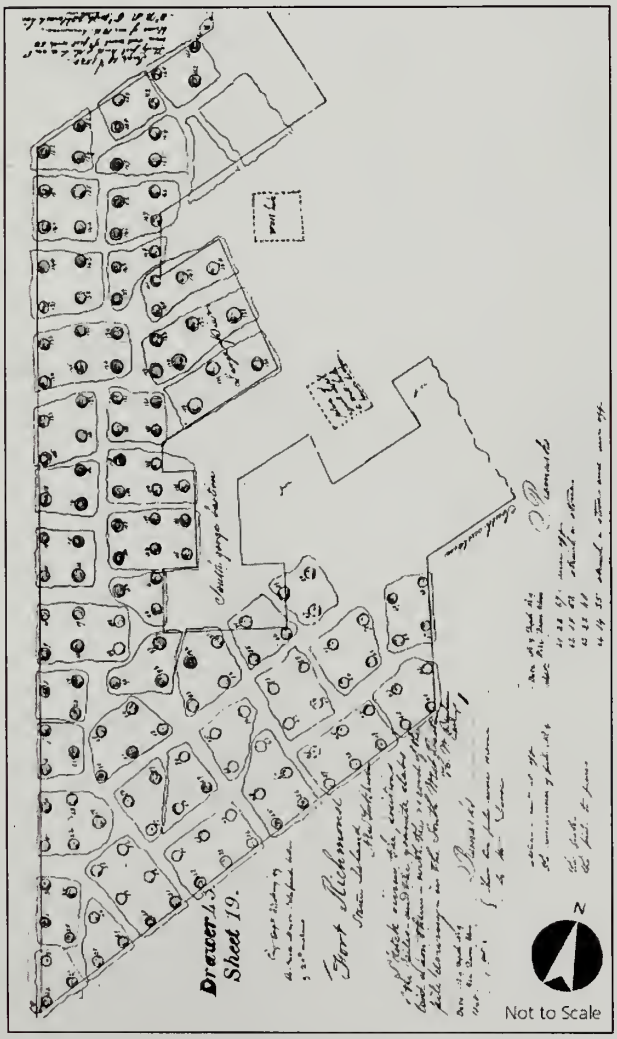


Figure 1.24: An 1849 plan showing arrangement and progress of the wood piles and the large granite slabs set upon them at the southwest bastion. This structure formed the foundation of the new Fort Richmond. The text consists of construction notes. RG 77, Dr 43, Sht. 19, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

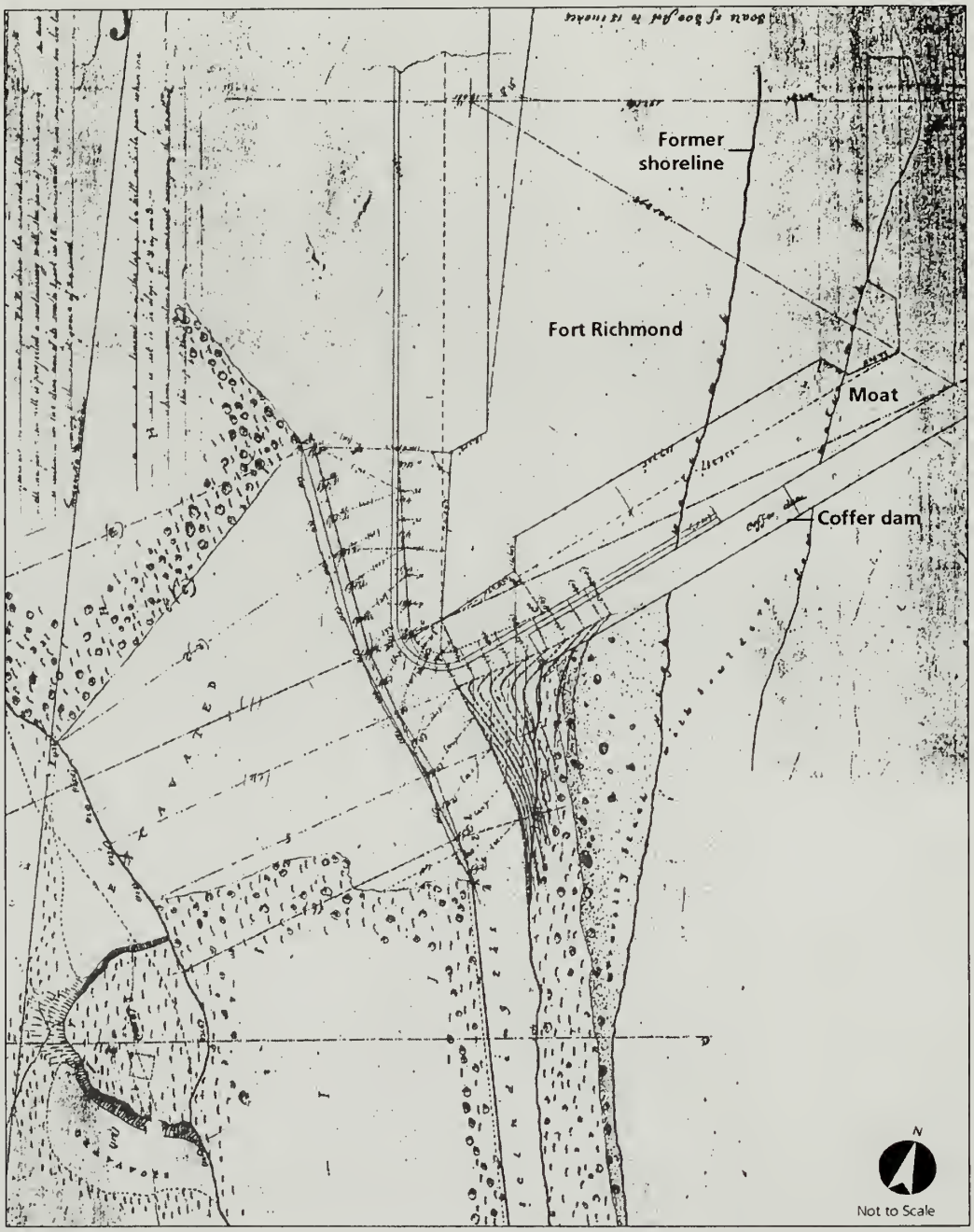


Figure 1.25: Plan titled "Sketch of the ground adjoining the south west salient of Fort Richmond (Staten Island) and the hill with a proposed wall to sustain the foot of the its slope," 1848. The plan shows the proposed graded portion of the bluff above the southwest bastion of the new Fort Richmond. RG 77, Dr 43, Sht. 12, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF

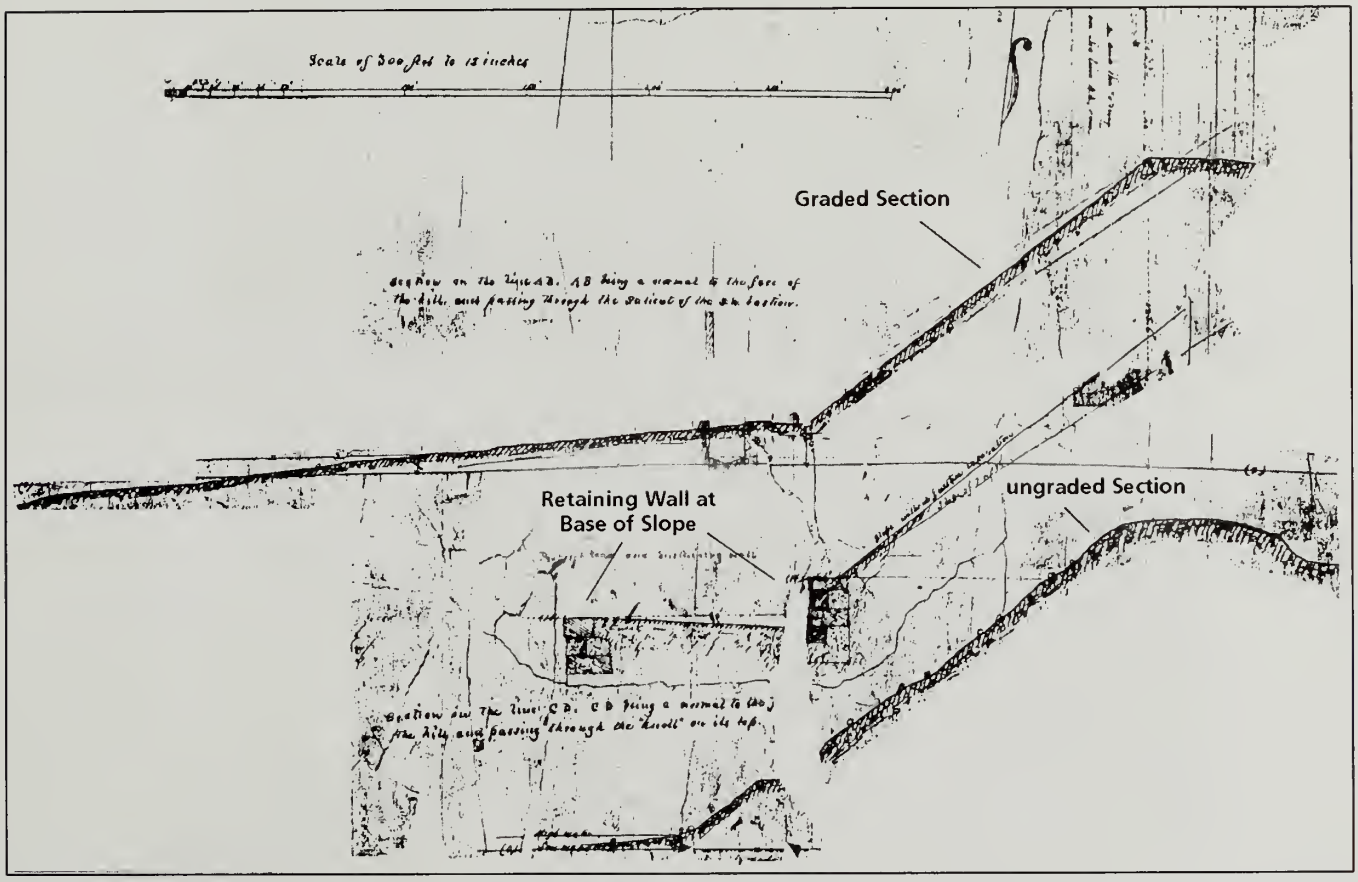


Figure 1.26: Two sections taken across the slope above the new Fort Richmond showing the existing slope and the area to be graded, 1848. The drawing also shows the planned retaining wall to be constructed at the base of the graded area. RG 77, Dr 43, Sht. 12, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

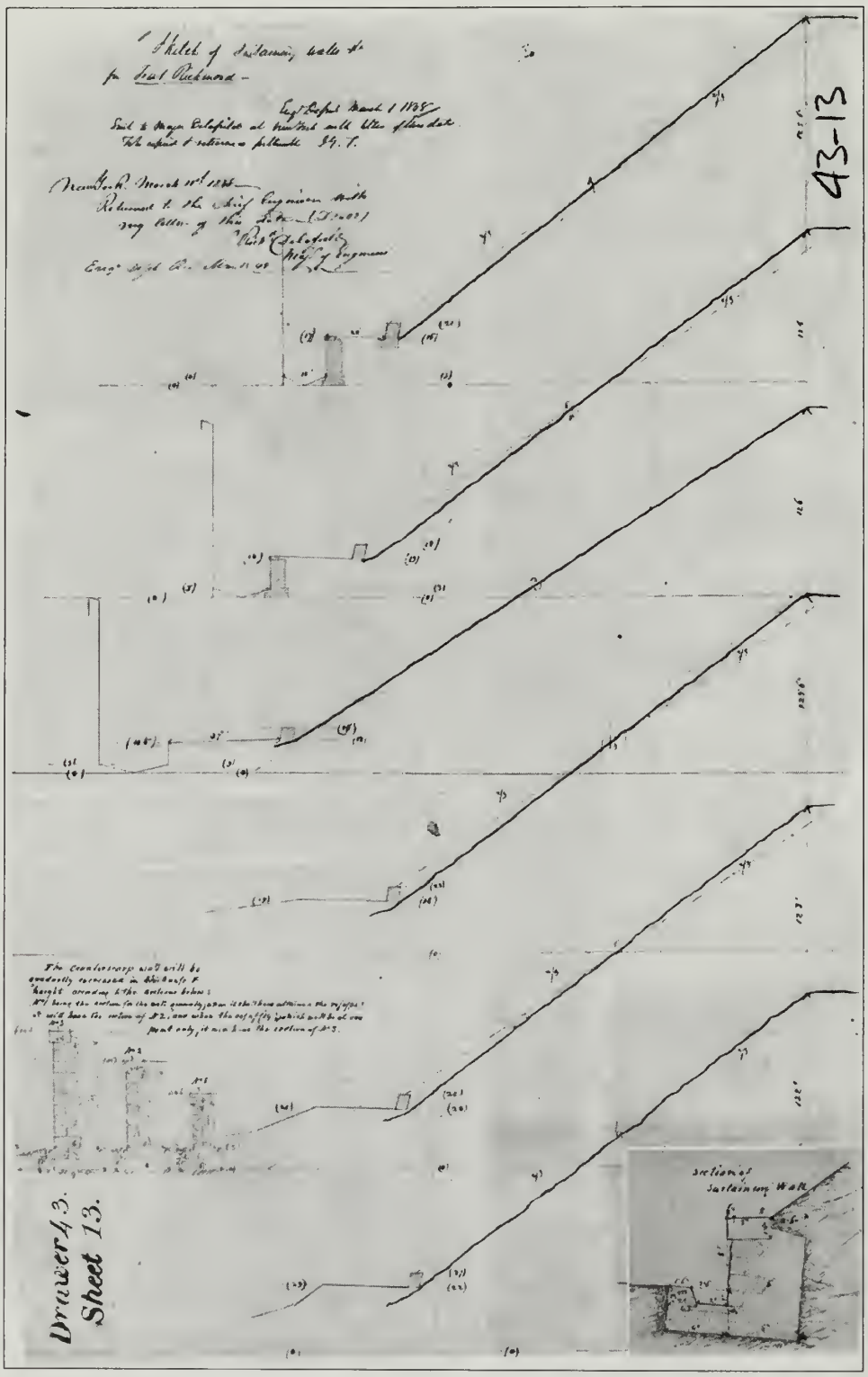


Figure 1.27: Section drawings made in 1848 looking south across the southwest bastion showing proposed grading of the bluff into an engineered slope. The plan gradually increased the thickness and height of the counterscarp (retaining) wall at the base of the slope along the road. The section at the lower right corner shows a detail section of the retaining wall and gutter. RG 77, Dr 43, Sht. 13, Cartographic Division, National Archives II, College Park, Maryland.

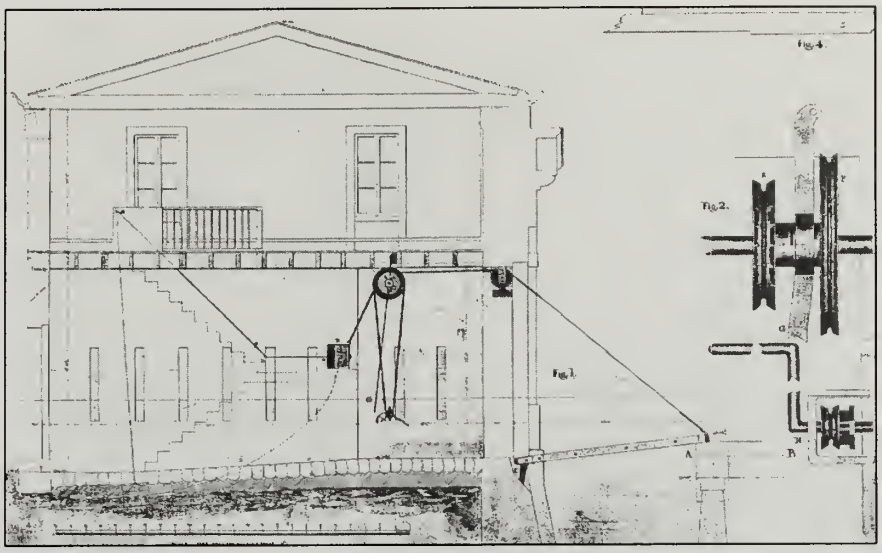


Figure 1.28: Drawing made in 1860 showing a cross-section looking south through the Fort Richmond guardhouse and drawbridge. The drawbridge, which could be raised or lowered into place over the water-filled moat on the west wall of the fortress, provided the only entrance to the interior of the fort. RG 77, Dr 43, Sht. 53, Cartographic Division, National Archives II, College Park, Maryland.

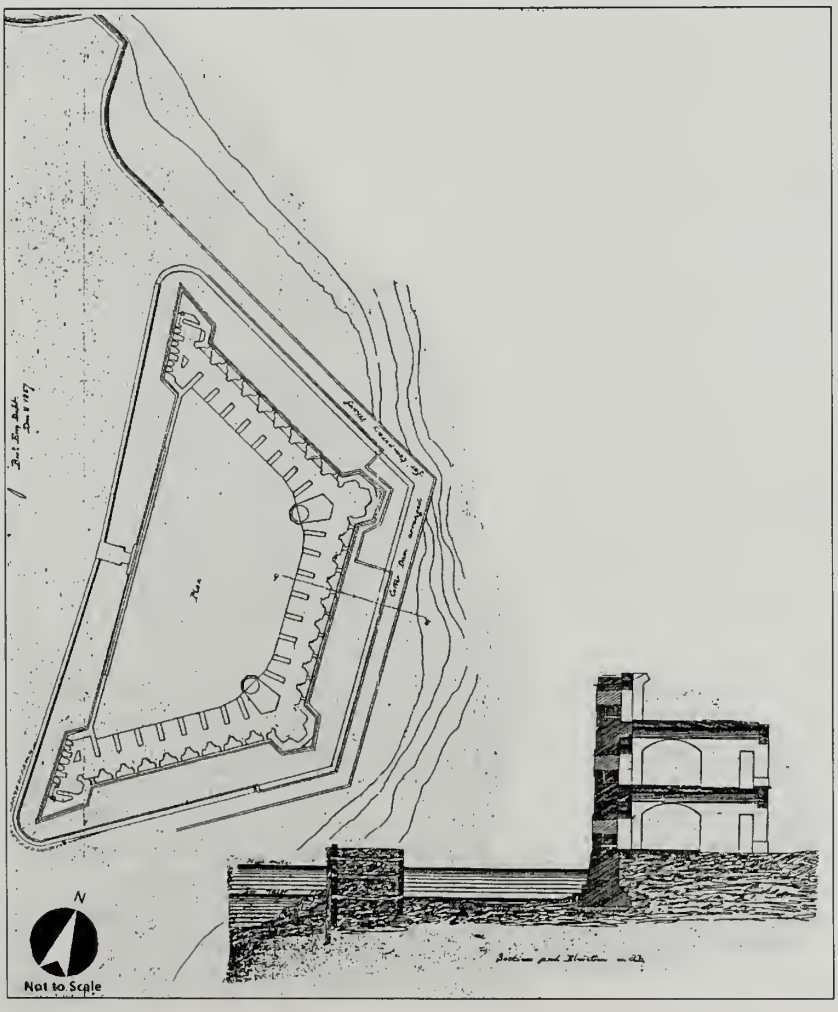


Figure 1.29: Plan and section drawings made in 1857 showing the moat and cobble filled timber cofferdam to the east of the fortress built to allow construction of the permanent stone seawall. Note that the dock has not yet been built at the bulkhead visible at the top of the drawing. RG 77, Dr 43, Sht. 46, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

Figure 1.30: Drawing made in c.1863 looking south at Fort Richmond with the inclined railway extending from the dock up the bluff. The railway was used to move construction materials to the Fort Tompkins construction site. Image 19411, Gateway National Recreation Area Archives, Fort Wadsworth.

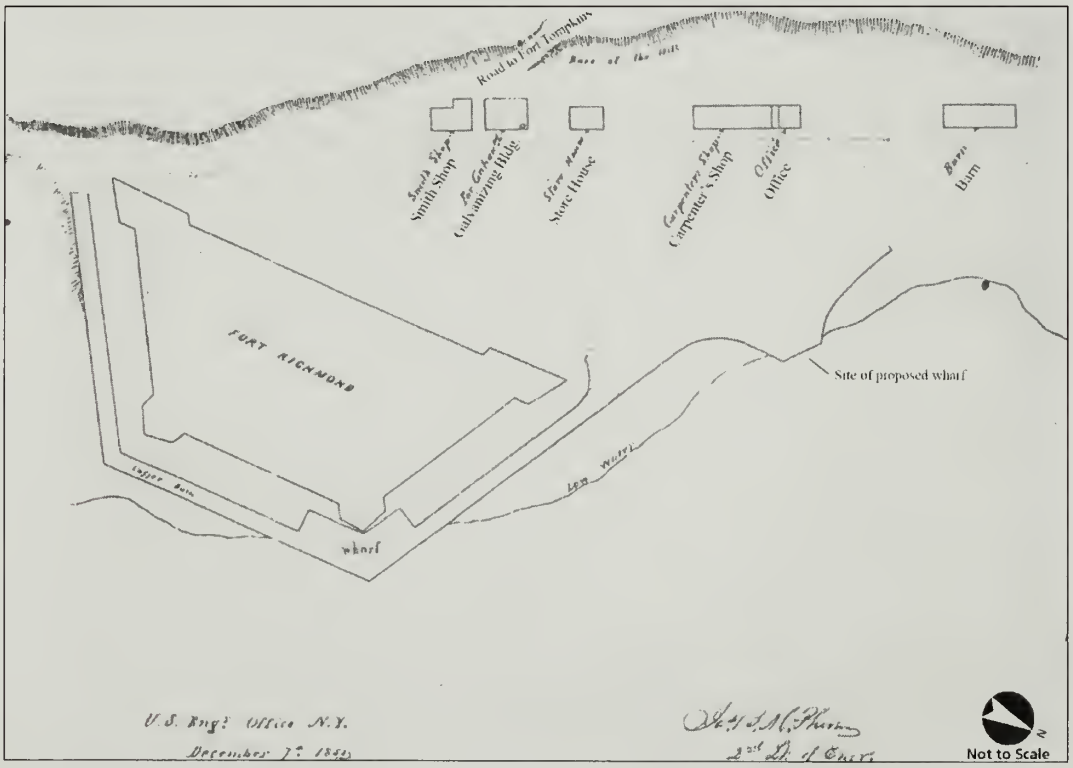


Figure 1.31: A drawing of the headland made in 1855 Lieutenant James B. McPherson showing the line of support buildings at the base of the bluff to the rear of Fort Richmond. The drawing also shows the cofferdam used as a temporary wharf and the site of the permanent wharf (dock) that was begun three years later. Reproduced from Ingrid Wuebber and Edward M. Morin, "Phase 1A Archeological Investigation Rehabilitate Battery Weed Seawall and Dock" (Unpublished report prepared for the National Park Service by URS Corporation, 2006), further annotated by SUNY ESF.

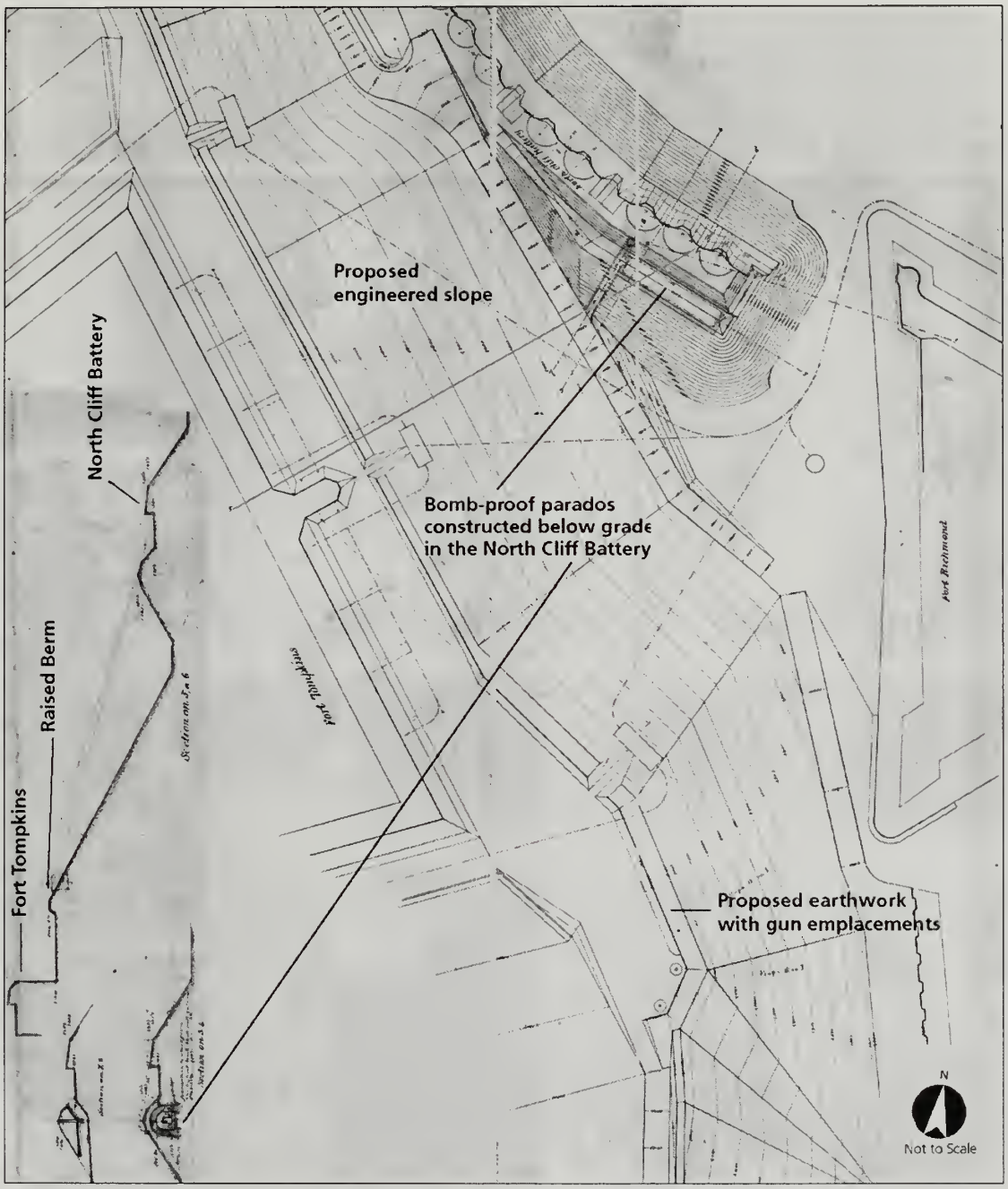


Figure 1.32: Detail of a plan and sections drawn made in c.1863 showing the location of North Cliff Battery with below grade bomb-proof parados in relationship to Fort Richmond (Battery Weed) and Fort Tompkins, realignment of roads, and removal of the support buildings at the base of the bluff. The plan also shows proposed grading of the bluff, and an earthwork with gun emplacements at the top of the bluff. This work was not completed until after the Civil War. RG 77, Dr 41, Sht. 55, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

Figure 1.33: Etching published in 1852 looking north, titled "View of the New York Bay and Harbor, From the Telegraph Station." This illustration depicts the ongoing construction of the new Fort Richmond on the waterfront below the steep and eroded bluff. From a newspaper or journal clipping, Staten Island Institute of Arts and Sciences, Staten Island, New York.

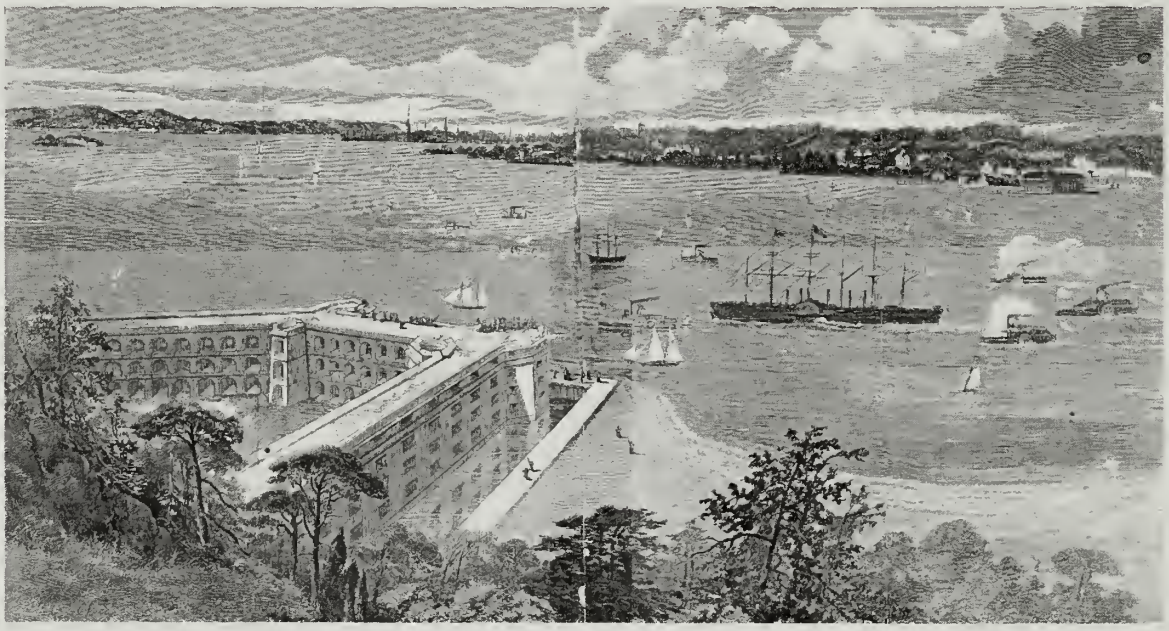


Figure 1.34: Etching of the Narrows published in 1860 looking northeast from the crest of the bluff above Fort Richmond (Battery Weed) with the "Great Eastern" steamship sailing into the harbor of New York. Note the water-filled moat with visitors strolling along the seawall. The graded slope was apparently to the left of the trees in the foreground. Collection of the Staten Island Institute of Arts and Sciences.

Figure 1.35: Painting by artist and Army soldier, Seth Eastman of Battery Weed, looking east from Fort LaFayette in the Narrows, c.1872. Fort Tompkins is the structure above Battery Weed and at left is the Wadsworth lighthouse. Collection of the U. S. Army Center for Military History, reproduced from Prints & Posters, The Eastman Forts, http://www.history.army.mil/ html/artphoto/pripos/eastman1.html (accessed February 2008).

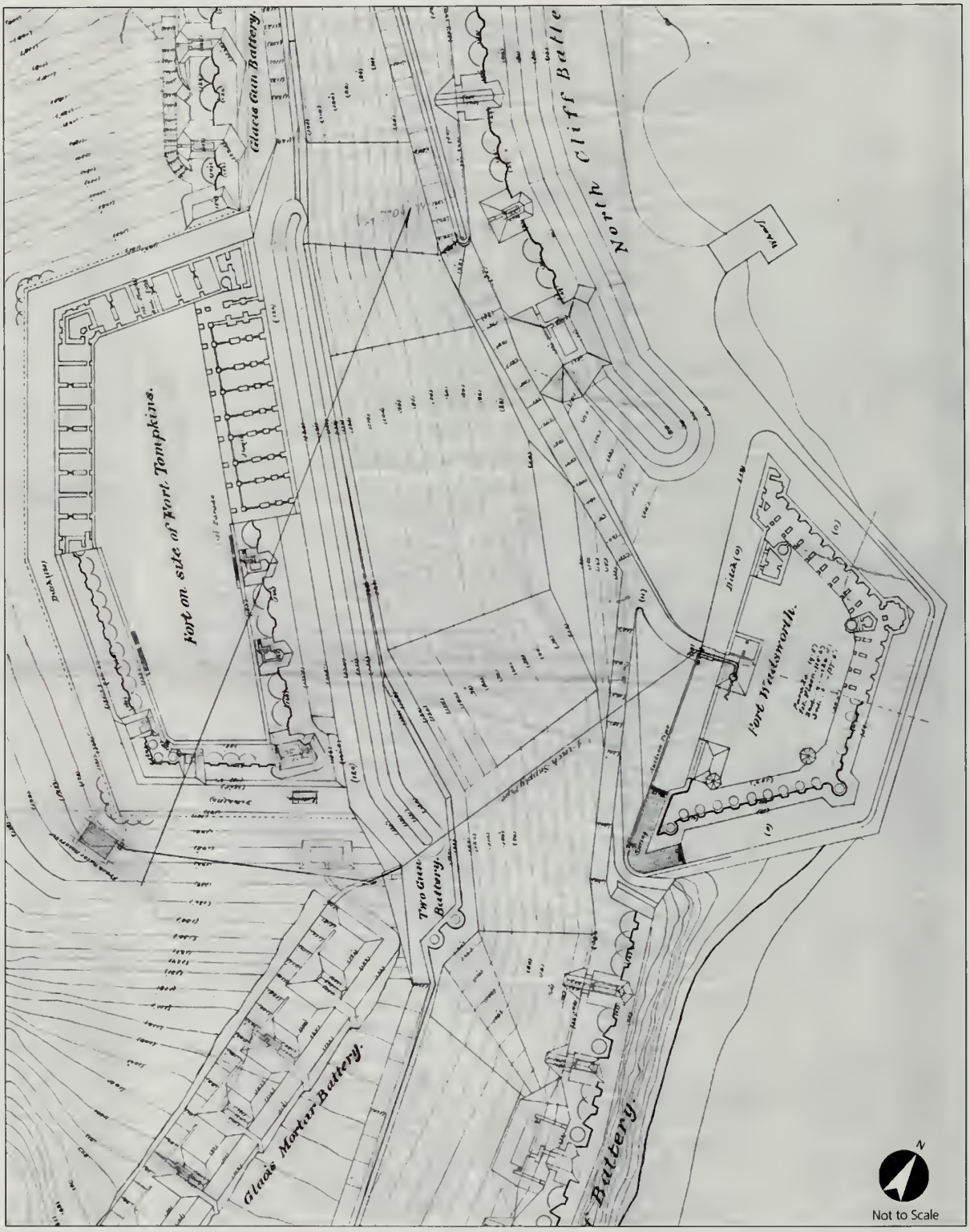
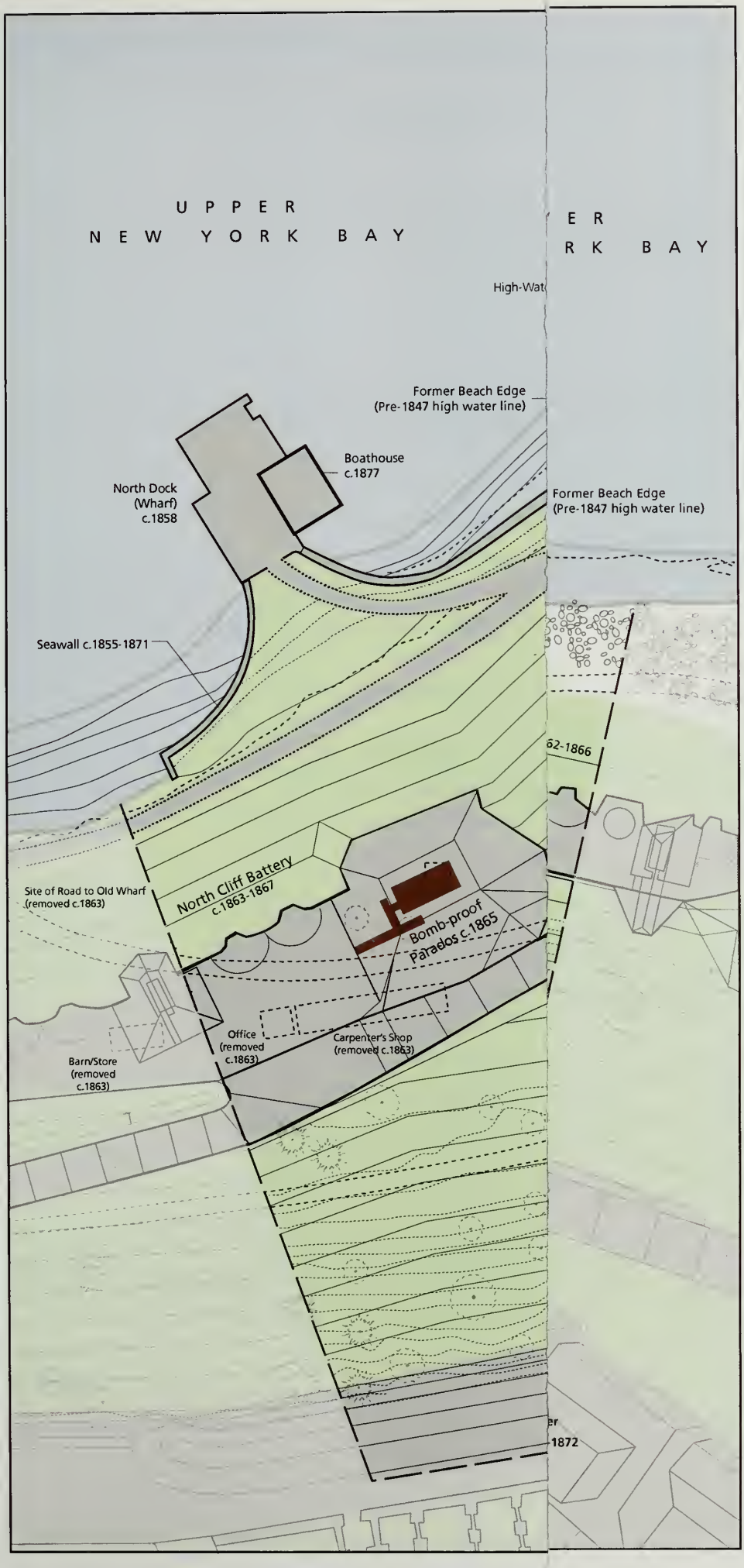


Figure 1.36: Plan drawn in 1886 documenting the landscape of the Battery Weed headland at it had developed through the end of the Third System period following extensive grading work during the 1870s. Documented on the plan are Fort Wadsworth (Battery Weed) and dock (wharf), flanking North and South Cliff Batteries, the engineered slope, earthwork and two gun batteries at the top of the slope below the new Fort Tompkins. The plan was still watered in 1885 prior to completion of this plan. RG 77, Dr 41, Sht. A, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

Figure 1.37: Drawing made in c.1880 looking north from the overlook above Fort Wadsworth (Battery Weed) depicting the treeless engineered slope completed in c.1873. The etching also shows the water-filled moat with its drawbridge into the fort interior. Department of Prints, Photographs and Architectural Collections, Image PR 020, Box 1-Staten Island, Waterfront Views, New-York Historical Society, New York New York.

Figure 1.38: Postcard dating to c.1890 looking north at the officers' quarters on Mount Sec Avenue from the top of the engineered slope northeast of Battery Weed showing conditions typical for the end of this period. Note the highly-manicured character of the landscape, with most ground covered by mown grass. At left is the Fort Tompkins glacis and Hudson Road, to the right, Battery Weed Road. The large house at right was a private residence outside of the military reservation. Image 104709, New York Public Library Digital Gallery, http://digitalgallery nypl.org/nypldigital/.



Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area
Staten Island, New York

Third System Period 1847 - 1885

OLMSTED CENTER
for LANDSCAPE PRESERVATION

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

in partnership with:

Department of Landscape Architecture
SUNY College of Environmental Science and Forestry
Syracuse, New York

SOURCES

1. Plan of Fort Wadsworth, 1846 (Army)
2. Ft. Wadsworth map, 1855 (McPherson)
3. Plan of Fort Wadsworth, 1857 (Army)
4. Plan of North Cliff Battery, 1871 (Army)
5. Topographic survey of reservation, 1886 (Army)

DRAWN BY

Jean B. Gleisner, Illustrator CS3, 2008

LEGEND

- Assumed Feature
- Removed During Period
- Added During Period
- 5' Contour
- Subsurface Structure/Foundation
- Building or Structure
- Paved Road
- Water Pipe
- Pre-1873 Slope Contours
- Cofferdam
- Project Area
- Moat
- Turf
- Conifer Tree/Shrub
- Deciduous Tree/Shrub
- Rocky Beach

NOTES

Plan illustrates conditions in 1885.
Dates shown indicate initial construction and/or removal during period.
For features built prior to the period, no date is given.
All vegetation shown in approximate scale and location.
Names indicated are those used during the period, when known.

N

0' 40' 80' 120' 160'

Drawing 2

Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area
Staten Island, New York

Third System Period
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National Park Service
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Dates shown indicate initial construction and/or removal during period
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N

0' 40' 80' 120' 160'

Drawing 2

ENDICOTT PERIOD AND WORLD WARS I & II, 1886–1945

From 1886 to 1945, the landscape of the Battery Weed headland was developed and adjusted repeatedly as the military reservation adjusted to technological innovations in a new phase of coastal defense known as the Endicott period. Fort Wadsworth, renamed Battery Weed in 1902 after Brigadier General Steven H. Weed who was killed at Gettysburg, was adapted from its function for heavy ordinance to being a storehouse and part of an extensive underwater mine defense system, one of the chief technological innovations of the Endicott period. This system included additions to Battery Weed, construction of a railway system to transport torpedoes, modification of the north dock, and construction of several support buildings. In addition to the mine defense system, changes during this period also included reconstruction of the North and South Cliff Batteries to accommodate upgraded weaponry. After World War I and end of the Endicott period, the Battery Weed headland entered another period of minimal military activity when few changes came to the landscape.

STATEN ISLAND – NEW YORK CITY BOROUGH

At the end of the nineteenth century, northeastern Staten Island in the vicinity of the U. S. military reservation was in transition as new transportation links to rapidly urbanizing New Jersey fostered industrial and residential development. In response to its development potential as well as efforts to secure ties to New York, Staten Island was incorporated as one of the five boroughs of Greater New York City in 1898.

While regular ferry service to Manhattan continued throughout this period, the shift in the island's transportation network came with the first railroad bridge to New Jersey completed in 1889. The increasing use of automobiles further spurred development and connections to New Jersey, with three bridges to Staten Island opening between 1928 and 1931.[1] Within the island, transportation improvements included a street-car trolley started in 1886, which began at St. George on the northeastern shore of Staten Island, ran south on New York Avenue, and turned west on Richmond Avenue within the military reservation. (Figure 1.39) Here, riders could get off to walk the short distance to the bluff above the Narrows to take in the panoramic views of New York Harbor, or continue to the end of the line at South Beach, a short distance from Fort Wadsworth. [2] A separate dedicated rail line, the Staten Island Rapid Transit Railway, was built prior to 1907 running roughly parallel to the trolley line (see Figure 1.39).

These changes in transportation and increasing industrialization during the late nineteenth and early twentieth centuries led to continual residential growth, with street-car suburbs replacing many of the former large country estates in the vicinity of the Narrows. The population of Staten Island gained nearly 100,000 people between 1900 and 1930, when it totaled 158,346. Much of this growth was concentrated on the northern side of the island, while the central and southern portions remaining sparsely developed. By the first decade of the twentieth century, the area to the north and west of the military reservation was largely small-lot residential neighborhoods, with a few remnant country estates remaining on larger lots (see Figure 1.39).

In addition to residential and industrial development, Staten Island continued to offer recreational attractions during this period. Amusement parks, including Happyland Park and resort hotels at South Beach less than a mile to the southwest of Battery Weed, became well known throughout the New York area by the turn of the century, attracting thousands of visitors.[3] (Figures 1.40) Many of these visitors passed through the military reservation on the trolley line that ran down New York Avenue, which included a car named "Fort Wadsworth." (Figure 1.41) The trolley line would continue to run until 1934, when the automobile became the preferred means of personal transportation.[4]

THE ENDICOTT PERIOD [5]

During the 1880s, a more active foreign policy and associated naval build-up focused action on the nation's antiquated system of coastal defense and the need to adapt to major technological advances in weaponry. In 1885, President Grover Cleveland convened a joint Army-Navy-civilian board under the direction of Secretary of War William Endicott to develop recommendations for upgrading coastal defense systems to respond to the threats of newly developed weapons. The so-called Endicott Board issued its recommendations in 1886 calling for larger guns, floating batteries, torpedo boats, and submarine mines. The most evident physical change was the shift in emphasis from the walled fort to the weapons themselves. Now built of reinforced concrete, new batteries were dispersed along the shoreline with two to four large mortars designed to blend with the surrounding landscape.

Major armaments of the Endicott Period included three classes. The first was flat-trajectory weapons mounted on disappearing-type carriages in massive emplacements. The second class included heavy armament that fired twelve-inch mortars, clustered in groups of four with dugout emplacements behind hills or parapets that shielded them from enemy fire. The third class of weapons involved

marine minefields designed to prevent penetration by shallow-draft vessels, supported by an onshore battery of rapid-fire guns.[6]

This third class of weapons would become the primary function of the Battery Weed headland during this period. Marine mine defense systems involved the deployment of contact mines in buoyant cases anchored to float just under the surface of the water. The mines were usually designed to be electrically detonated by a signal sent through a single-conductor cable from an on-shore fire control operator. This operator was located in a mine casemate which housed all necessary electrical and control apparatus. Mines were positioned visibly to force vessels to slow down and allow guns in on-shore batteries to command a field of fire. In addition to the mine casemate, the system also required the construction of loading wharfs and storage facilities for the cables, mines, and anchors. With electronically-controlled firing technology, Endicott mine defense systems did not interfere with friendly shipping traffic, an especially important consideration for busy shipping channels such as the entrance to New York Harbor.[7]

In the years after World War I, the Endicott system of coastal defenses was superseded by new systems focusing on anti-aircraft. While many coastal fortifications were outfitted with anti-aircraft weapons in the 1920s and 1930s, overall the period prior to World War II witnessed little substantial redevelopment of the nation's coastal defenses. During the World War II era, another new and much more extensive system of coastal defenses was developed, which featured new and more powerful armament with substantial concealment from aircraft, ranging from heavy reinforced concrete cover to disguises meant to look like civilian buildings.[8] These World War II developments in coast artillery would not, however, be implemented on the Battery Weed headland.

CHANGES AT THE MILITARY RESERVATION

The U. S. military reservation, designated Fort Wadsworth upon the renaming of Battery Weed in 1902, expanded during the late nineteenth and early twentieth centuries to accommodate the new Endicott technologies and systems of coastal defense. Land purchases by the federal government between 1892 and 1907 extended the military reservation to the west beyond New York Avenue and to the south of Richmond Avenue through acquisition of fourteen parcels, most part of preexisting country estates.[9] (Figure 1.42) Most of these estates were destroyed to clear the way for the construction of modern batteries and military housing.

Prior to the country's formal entrance into World War I in 1917, the garrison of military troops at Fort Wadsworth increased to 1,400 men and remained close to

that number until 1918. At the end of World War I, the garrison diminished dramatically, and as a coast defense site, it was essentially mothballed. In 1928, the coast artillery personnel at Fort Wadsworth consisted of just twelve enlisted men and one officer, who basically performed a caretaking detachment. The post's armament during this period was described as being in excellent condition, but out of commission.[10]

The years following World War I probably witnessed a reemergence of informal public recreational use of the grounds that had ceased during the war years. The ample grounds of Fort Wadsworth with it scenic views and its close proximity to dense residential neighborhoods ensured the public's interest in the military post as a sort of informal public park. (Figure 1.43) Recreation was an important part of military life at Fort Wadsworth. Tennis courts were laid out on the parade grounds in the quadrangle of Fort Tompkins.[11] A nearby country club offered a golf course, and officers at the post were usually invited to become members. Fishing was reportedly fair, and Staten Island's excellent roads provided many opportunities for automobile touring.[12] From the trolley line that stopped at Fort Wadsworth, military personnel had a direct line to the Manhattan ferries at St. George prior to the line's termination in 1934.

With declaration of the national emergency in 1939 and subsequent entry of the United States into World War II, Fort Wadsworth once again became a hub of military activity. Heightened activity during this period included the movement of various units of Coast Artillery Corps, Military Police, and National Guard through Fort Wadsworth for activation, equipping, and training for service overseas. In March of 1944, a service unit of two hundred Italian prisoners of war was quartered at Fort Wadsworth and they remained at the Staten Island post until August of 1945.[13] In the landscape, the development of aerial warfare caused the War Department to initiate a program of so-called protective obscurement, which required all military reservations to disperse, conceal, or camouflage themselves in preparation for attacks that might now come from the air.[14] This program may have resulted in planting of vegetation on the batteries to conceal armament. No new batteries were constructed or improved at Fort Wadsworth during the war, although a number of guns remained active. During the war, however, many were scrapped. By the end of the war, all gun emplacements stood silent and vacant, signaling the final end of Fort Wadsworth's role as a coastal fortification in New York Harbor.[15]

LANDSCAPE OF THE BATTERY WEED HEADLAND (DRAWING 3)

The War Department quickly implemented the 1886 recommendations of the Endicott Board at the Battery Weed headland, beginning in 1887 with

development of a submarine mine defense system in the Narrows and continuing through the first decades of the twentieth century with reconstruction of the earthen batteries to protect the mine field. The War Department continued to adjust this system into the early 1920s. These last adjustment reflected the final military developments on the headland. Aside from a few minor improvements for anti-aircraft weaponry, the Battery Weed headland would see few changes in its landscape for the remainder of the period.

As the military redevelopment of the headland got underway in the late 1880s, the landscape continued to be a popular place for visitors to take in the spectacular views of the harbor from the grassy slope above the fortress, despite the earlier grading and removal of nearly all trees. (Figure 1.44) A drawing made eight years later indicates not only the public park-like use of the landscape, but also visitors' enjoyment of the inactive guns, which served not only as benches for reading a newspaper, but even as a children's play ground. (Figure 1.45) Between 1887 and 1892, the Army built three walks extending from the overlook down the steep slope to Battery Weed.[16] (Figure 1.46) While the original intent of these walks is not known, they were probably used by visitors who would have enjoyed a changing panorama of the harbor scene as they descended down the switchbacks. The walks may also have had a military function, to allow personnel to bypass the mine railway at the base of the slope that was begun in c.1887. The walks extended to the south and north of a proposed building for the storage and processing of torpedoes.

Changes to the Fort & Batteries

In the early years of this period, many of the guns at Battery Weed remained intact. A photograph taken in c.1902 shows the barbette tier, the earthen turf-covered roof of the fort, carefully maintained with the grasses kept short to allow clear access in the operation of the guns on their round emplacements, with their rammers close by, perhaps as part of a recent firing exercise. (Figure 1.47) Down in the parade ground in the center of the fort stood large piles of shot. (Figure 1.48) Soon, however, these armaments would become obsolete and removed from the fort. By the turn of the century, the guns on the barbette tier were gone and the lower casemates of Battery Weed were maintained with just fifteen mounted and serviceable guns, most of which would soon be scrapped.[17] The fort's function had, aside from an addition for the mine defense system, transitioned to more of a storehouse than an active military fortification. Munitions removed from Ellis Island in 1890 were stored here, and in later years, mines, submarine nets, and accessories of the Third Naval District, and miscellaneous stores of Army Corps of Engineers and the Lighthouse Division of the Treasury Department, were stored among the casemates on all three tiers.

Aside from its storage function, Battery Weed did continue to serve its long-time function as a guardian of the shipping lane through the Narrows. In 1903, a light and signal station was completed on the northeast bastion of the barbette tier, a feature that would have been a strategic obstruction had the guns remained in place. (Figure 1.49) The lighthouse, which had a fourth-order Fresnel lens visible for fourteen nautical miles, replaced the earlier Fort Tompkins (Wadsworth) Lighthouse constructed south of Fort Tompkins in 1873. It was replaced due to its remoteness from the Narrows and probably also because its site was needed for the construction of new batteries.[18] Around the same time as the new lighthouse was built, a fog signal was erected on the seawall along the northeast side of Battery Weed. Sometime after 1904 and prior to the outbreak of World War I, a thirty-six inch searchlight was installed on the barbette of the southeast bastion to illuminate the Narrows at night.[19]

Elsewhere in the Battery Weed headland, the Endicott period brought substantial changes to the Civil War-period batteries that flanked the shoreline north and south of the fort. These batteries were redesigned for rapid-fire weapons intended to cover the mine field in the Narrows that was developed beginning in c.1887. The north end of the South Cliff Battery was reconstructed in 1899 and renamed Battery Bacon; the sections to the south were rebuilt as two separate batteries named Barbour and Turnbull between 1898 and 1903. The entire North Cliff Battery was reconstructed between 1902 and 1904 and renamed Battery Catlin, although its weapons were not mounted until 1913. While portions of the old batteries were retained and reused (including the bomb-proof parados in the North Cliff Battery), much was constructed anew. The new batteries featured reinforced concrete gun emplacements and expanded earthworks above the shoreline. Sand was excavated from the beaches for the enormous quantities of cement needed for the parapets. A system of trolleys, light inclined trestles, steam hoisting engines, and mixers were used to build the massive structures (see Figure 1.49).[20]

The new technologies and systems developed throughout the site required the careful maintenance of grass and vegetation to preserve the earthworks from erosion and to maintain both clear sight lines between the fire control facilities and the water passage, as well as easy access to the artillery. The result was a carefully graded and neatly clipped landscape surrounding Battery Weed that, although heavily engineered, was a favorite subject for artists with its still picturesque setting along the Narrows. (Figure 1.50)

Mine Defense System

The most extensive change to the headland was a result of the development of the mine defense system for the Narrows, begun soon after the Endicott Board

issued is recommendations in 1886. The narrowness of the water passage into New York Harbor made it an ideal place for use of buoyant mines, initially known as torpedoes. Mines used in the new system were not permanently placed in the waters, but stored along with miles of cables in waterside facilities where they could be quickly deployed. The deployment of the mines and cable was undertaken by a special mine-laying vessel. The physical facilities that were developed throughout the Battery Weed headland, aside from Batteries Catlin and Bacon, included fire-control stations, improved dockage with buildings for storing the mine-laying vessel, mine casemates, and mine and cable storage buildings.[21]

Plans for developing the mine defense system began early in the Endicott period, perhaps as early as 1886. A plan drawn that year indicated that the strategically obsolescent moat around Battery Weed had been dewatered in apparent anticipation of building a mine casemate at the northwest bastion that would require space in the former moat. A section of the moat at the southwest bastion was retained as an open reservoir, fed by a natural spring with water piped to the guardhouse for distribution through the fort. (Figure 1.51) Construction of the casemate and first sections of the mine railway followed in c.1887, soon after the moat was dewatered and the reservoir constructed.[22] The casemate was designed to house the electric switchboard used to control the firing of the mines, with a large conduit running out through the seawall and into the waters of the Narrows to the east and northeast. (Figures 1.52) An electrical cable, probably lead-sheathed copper, was run through the conduit to connect the mines to the firing switchboard in the casemate. To protect the equipment in the casemate from bombardment, solid concrete additions were added to either side of the bastion within the dewatered moat. (Figure 1.53)

Battery Weed initially served as the center of the mine defense system, along with the north dock where the mines were loaded onto vessels for deployment. Aside from the casemate, the fort served as the storage area for the mine equipment, which would have included such things as mines, cables, and nets. The first alignment of the mine railway most likely ran from the interior of the fort to the dock, but it was extended in the 1890s to reach new facilities built outside of Battery Weed. The first of these freestanding facilities was the Torpedo Storage Building completed in c.1894 at the base of the slope parallel to the road. (Figure 1.54) The two-story brick and stone building was used for storage, assembly, and loading of mines onto rail cars. The mine railway was extended through the building by 1896, entering on the first floor at the east end, and on the second floor at the west end. The railway formed a circuit to the north dock that curved sharply around the south end of Battery Catlin (see Figure 1.54). The mine railway was designed to allow rail cars, probably manually pushed, to carry mine

cases, cables, and anchors directly to the north dock where a crane was used to transfer the materials to awaiting mine planting vessels. By 1910, the original railway was proving inadequate, and sections were rebuilt and realigned. The rails had originally been laid on uneven and improperly prepared ground with little or no ballast to prevent heavy rail cars from overturning.[23]

Many additional structures supporting the mine defense system were built around the turn of the century. The arrangement of these structures was intended to allow the fewest number of men to deliver the mines to the vessels in the shortest time possible. In 1898, a cable tank building was constructed parallel to the Torpedo Storage Building on the opposite side of the road. (Figure 1.55) This facility, which was connected to the mine railway, consisted of a long, rectangular one-story frame building with a gable roof that served as the cover for the actual cable tank. Anchors were stored on the edge of an associated platform for easy loading.[24] A second cable tank building was constructed onto the north side of the original building in 1899. In 1903, a smaller third cable tank was built east of the first two. (Figure 1.56)

To provide much-needed space for additional support buildings, the Army filled the west side of the dewatered moat to ground level in c.1904, obscuring the inland moat wall. The reservoir at the southwest bastion was either covered or filled. Between 1904 and 1905, an in-ground cable testing trough and a series of wood-frame gabled buildings were constructed on top of the filled moat, abutting the west wall of Battery Weed. These included a torpedo loading room and testing room, and cable tank buildings 4, 5, and 6. (Figure 1.57, see also Figure 1.56) At some point after 1907, a dynamite testing room building was added in front of the cable tank building. The cable tank building, which was actually one long structure, extended across the main pedimented entrance to Battery Weed. In place of this ceremonial portal, the entrance to the fort became a nondescript opening in a wood-frame building.

While these buildings were being constructed along the west wall of Battery Weed, work was underway on replacing the c.1887 mine casemate in the northwest bastion, which was suffering from excessive moisture that apparently damaged its electrical firing switchboards. In c.1905, work was completed on a second mine casemate, a one-story brick building constructed on high ground at the south end of Battery Catlin, north of the bomb-proof parados (see Figure 1.56). The firing controls in the new casemate included a twenty-four inch cable conduit that extended 130 feet down the slope of Battery Catlin and through the seawall into the Narrows.[25]

As the mine defense system was expanded during the first decade of the twentieth century, the old north dock proved inadequate for its primary function of transferring submarine cables and mines between the on-shore storage facilities and mine-planting vessels. The dock also continued to serve as a main delivery point for the post, receiving supplies through the Quartermaster's office located in the boathouse built alongside the dock in 1877. In order to retain space for the Quartermaster and provide additional room for the mining defense operations, a large timber extension was built on the east side of the dock in c.1906 (see Figure 1.56). The mine railway was extended across the length of the new dock, which more than doubled the size of the original structure. By 1907, a long, rectangular boathouse was constructed alongside the dock extension for sheltering the mine-planting vessels, and a smaller open dock house was constructed between it and the Quartermaster warehouse. (Figure 1.58) A marine crane for hoisting anchors and mines onto the vessels from the mine railway was installed at the corner of the dock extension.

By World War I, advances in gun ranges reduced the effectiveness of mine defense systems, and the technology faded in importance. Despite this, the system at Battery Weed was kept operational into the 1920s by a skeleton detachment of troops. A few improvements were also made to the system due to the increasing weight of the mines. In 1921, the railway was rebuilt and realigned to straighten out sharp curves and to prevent trucks on their way to and from the dock from crossing the rails.[26] (Figure 1.59) Soon after these changes to the railway, a concrete cable testing tank or turntable was installed just outside the long cable tank building near the entrance to Battery Weed.

An aerial photograph of Battery Weed taken in 1924 illustrates the full extent of the mine defense system at the end of its development, with its various buildings and railway. (Figure 1.60) This photograph also shows the overall character of the headland landscape, which was devoid of trees except for small groves to the west and southwest of Battery Weed.

Later Changes

Aside from the modifications to the mine defense system in the early 1920s, the period from World War I through World War II witnessed few changes in the landscape of the Battery Weed headland. The only new military feature added during this period was a coincidence range-finder station, which was built during World War I on the lower part of the engineered slope above Battery Bacon in c.1917 (see Figure 1.60). This small in-ground concrete structure directed fire from the adjoining batteries. Just two other buildings were constructed on the headland through the end of World War II. These included a small garage built of rock-faced concrete block constructed at some point between 1924 and 1940

off the south end of the Torpedo Storage Building. (Figure 1.61) During World War II, a small building of unknown function was constructed of prefabricated concrete panels between cable tank building 3 and cable tank buildings 1-2.

In addition to these minor buildings, the Battery Weed headland underwent several improvements to its landscape during the 1930s, thanks in part to the availability of federal work relief programs. Civilian Conservation Corps (390 Veterans Co.) and Works Progress Administration-funded laborers undertook a number of projects at Fort Wadsworth between 1933 and c.1941. At the Battery Weed headland, this work purportedly included construction of poured concrete seawall north of the north dock, and improvements to the overlook at the top of the slope along Hudson Road, probably to accommodate long-standing informal public use of the area for its panoramic views of the harbor.[27] These improvements included construction of a low stone wall along the entire top of the slope bordering Hudson Road, with an expanded terrace off the southwest corner of Fort Tompkins (see Figure 1.61). The wall was probably intended as a barrier for pedestrians and automobiles from toppling down the steep slope. It cut off access to the walks that led down the slope to Battery Weed. As part of the improvements, Hudson Road was apparently surfaced in concrete and lined in part by a row of sycamore trees. These trees were apparently planted as part of program of planting sycamores as street trees throughout the reservation, including along Battery Weed Road near the Torpedo Storage Building and along Mount Sec Avenue.

Once the national emergency began in 1939, public visitation to the Battery Weed headland was most likely prohibited. During the war, Battery Weed once again would have taken on the hum of an active military post, although its fortifications were largely obsolete and inactive.[28] However, the mine defense system and other marine defenses such as nets may have been used during the war to protect the harbor from German U-boats. Some of the formerly manicured turf on the batteries may have been planted or allowed to transition to shrubs to fit in with the native environment as part of the Army's program of aerial concealment.

By the end of the war, the landscape of the Battery Weed headland had seen extensive and complex development since the beginning of the Endicott period over five decades earlier. The landscape featured a number of additional structures and systems that changed its character and function. Vegetation was probably kept trim and neat except perhaps on the batteries. Despite these changes, the overall open character of the landscape remained much as it had been developed during the Third System period, with Battery Weed forming the central and most prominent organizing element. The end of the war marked the end of the active military use of Battery Weed and its Endicott-period

fortifications. In the years to follow, the landscape would change markedly in character, although most of the military infrastructure would remain.

ENDNOTES

[1] Edna Holden, Principle Researcher, *Staten Island, A Resource Manual for School and Community* (New York, New York: Board of Education of the City of New York, Bureau of Curriculum Research, 1964), 216.

[2] Henry G. Steinmeyer, *Staten Island 1524 – 1898* (Richmondtown, New York: Staten Island Historical Society, 1987), 93.

[3] Steinmeyer, 93-95.

[4] Holden, 215.

[5] The Endicott period is also referred to as the Endicott-Taft period, Taft denoting a subsequent phase of improvements to coastal defenses begun in 1905. Emanuel Raymond Lewis, *Seacoast Fortifications of the United States, An Introductory History* (Annapolis, Maryland: Naval Institute Press, 1979), 89.

[6] Emanuel Raymond Lewis, *Seacoast Fortifications of the United States: An Introductory History (*Annapolis, Maryland: Naval Institute Press, 1979), 70-88.

[7] Ingrid Wuebber and Edward M. Morin, "Phase 1A Archeological Investigation Rehabilitate Battery Weed Seawall and Dock Fort Wadsworth Unit, Gateway National Recreation Area Staten Island, New York" (Unpublished report prepared by URS Corporation for the National Park Service, 2006), 3.22.

[8] Lewis, 102, 115, 122.

[9] Frederick R. Black, *A History of Fort Wadsworth, New York Harbor* (Boston, Massachusetts: U.S. Department of the Interior National Park Service North Atlantic Regional Office, Cultural Resources Management Study N0.7, 1983), 109.

[10] Black, 133.

[11] Steinmeyer, 97; Holden, 109.

[12] Black, 128, 129.

[13] Robert Krist, "Fort Wadsworth, Part II," in *Staten Island Historian*, vol. XVIII, no. 4, October-December 1957, 18, 19.

[14] Wuebber, 3.42.

[15] Black, 134. Black does not document the post-World War I military role of Fort Wadsworth.

[16] These walks are not shown on the 1886 topographical survey of Fort Wadsworth (Figure 1.36).

[17] Black, 116.

[18] Lighthousefriends.com, "Fort Wadsworth, NY," online article at http://www.lighthousefriends.com/light.asp?ID=754 (accessed 17 September 2008).

[19] Black, 124.

[20] Black, 113-114.

[21] Black, 105; Lewis, 88-89.

[22] The location of the original sections of mine railway constructed in c.1887 most likely extended from the parade grounds of Battery Weed to the north dock.

[23] Wuebber, 3.23.

[24] Wuebber, 3.24.

[25] Black, 125; Wuebber, 3.28.

[26] Wuebber, 3.35.

[27] Phil Melfi, communication with author, 2007. However, no actual written documentation was found crediting the WPA with building the overlook wall or concrete seawall.

[28] No specific documentation was found on the use of the Battery Weed headland, including its mine defense system, during World War II.

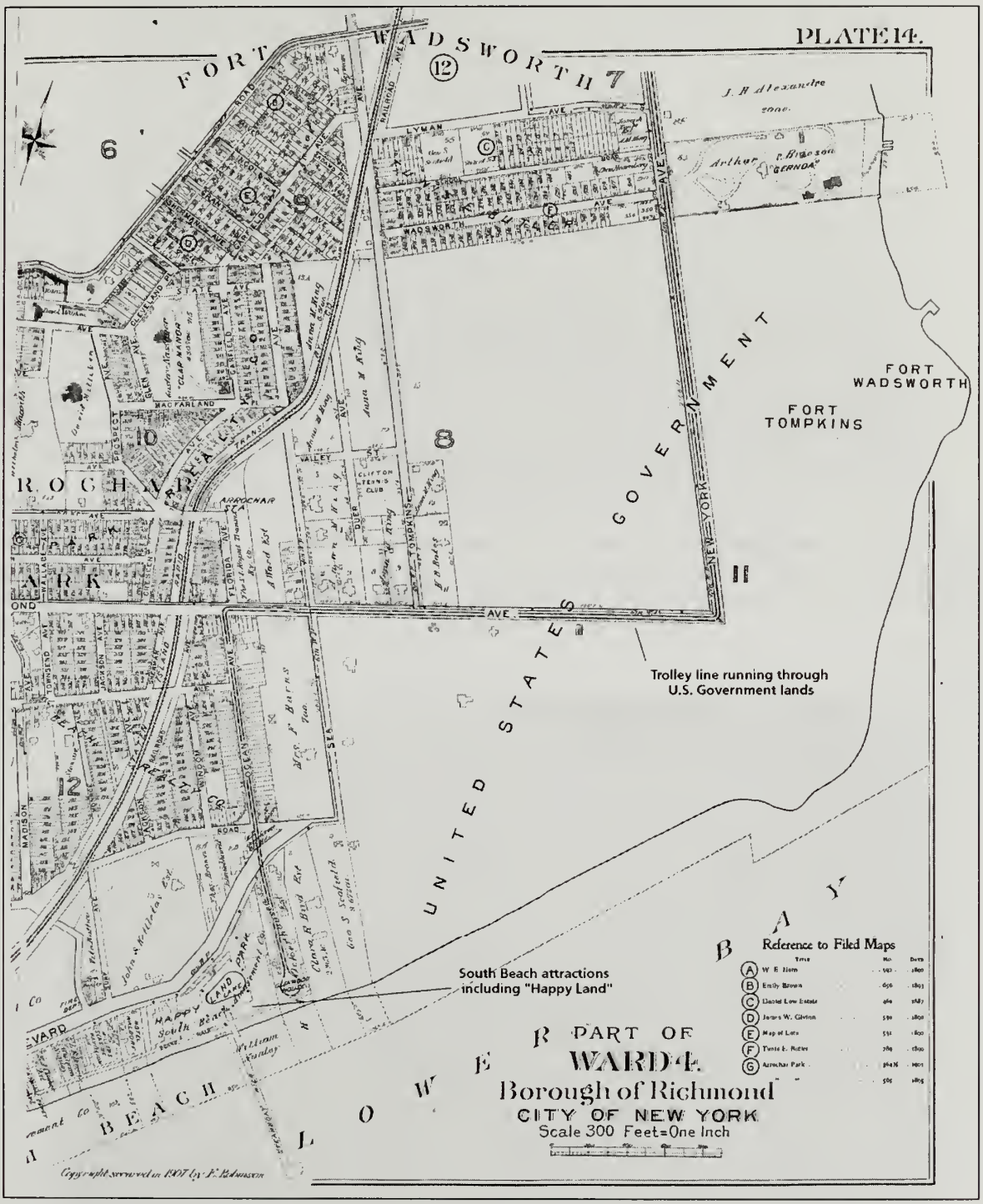


Figure 1.39: Detail of a 1907 atlas of Staten Island showing trolley and railway lines, street-car suburban development, and some remnant country estates surrounding Fort Wadsworth. Collection of the Staten Island Institute of Arts & Sciences, annotated by SUNY ESF.

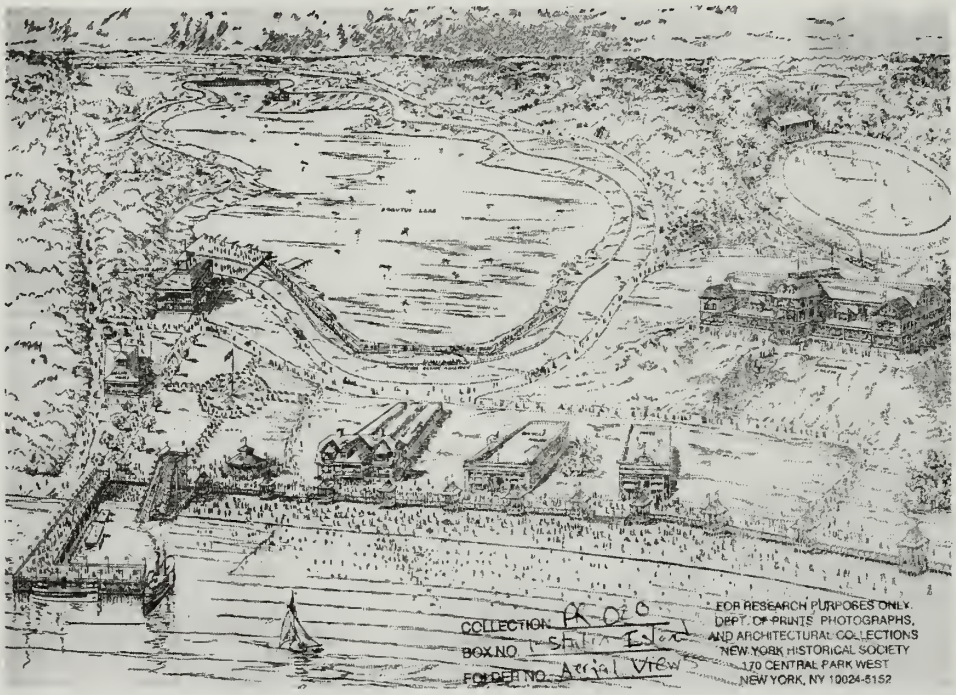


Figure 1.40: Drawing of the June 1899 opening of South Beach resort, located on the shoreline about one mile south of Battery Weed. Department of Prints, Photographs and Architectural Collections, PR 020, Box 1-Staten Island, New-York Historical Society, New York New York.

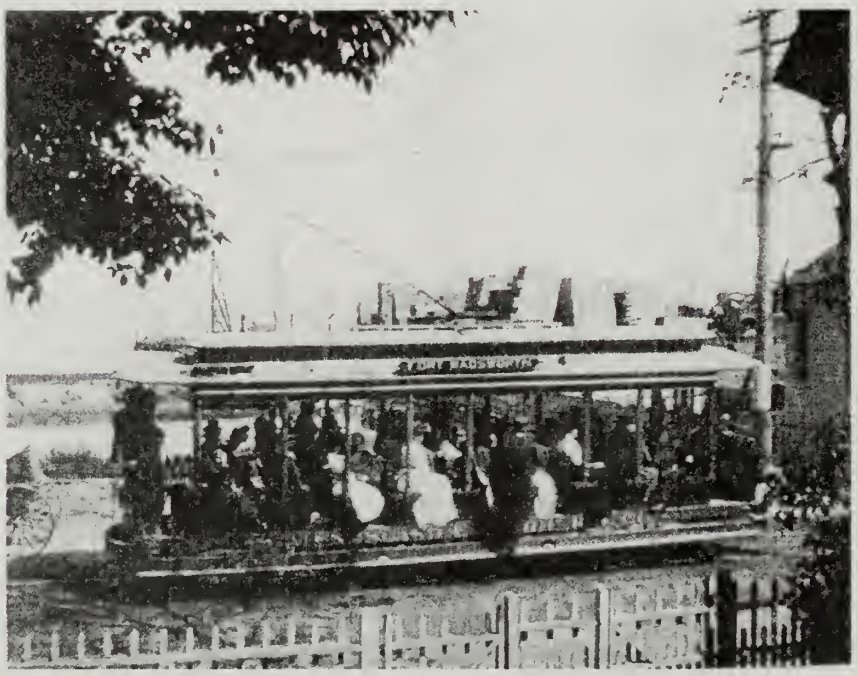


Figure 1.41: Photograph of a trolley car named Fort Wadsworth on its way to South Beach, c.1907. This car would have passed through the military reservation along New York Avenue. Photo by August Loeffler, reproduced from Charles Leng and William T. Davis, *Staten Island and Its People, A History, 1609 – 1929* (New York: Lewis Historical Publishing Company, c.1929).

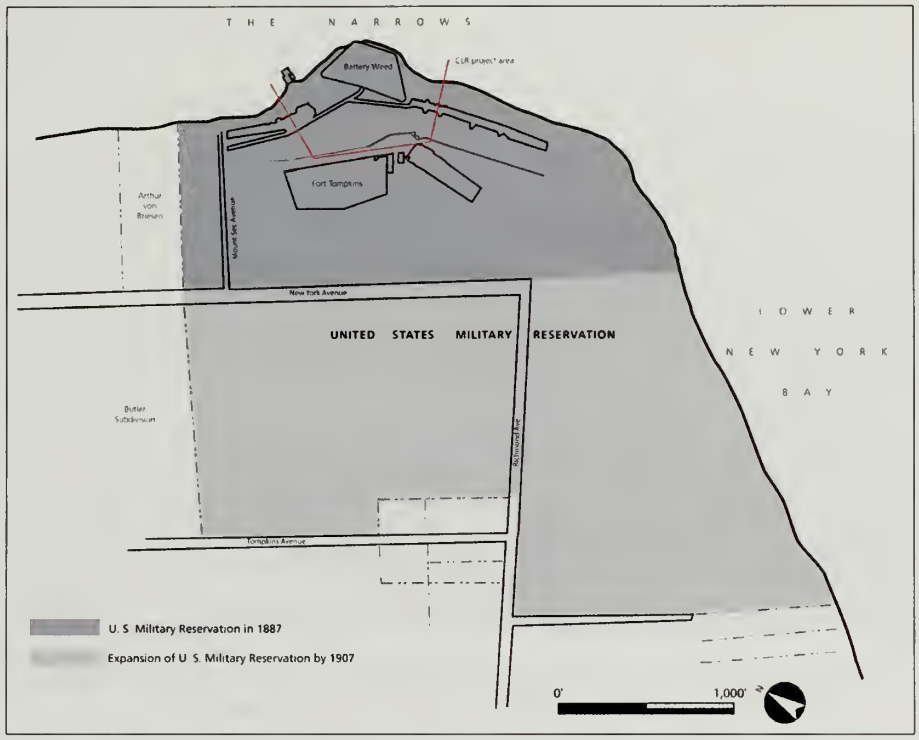


Figure 1.42: Diagram showing the expansion of the U. S. Military Reservation by 1907 in comparison with its extent in 1887. SUNY ESF, based on 1874 and 1907 atlases of Staten Island.

Figure 1.43: An aerial photograph taken in 1923 looking northwest across the Narrows showing the setting of the Battery Weed headland within Fort Wadsworth and adjoining residential neighborhoods that made it a popular recreational spot. This photograph clearly shows the officers' housing along New York and Mount Sec Avenues, earthen batteries, the engineered slope with walks, the north dock with buildings, and open spatial character of the headland. Photograph 19397, Gateway National Recreation Area Archives, Fort Wadsworth.

Figure 1.44: Etching published in 1892 depicting the park-like use of the landscape surrounding Fort Wadsworth (Battery Weed) during the early years of the Endicott period. Collection of the Harbor Defense Museum, Fort Hamilton, New York.

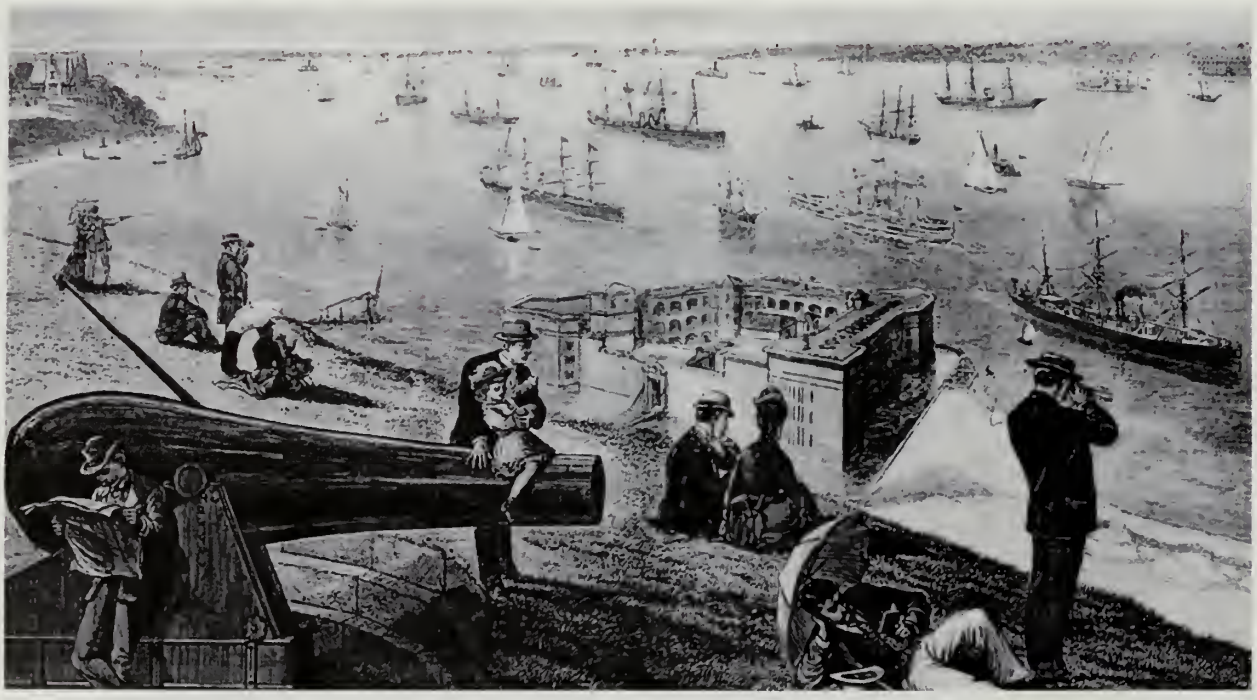


Figure 1.45: Drawing made in 1900 looking northeast from overlook at the top of the slope above Fort Wadsworth (Battery Weed) showing public park-like use and inactive guns. Image 19650, Gateway National Recreation Area Archives, Fort Wadsworth.

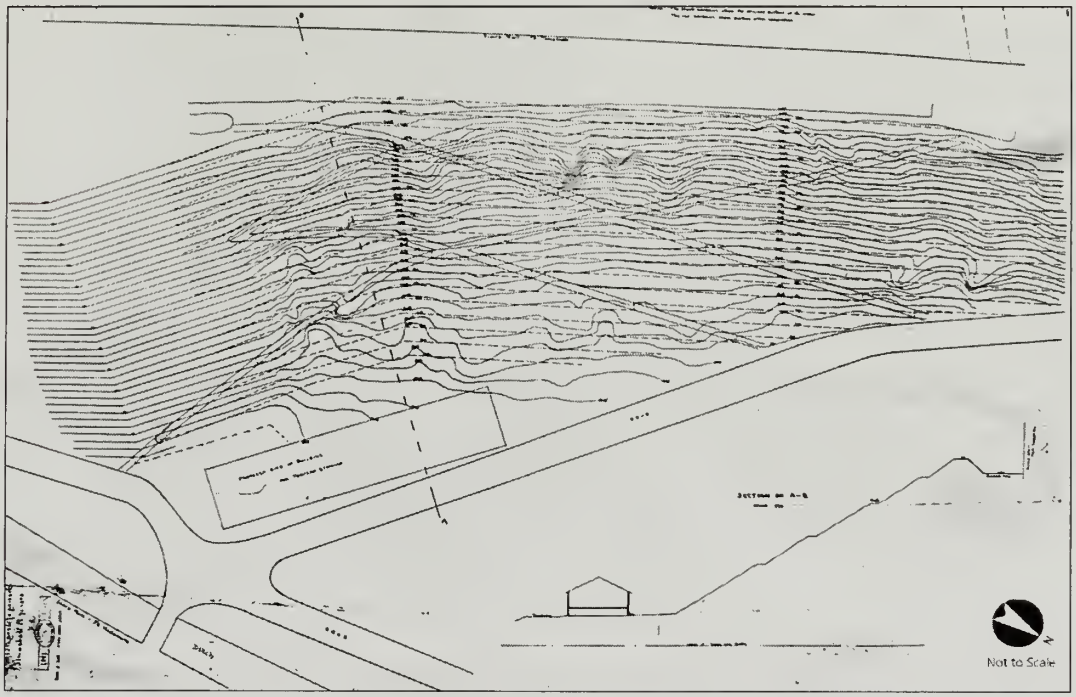


Figure 1.46: Detail of an 1892 survey illustrating the diagonal walks built after 1886 on the engineered slope, showing route that extends to either side of the proposed Torpedo Storage Building at the base of the slope. The plan also shows the former natural contours prior to grading in c.1873. RG 77, Dr 43, 90-2, 1892, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

Figure 1.47: A photograph taken in 1890 looking southwest toward Fort Tompkins showing the barbette tier of Fort Wadsworth (Battery Weed) with its rotating guns still in place. The objects below the guns are rammers used to load munitions. Uncatalogued photograph, Gateway National Recreation Area Archives, Fort Wadsworth.

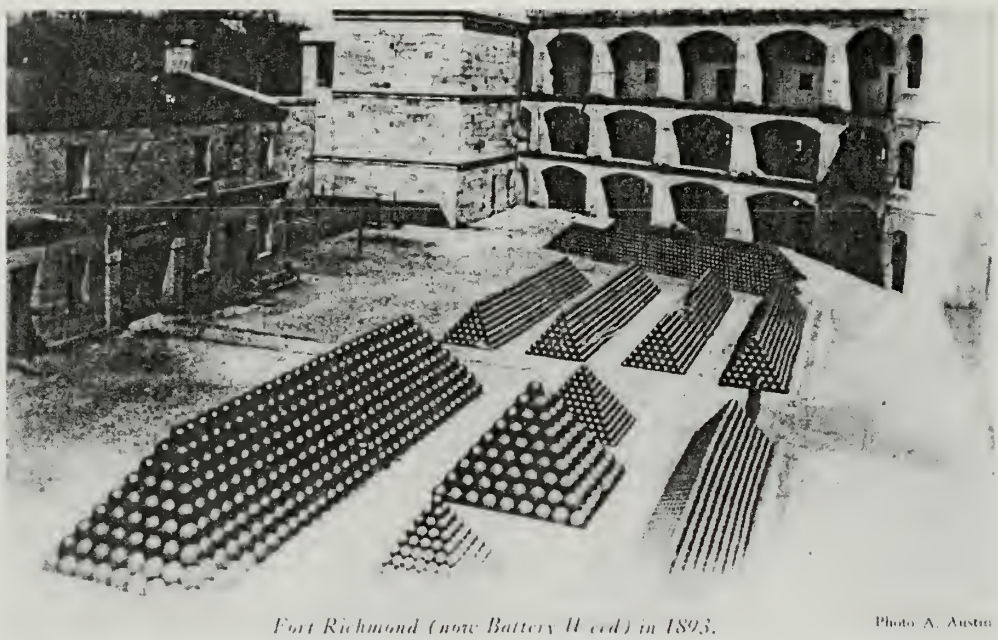


Figure 1.48: Photograph taken in 1893 by Alice Austin looking north across the parade grounds at piles of shot (cannonballs). The ground appears to be neatly trimmed lawn. Uncatalogued photograph, Gateway National Recreation Area Archives, Fort Wadsworth.

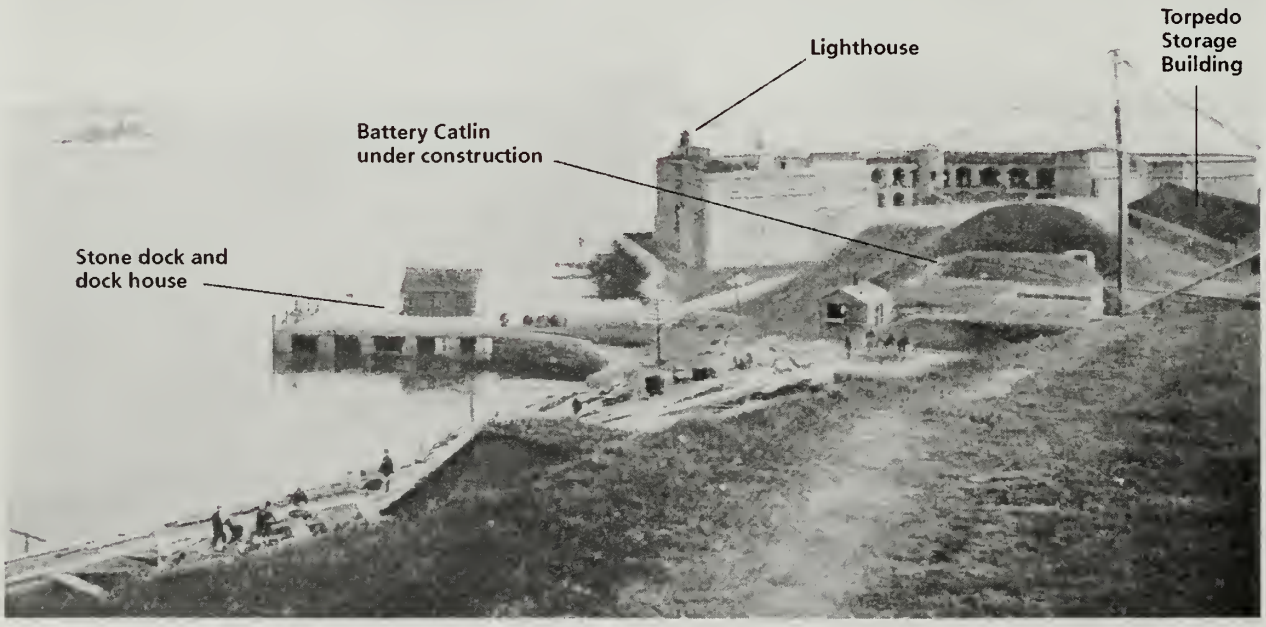


Figure 1.49: Photograph taken in c.1905 looking southeast showing the lighthouse completed on Battery Weed in 1903, and Battery Catlin and the second mine casemate under construction, including large earth mounds and concrete platforms. Photograph 19362, Gateway National Recreation Area Archives, Fort Wadsworth, annotated by SUNY ESF.

Figure 1.50: Sketch made in c.1905 by Vernon Howe Bailey looking southeast over Battery Catlin toward Battery Weed illustrating still picturesque character despite heavily engineered landscape. Collection of Harbor Defense Museum, Fort Hamilton, New York.

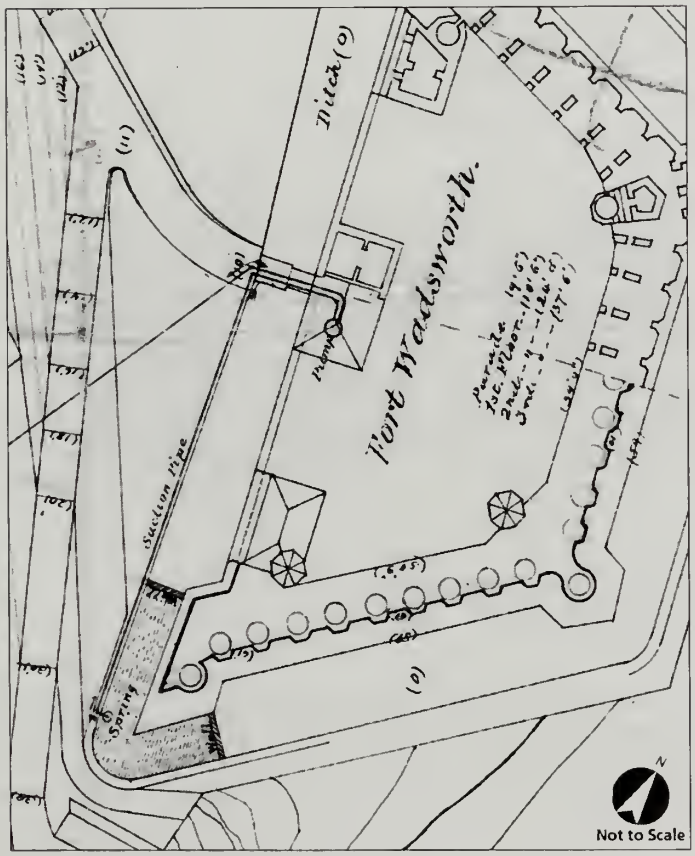


Figure 1.51: Detail of the 1886 plan (Figure 1.36) illustrating the dewatered moat (noted as "Ditch" on plan) and reservoir created at the southwest bastion of Fort Wadsworth (Battery Weed). Water was carried from a suction pipe along the moat wall to a pump in the guardhouse. These changes to the moat were probably the first steps in development of the mine defense system. RG 77, Dr 41, Sht. A, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

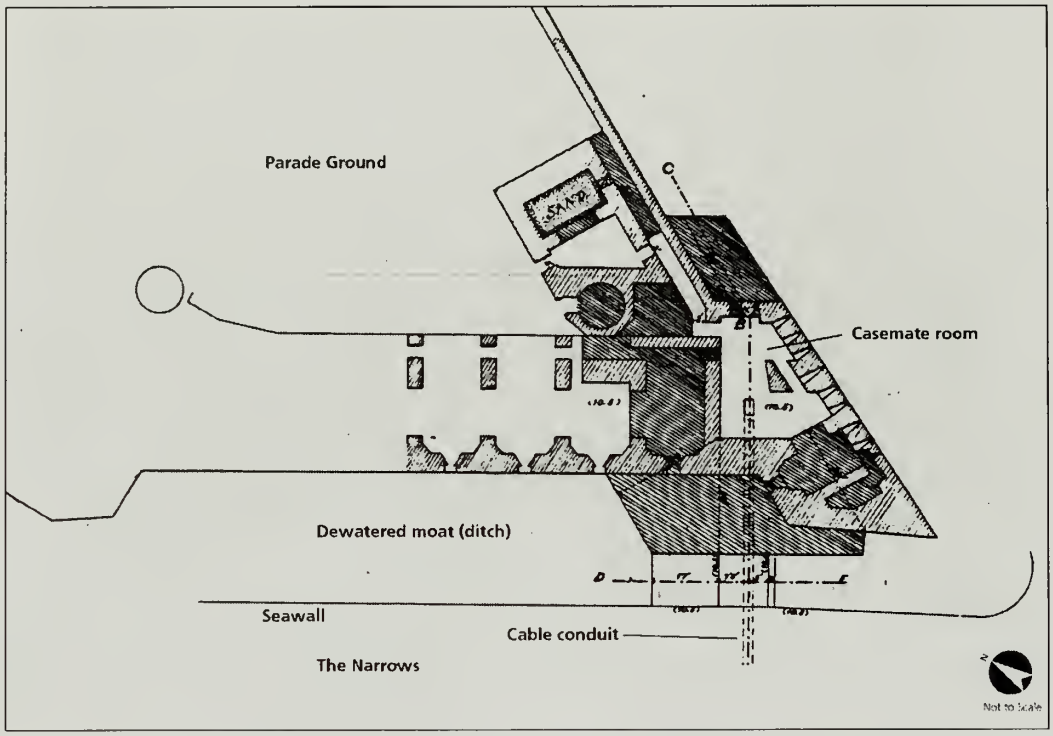


Figure 1.52: Detail of a c.1887 plan showing the first mine casemate located within the northwest bastion and adjoining dewatered moat of Battery Weed. RG 77, Dr 36, Sht. 100-5, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

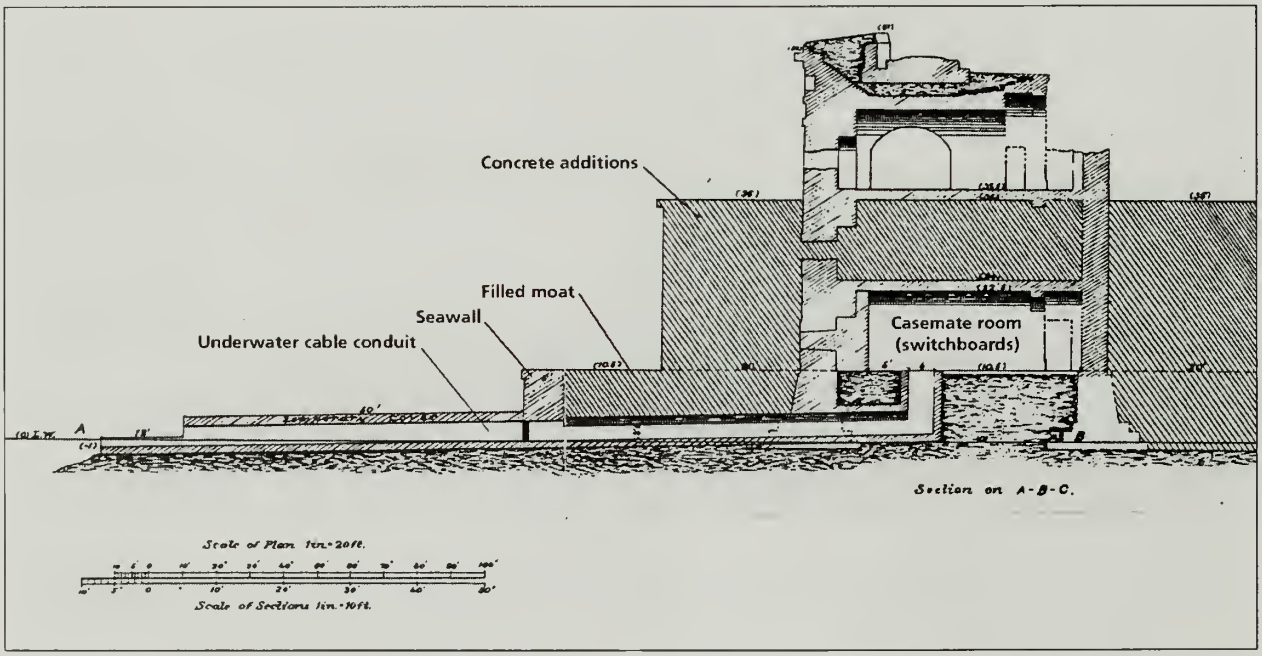


Figure 1.53: Section drawing accompanying plan view (Figure 1.52) showing the concrete additions (hatched areas) built around the original granite bastion within the dewatered moat, and the cable conduit that extended into the Narrows. RG 77, Dr 36, Sht. 100-5, 1887, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

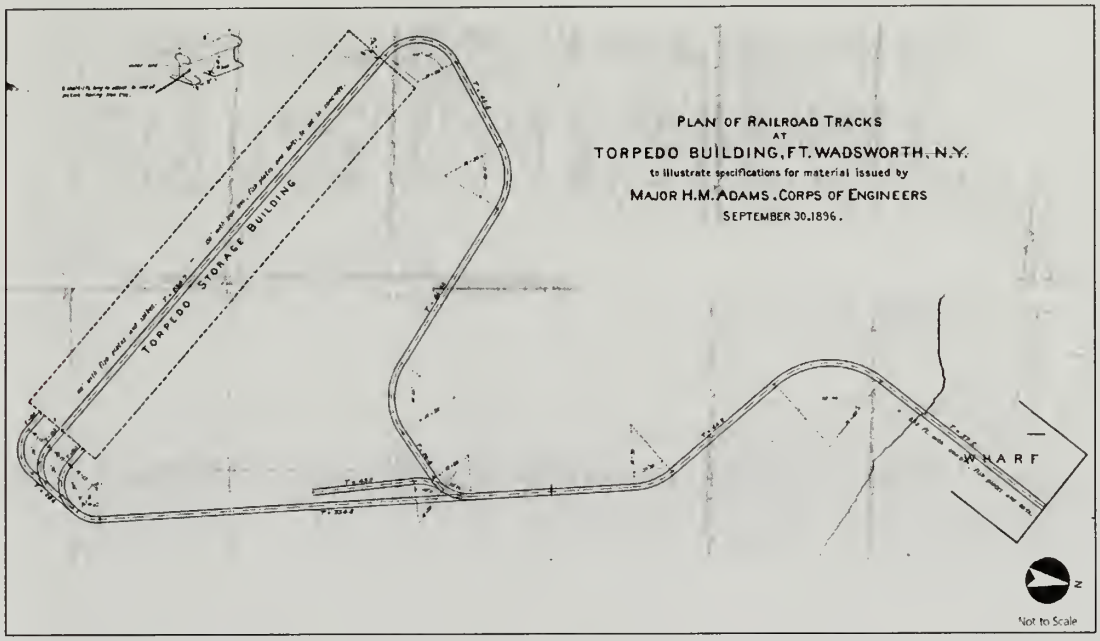


Figure 1.54: Plan drawn in 1896 showing the Torpedo Storage Building and mine railway constructed to move mines and cables from the building to the wharf (north stone dock). At the upper left is a perspective section of the rails. National Archives, RG 77, Dr 43, Sht. 90-11, 1896, Cartographic Division, National Archives II, College Park, Maryland, annotated by SUNY ESF.

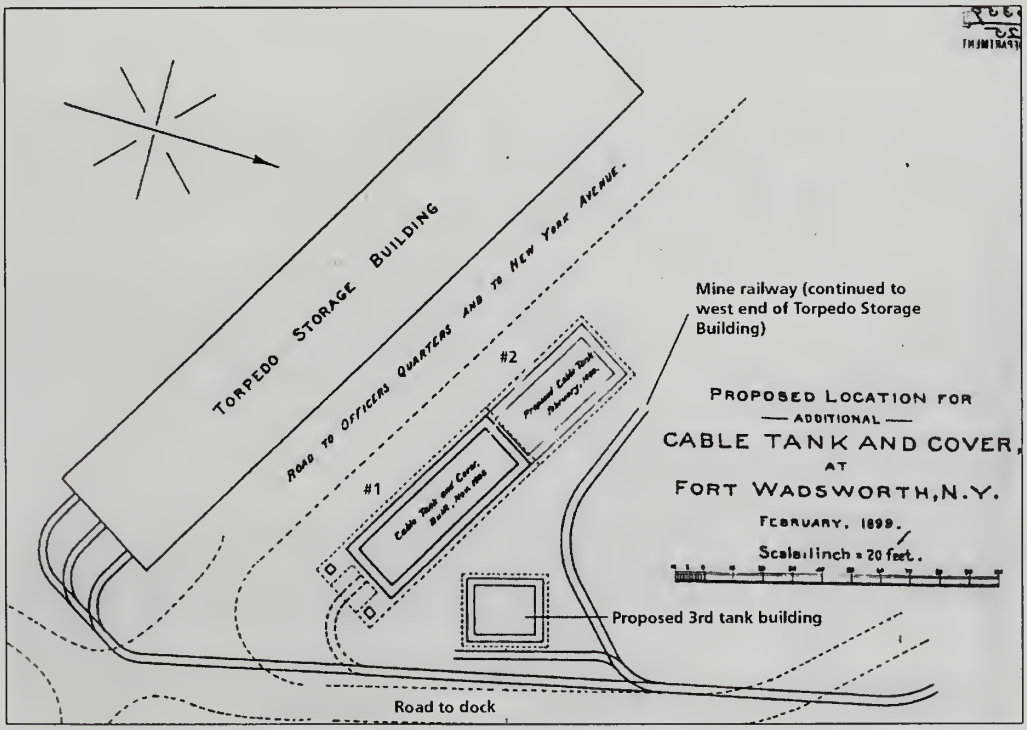


Figure 1.55: Detail of a plan made in 1899 showing the existing cable tank building (#1) built in 1898 and a proposed second cable tank building that was constructed soon after the plan was drawn. The plan also indicates the location of a third cable tank building. National Archives, reproduced from Ingrid Wuebber and Edward M. Morin, "Phase 1A Archeological Investigation Rehabilitate Battery Weed Seawall and Dock" (Unpublished report prepared for the National Park Service by URS Corporation, 2006), annotated by SUNY ESF.

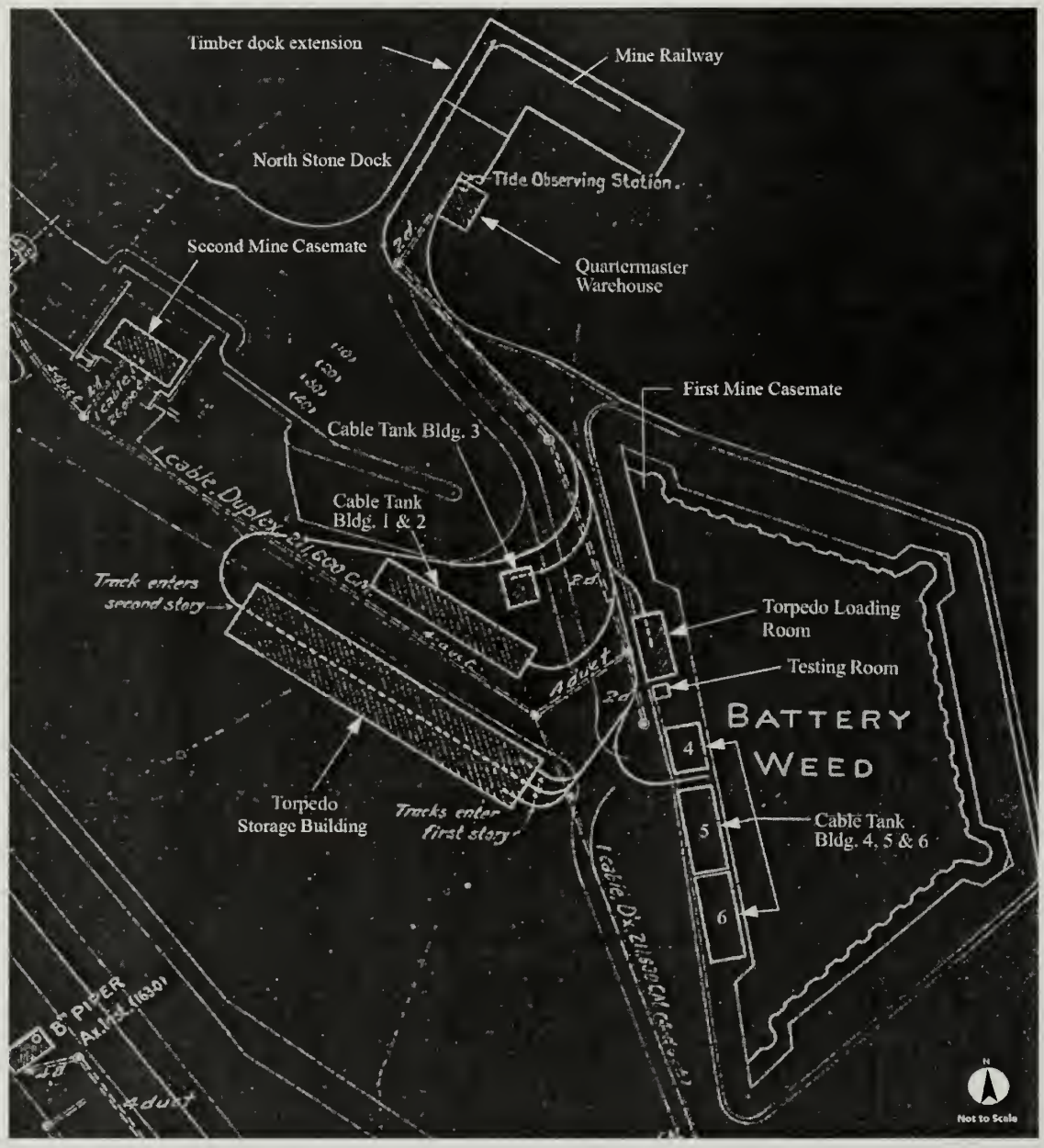


Figure 1.56: Plan drawn in c.1906 showing development of the mine defense system with its numerous support buildings constructed along the west wall of Battery Weed, the second mine casemate on Battery Catlin, and timber extension on the north stone dock. National Archives, reproduced from Ingrid Wuebber and Edward M. Morin, "Phase 1A Archeological Investigation Rehabilitate Battery Weed Seawall and Dock" (Unpublished report prepared for the National Park Service by URS Corporation, 2006), further annotated by SUNY ESF.

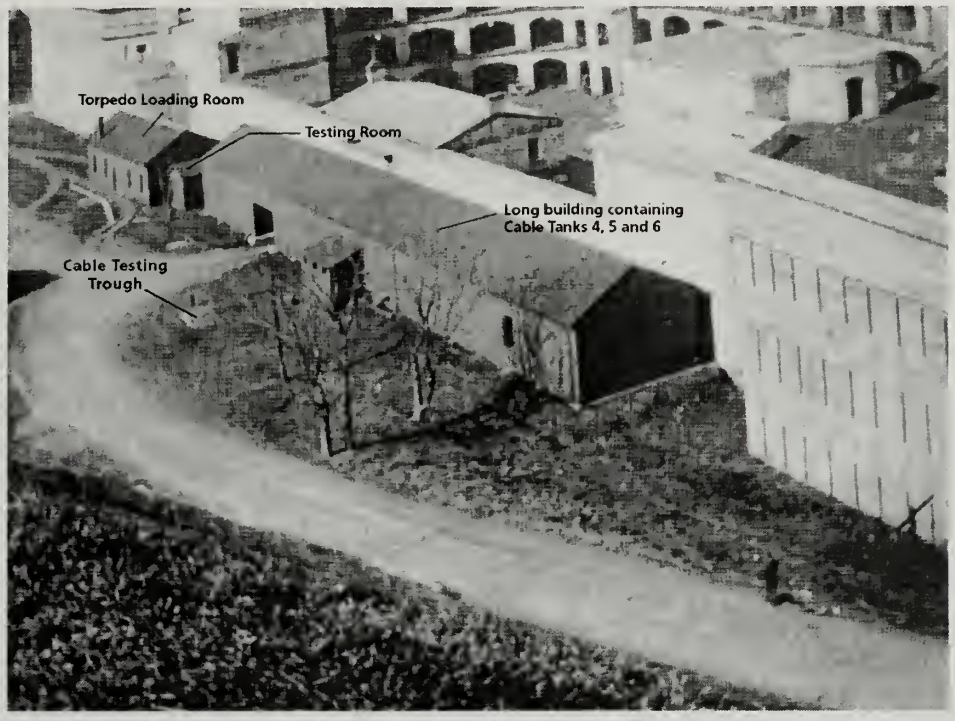


Figure 1.57: Photograph taken in 1907 of the mine defense system support buildings constructed on top of the filled moat along the west side of Battery Weed in 1904-05. The opening at the far end of the building housing cable tanks 4, 5, and 6 is the entrance to Battery Weed. National Archives, reproduced from Ingrid Wuebber and Edward M. Morin, "Phase 1A Archeological Investigation Rehabilitate Battery Weed Seawall and Dock" (Unpublished report prepared for the National Park Service by URS Corporation, 2006), annotated by SUNY ESF.

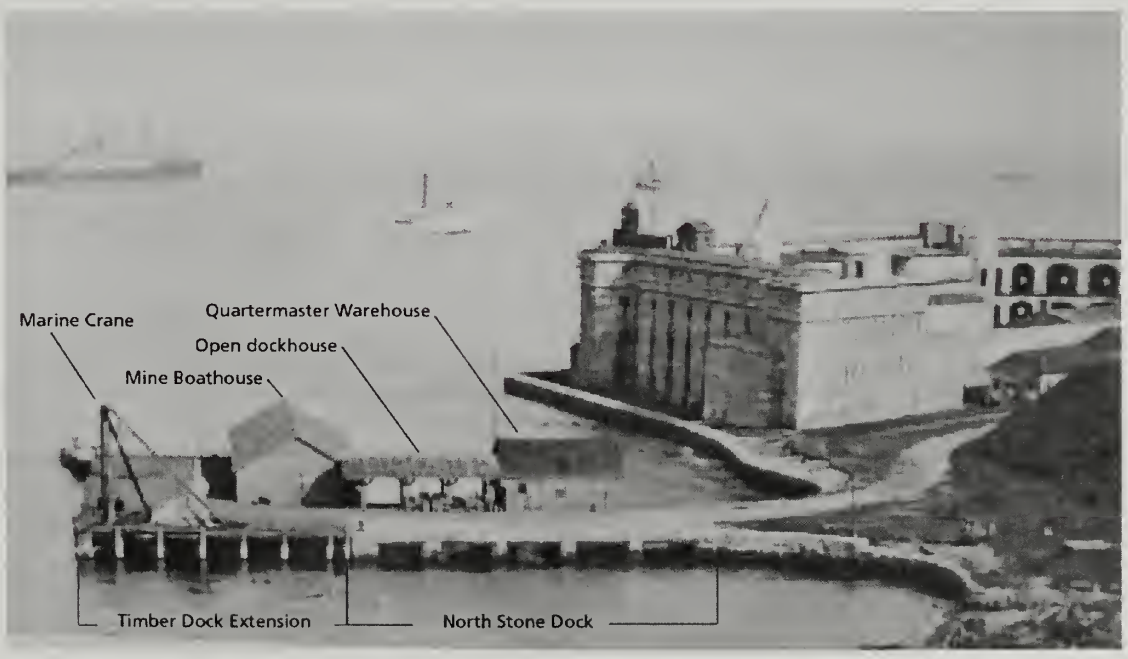


Figure 1.58: Photograph taken in 1907 showing the north stone dock with its recently constructed marine crane, timber extension, mine boathouse, and open dock house. The Quartermaster Warehouse, formerly called a boathouse, was added in c.1877. Photograph 19427, Gateway National Recreation Area Archives, Fort Wadsworth, annotated by SUNY ESF.

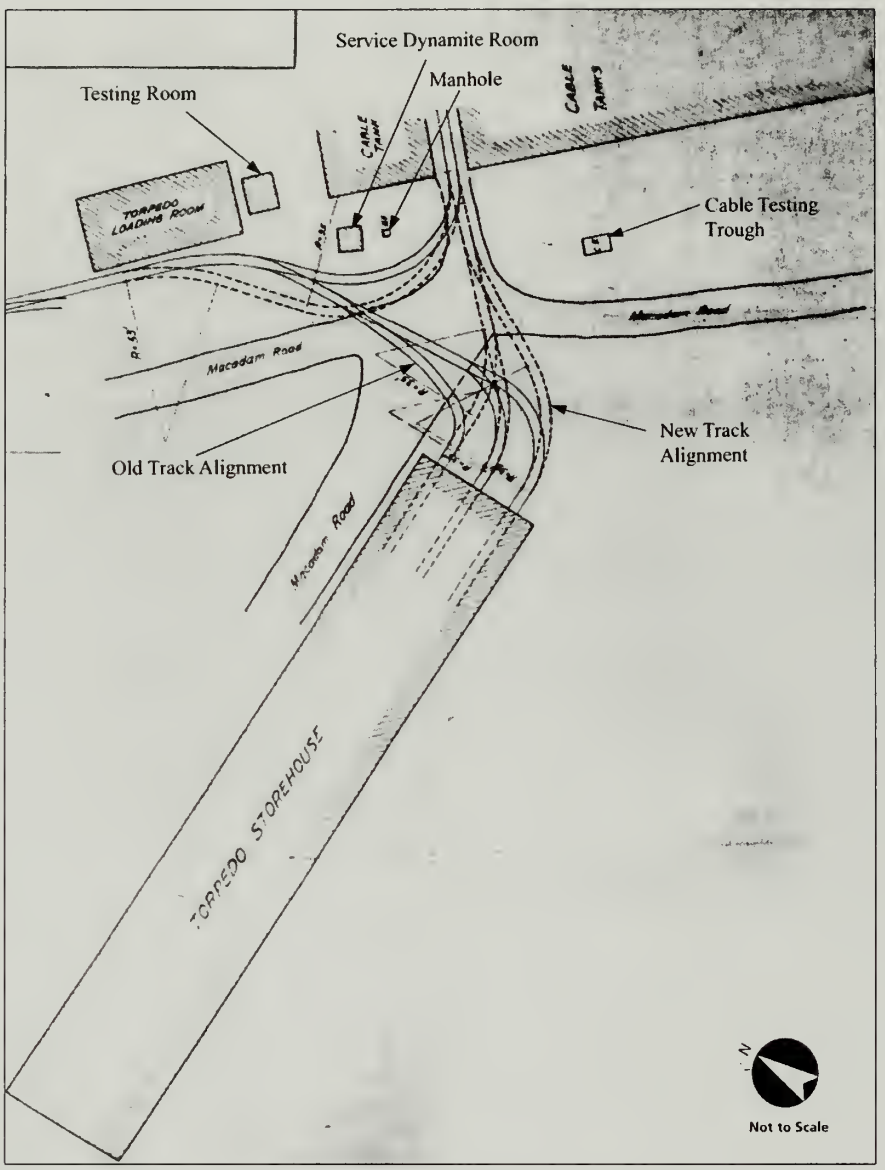


Figure 1.59: Plan made in 1921 showing the preexisting (solid lines) and the proposed 1921 (dashed lines) alignment of the mine railway at the Torpedo Storage Building (noted as Torpedo Storehouse). National Archives, reproduced from Ingrid Wuebber and Edward M. Morin, "Phase 1A Archeological Investigation Rehabilitate Battery Weed Seawall and Dock" (Unpublished report prepared for the National Park Service by URS Corporation, 2006), annotated by SUNY ESF.

Figure 1.60: A 1924 bird-s-eye photograph looking west across Battery Weed illustrating mine defense components and the overall open character of the landscape. Note some mature trees below Battery Bacon and west of Battery Weed. "Annual Report of Construction and Repair," National Archives, reproduced from Ingrid Wuebber and Edward M. Morin, "Phase 1A Archeological Investigation Rehabilitate Battery Weed Seawall and Dock" (Unpublished report prepared for the National Park Service by URS Corporation, 2006), annotated by SUNY ESF.

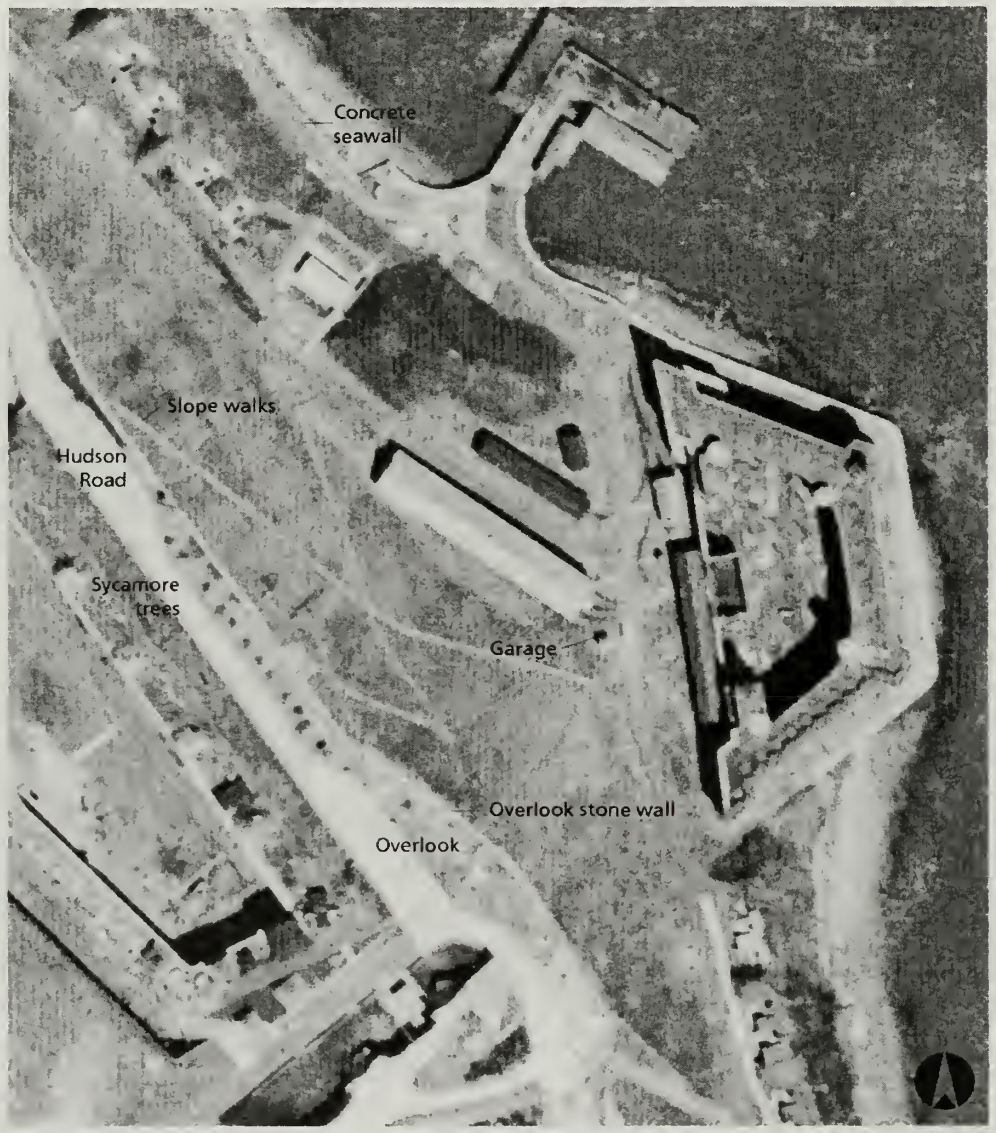
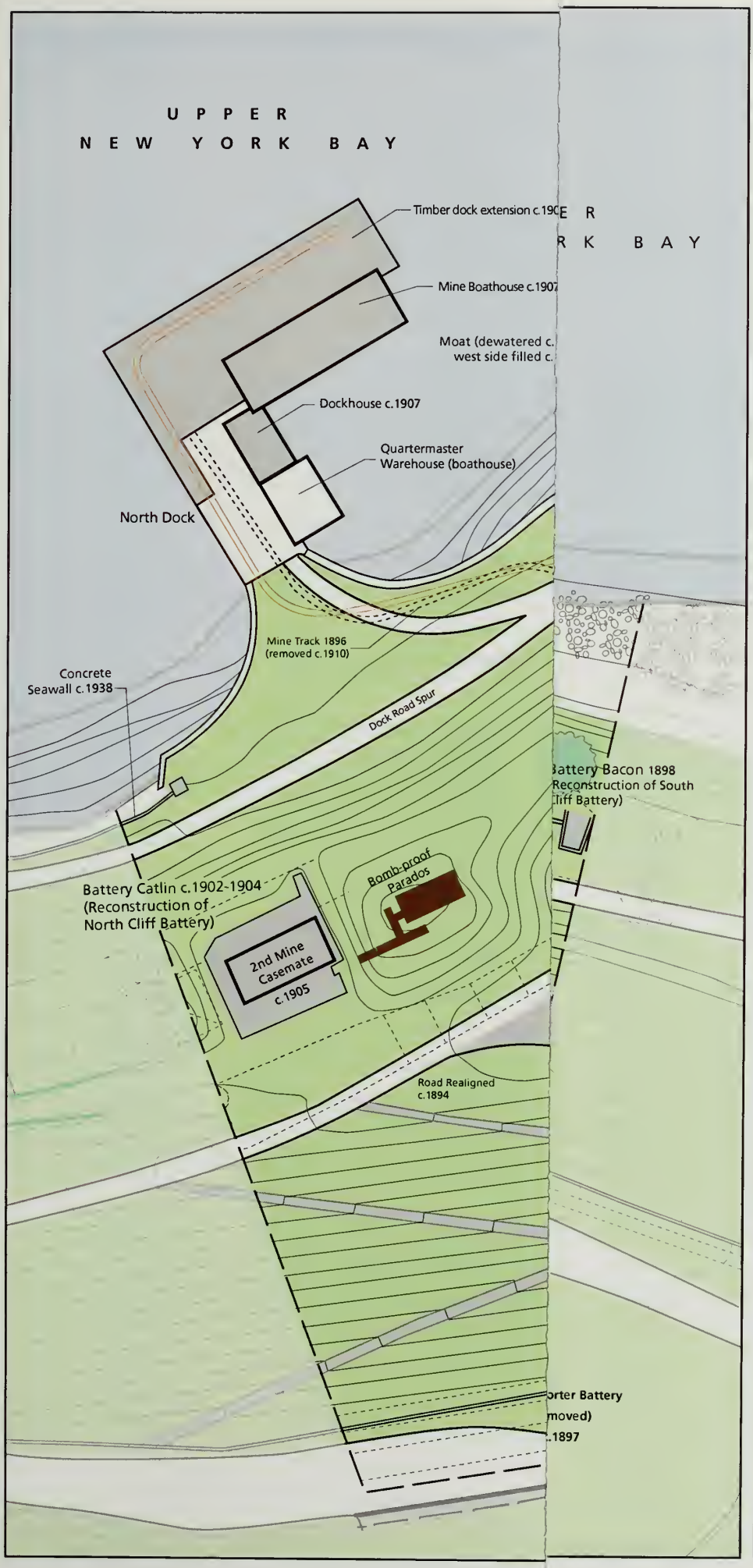


Figure 1.61: A 1940 aerial photograph showing the overall landscape of the Battery Weed headland and changes made over the previous two decades, including addition of a garage near the Torpedo Storage Building, improvement of the overlook with a stone wall and trees lining Hudson Road, and construction of a concrete seawall north of the north stone dock. The walks along the slope were intact at this time, although they had been cut off by the construction of the overlook stone wall. Aerial Viewpoint Aerial Photography, Inc., reproduced from Langan Engineering, "Pier/Seawall Evaluation and Ferry Feasibility Study, Fort Wadsworth, Staten Island New York" (Unpublished report prepared for the National Park Service, 1995).



Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area
Staten Island, New York

Endicott & WW I-II Period 1886 - 1945

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SUNY College of Environmental Science and Forestry
Syracuse, New York

SOURCES

1. Topographic plan of Long Slope, 1892 (Army)
2. Mine Defense Complex, 1907, 1945 (Army)
3. Plans of Mine Railway, 1896, 1921 (Army)
4. Aerial Photograph, 1940 (Aerial Viewpoint)
5. Topographical Survey, 1985 (Ettlinger & Ettlinger)

DRAWN BY

Jean B. Gleisner, Illustrator CS3, 2008

LEGEND

- Assumed Feature
- Removed During Period
- Added During Period
- 5' Contour
- Drainage Inlet
- Subsurface Structure/Foundation
- Building or Structure
- Wall
- Unpaved Road
- Paved Road
- Project Area
- Mine Railway Alignment by 1910
- Mine Railway Alignment by 1921
- Turf
- Deciduous Tree
- Rocky Beach

NOTES

Plan illustrates conditions in 1945.
Dates shown indicate initial construction and/or removal during period.
For features built prior to the period, no date is given
All vegetation shown in approximate scale and location.
Names indicated are those used during the period, when known.

N

0' 40' 80' 120' 160'

Drawing 3

Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area
Staten Island, New York

Endicott & WW I-II Period 1886 - 1945

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

In partnership with:

Department of Landscape Architecture
SUNY College of Environmental Science and Forestry
Syracuse, New York

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N

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Drawing 3

LATE MILITARY & NATIONAL PARK SERVICE PERIOD, 1946–2008

The close of World War II in 1945 marked the end of the Battery Weed headland's role in the coastal defense of New York Harbor. Although this role had been diminishing for some time, the refinement of aerial warfare during World War II launched a new era in military tactical technology in the post-war years that rendered final obsolescence to the ground batteries and mine defense system. With the development of long-range missiles came changing requirements for the siting of artillery, leaving little use for the water-front site with its earthen batteries and three-tiered granite casemated fort. While the headland would remain part of a larger active military reservation into the 1990s, its subsequent stewardship as part of Gateway National Recreation Area would return public use to the Battery Weed headland, the origins of which extended well back into the nineteenth century.

GROWTH OF STATEN ISLAND

In the years following World War II, the outer boroughs of New York City and adjoining counties experienced rapid growth as villages and farmland were transformed by housing tracts, industrial parks, and commercial strips tied to parkways and interstate highways. As the least developed of the city's five boroughs, Staten Island experienced similar patterns of growth. In the 1940s and 1950s, most development on the island was related to the growth of New Jersey, since the island was connected to the rest of New York City only by ferry. From 174,441 residents in 1940, the population of Staten Island climbed to 221,991 by 1960, an increase of about twenty-two percent. By 1980, the population had climbed to 352,029, an increase of an additional forty percent since 1960.[1] Much of this latter growth was due to completion of the Verrazano-Narrows Bridge in 1964 that linked the island to Brooklyn and the city's highway network. The later development occurred primarily in the central and southern parts of the island, not in the older neighborhoods surrounding the Narrows.

While proposals for tunnels and bridges across the Narrows dated back to the 1880s, it was not until 1946 that planning began for the suspension bridge that would ultimately be built under the direction of master planner Robert Moses. The Army had long fought plans for encroachment onto its military reservations on either side of the Narrows, but by the mid twentieth century, much of Forts Hamilton and Wadsworth had become obsolete. Although the Battery Weed headland was the actual narrowest point on the Narrows, planners chose a location just to its south that avoided the old granite fortress. After lengthy consideration by the Army as well as opposition from adjoining neighborhoods,

final construction was approved in 1957 for a steel suspension bridge designed by Othmar Ammann. Work was completed in 1964, resulting in a towering presence over Battery Weed."[2] (Figure 1.62) In the decades following completion of the bridge, hundreds of thousands of motorists passed through Fort Wadsworth, but few probably were aware of the historic military reservation beneath the approaches. As the military importance of the site declined, public interest in its value as open recreational space increased sufficient to support its inclusion within the National Park System.

FORT WADSWORTH: MILITARY RESERVATION TO PUBLIC PARK

Although the nation was at peace during the years immediately following World War II, Fort Wadsworth remained an active military reservation.[3] At the end the war, it was used for processing military service separations for soldiers returning home from the war. As personnel on base increased, a trailer camp was established in 1948 to provide housing on post for forty military families including those of the arriving Army Signal Service Units. The trailer camp, the first to be established in New York City, was unique in that city zoning prohibited them within the city limits, and the camp at Fort Wadsworth was only possible because of federal ownership of the property.[4]

With the eruption of the Korean War in 1950, Fort Wadsworth became host to New York National Guard Unit Antiaircraft Artillery Brigades and was used as a basic training station and antiaircraft defense site. An Army unit, the 52nd Antiaircraft Artillery Brigade, replaced the New York National Guard Unit at Fort Wadsworth in 1952, but the antiaircraft guns were located in field positions off site at other military posts, including Fort Tilden in Queens and Sandy Hook in New Jersey.[5] Fort Wadsworth served as the radar command and control center for the New York–New Jersey area NIKE missile systems from 1954 to 1966.[6] None of the NIKE facilities at Fort Wadsworth were located on the Battery Weed headland.

During construction of the Verrazano-Narrows Bridge between 1959 and 1964, many buildings in Fort Wadsworth were demolished and roads removed to make room for the bridge approaches. (Figure 1.63) In the eastern half of the reservation, the approaches were on a raised viaduct, which allowed for retention of New York Avenue and Hudson Road, as well as Battery Turnbull along the shoreline south of Battery Weed.

In the early 1970s, Fort Wadsworth was identified in federal legislation as a future site within the proposed Gateway National Recreation Area, an expansive federal park system composed of former military sites and city park lands on Long Island, Staten Island, and New Jersey. The Gateway legislation as passed in 1972 also established Golden Gate National Recreation Area in the San Francisco Bay Area as the country's first two urban national recreation areas within the National Park System. Unlike other former military sites in Gateway which had previously been decommissioned, the U. S. Department of Defense retained Fort Wadsworth as an active military reservation following passage of the park legislation. The reservation was home at the time to the 52nd Antiaircraft Artillery Brigade, but that unit left in 1974 and Fort Wadsworth became home of the U. S. Army Chaplain School until 1979. That year, the Army transferred jurisdiction to the Navy, which used the reservation as its headquarters for the New York Naval Station. Over the following decade, the Navy extensively redeveloped areas of Fort Wadsworth outside of Battery Weed and Fort Tompkins, which had been listed in the National Register of Historic Places in the early 1970s. Many former barracks and other support buildings along New York Avenue and to the west and south were demolished and new housing complexes and support building were constructed in their place. (Figure 1.64) The Navy did not redevelop any part of the Battery Weed headland. The Naval Station headquarters had a brief history at Fort Wadsworth, lasting just fifteen years at the time of its closure in August 1994. The following year, the 226-acre reservation was transferred to the National Park Service for incorporation into Gateway National Recreation Area and was opened to the public in 1997.[7]

In the years following the transfer, the National Park Service adapted portions of Fort Wadsworth for public visitation. It created a visitor center in one of the buildings along New York Avenue erected by the Navy in the 1980s, established headquarters of the Staten Island unit of Gateway in one of the former Army barracks, and opened Fort Tompkins and Battery Weed for limited guided tours. Public access to the reservation was returned after a long hiatus, and thousands came annually for the New York City Marathon, which began at Fort Wadsworth and proceeded across the Verrazano-Narrows Bridge for its five-borough route. Because there were far more buildings than it could use, the park entered into leases and use agreements to allow other agencies and partners, including the U. S. Coast Guard and Army Reserve, to occupy the extensive infrastructure of the reservation.

LANDSCAPE OF THE BATTERY WEED HEADLAND (DRAWING 4)

While the Army and later the Navy used the upland portions of Fort Wadsworth in the decades after World War II, the Battery Weed headland was, with few exceptions, abandoned as a functioning military facility. The only structure added during this time was a wood frame building, perhaps related to the post-war separations operation, constructed in c.1946 at the edge of the overlook to the east of Fort Tompkins.

Without any critical function in the Battery Weed headland, the Army put little into its care and the once highly maintained landscape began to change dramatically by the late 1950s and early 1960s. Vandals damaged the buildings and spray-painted graffiti on walls, formerly mown areas on slopes and batteries became wooded, and volunteer trees including tree of heaven (*Ailanthus altissima*) grew up around buildings and structures. (Figure 1.65, see also Figure 1.62) Battery Weed, the Torpedo Storage Building, and the second mine casemate were maintained in part for storage, while several small buildings were removed, including the testing room and service dynamite room along the west side of Battery Weed. Portions of the fortress, including its two magazines, were gutted, leaving only a shell. The only feature that continued its historic function during the post-war years was the lighthouse on the barbette tier. It was maintained as an aid to navigation until completion of the Verrazano-Narrows Bridge, which rendered it obsolete. The lighthouse was abandoned in 1965.[8]

The construction of the Verrazano-Narrows Bridge resulted in a dramatic change to the setting of the Battery Weed headland. Its 693-foot tall west tower loomed high over the landscape, just 340 feet to the south of the fort. While the bridge did not have a direct impact on the headland, its construction between 1959 and 1964 nonetheless led to a number of changes to the landscape. During this time, the grounds adjoining the fort were apparently used as a staging area and place for workers to park. (Figure 1.66) More importantly, in 1960, while the buildings beneath the approaches were being demolished, all of the frame buildings in the Battery Weed headland were removed.[9] These included the three cable tank buildings and the torpedo loading room along the west wall of Battery Weed, cable tank buildings 1, 2, and 3 north of the Torpedo Storage Building, and the mine boathouse, dock house, and Quartermaster warehouse on the north dock and its timber extension. These were all probably in poor condition after being largely abandoned for fifteen years and more. Damage from Hurricane Donna in September 1960 may also have led the Army to undertake the demolitions. The hurricane brought the high tide up to approximately one foot above the level of the seawall along with four and one half inches of rainfall and seventy mile-per-

hour winds.[10] The storm probably also damaged the stone seawall and south part of the timber dock, and washed out parts of the filled moat.

In the years following completion of the Verrazano-Narrows Bridge in 1965, the condition of the Battery Weed headland continued to deteriorate. Periodic maintenance was undertaken in Battery Weed itself, probably at the urging of those who recognized its historic value. In 1970, a National Guard crew cleared away the woody vegetation that had grown up on top of and around the fortification. (Figure 1.67) By 1980, when Fort Wadsworth was transitioning to use as the New York Navy Yard headquarters, Battery Weed was still kept free of encroaching vegetation, but the engineered slope and batteries had become covered in dense woods. (Figure 1.68) Portions of the seawall had also collapsed by this time. During the 1980s, the Navy continued to mow the areas within and immediately around Battery Weed as well as the south end of Battery Catlin, but let nature take its course elsewhere. By 1990 during the Navy's tenure, the Torpedo Storage Building had suffered a devastating fire that collapsed a portion of the roof. (Figure 1.69) The second mine casemate, which had been used for a time by a local rod and gun club, apparently also suffered fire damage around the same time, leaving only the shell of its brick walls. At the time the military transferred Fort Wadsworth to the National Park Service in 1995, most of the Battery Weed headland was heavily wooded except for the area surrounding the fortress. (Figure 1.70) These woods obstructed the view from the overlook and concealed the batteries and many of the remaining ancillary buildings in the headland.

In the years after the National Park Service acquiring Fort Wadsworth, began planning for the rehabilitation of the Battery Weed headland and its eventual opening to the public. Work was undertaken on stabilizing the key buildings and reestablishing the view from the overlook by clearing away a portion of the successional woods. The park redesigned the overlook, removing the frame building added in c.1946 and adding new pavement, shrubs, benches, a flagpole, and interpretive signs.[11] The southern part of Battery Weed Road was reconstructed with concrete gutter curbs, and several interpretive waysides were installed. The park was aided by volunteer groups and partners in preservation of the historic buildings, notably the repair of the lighthouse on Battery Weed completed in 2004 by volunteers with materials provided by the park.[12] Despite these improvements, limited funding and staffing kept the park from carrying out needed repairs and maintenance. For safety purposes, the park restricted public access to ruined buildings and much of the shoreline with cyclone fencing.

While the Battery Weed headland today has lost much of its historic landscape character, its historic infrastructure remains to large extent beneath overgrown

woods and invasive vines. Current park planning efforts are examining possible clearing of this overgrowth, as well as reconstruction of the Torpedo Storage Building for visitor services, rehabilitation of the north dock as a possible ferry landing, and repair of the stone seawall. With these and other much-needed repairs and improvements in interpretation, the landscape of the Battery Weed headland has the potential to convey fascinating insights into the history of the gateway to New York City and once again allow the public to enjoy one of the harbor's most scenic promontories.

ENDNOTES

[1] U. S. Bureau of the Census, *County and City Data Book: 2007*, Table B-1. Counties -- Area and Population, online at http://www.census.gov/ statab/www/ccdb.html (accessed 17 September 2008).

[2] Eastern Roads, "Verrazano-Narrows Bridge Historic Overview," online article at http://www.nycroads.com/crossings/verrazano-narrows/ (accessed 17 September 2008).

[3] David M. Alperstien, "Under Three Flags: Fort Wadsworth," in *C.A.M.P. Periodical*, summer 1979, 23.

[4] Robert Krist, "Fort Wadsworth, Part II" in *Staten Island Historian*, vol. XVIII, no. 4, October-December 1957, 20.

[5] Krist, 22.

[6] Krist, 23.

[7] National Park Service, *Draft Site Management Plan Fort Wadsworth Gateway National Recreation Area* (Government Printing Office, 1995), 1, 3.

[8] Lighthousefriends.com, "Fort Wadsworth, NY," online article at http://www.lighthousefriends.com/light.asp?ID=754 (accessed 17 September 2008).

[9] Triborough Bridge and Tunnel Authority, "Replacement of Facilities Displaced by the Narrows Bridge, Fort Wadsworth Water Distribution System Area 3" (1959 updated to October 8, 1963); 1961 Aerial Viewpoint aerial photograph. The 1959 plan shows the buildings standing, while the 1961 aerial shows them removed.

[10] Langan Engineering and Environmental Services, "Pier Seawall Evaluation and Ferry Feasibility Study, Fort Wadsworth, Staten Island, New York" (Unpublished report prepared for the National Park Service, 1995), 7.

[11] The Navy may have made some improvements to the overlook prior to this time. A flagpole is visible on the overlook in a 1994 photograph (figure 1.70).

[12] Lighthousefriends.com.

Figure 1.62: Photograph taken in 1964 looking east over Battery Weed showing the Verrazano-Narrows Bridge nearing completion. This photograph also illustrates the advancing natural succession on the formerly open barbette tier of Battery Weed and the engineered slope. Photograph 12C02D, Still Photograph Division, National Archives II, College Park, Maryland.

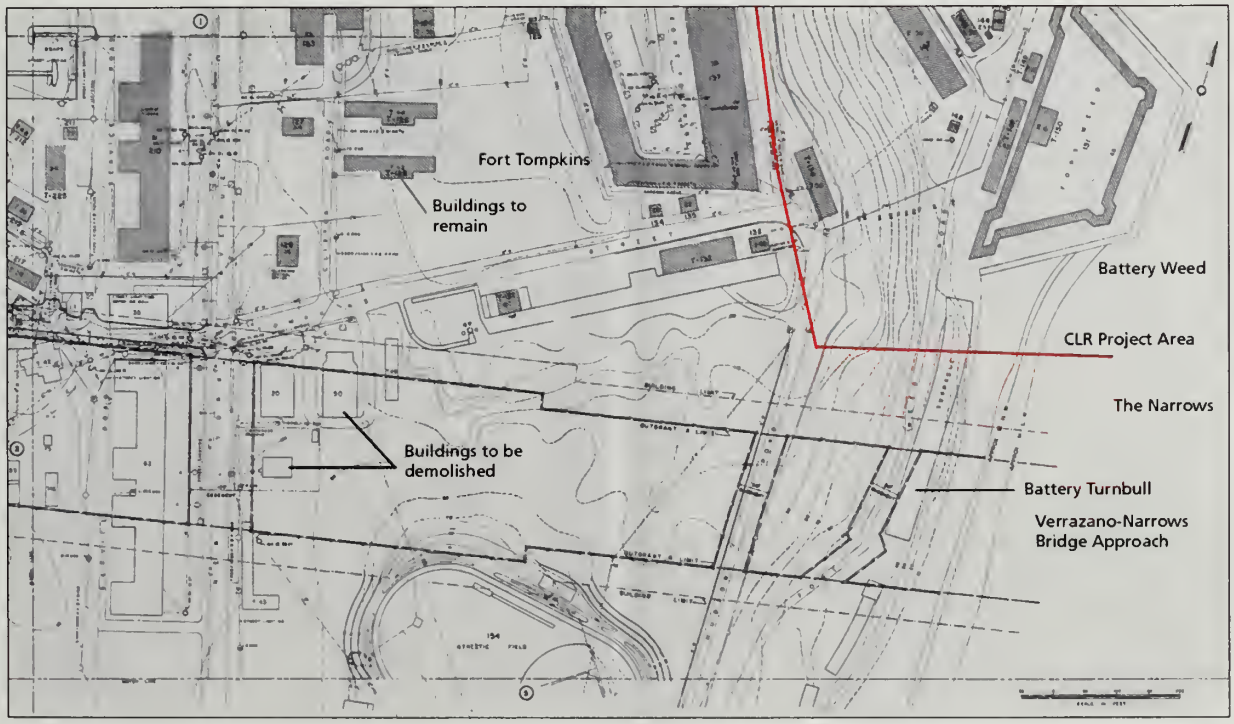

Figure 1.63: Plan drawn in 1959 showing buildings to be demolished (white fill) on approaches to the Verrazano-Narrows Bridge at the eastern end of Fort Wadsworth. The area north of Battery Weed was not included on the plan. Triborough Bridge and Tunnel Authority, "Replacement of Facilities Displaced by the Narrows Bridge, Fort Wadsworth Water Distribution System Area 3," 1959 updated to 1963. Gateway National Recreation Area Archives, Fort Wadsworth, annotated by SUNY ESF.

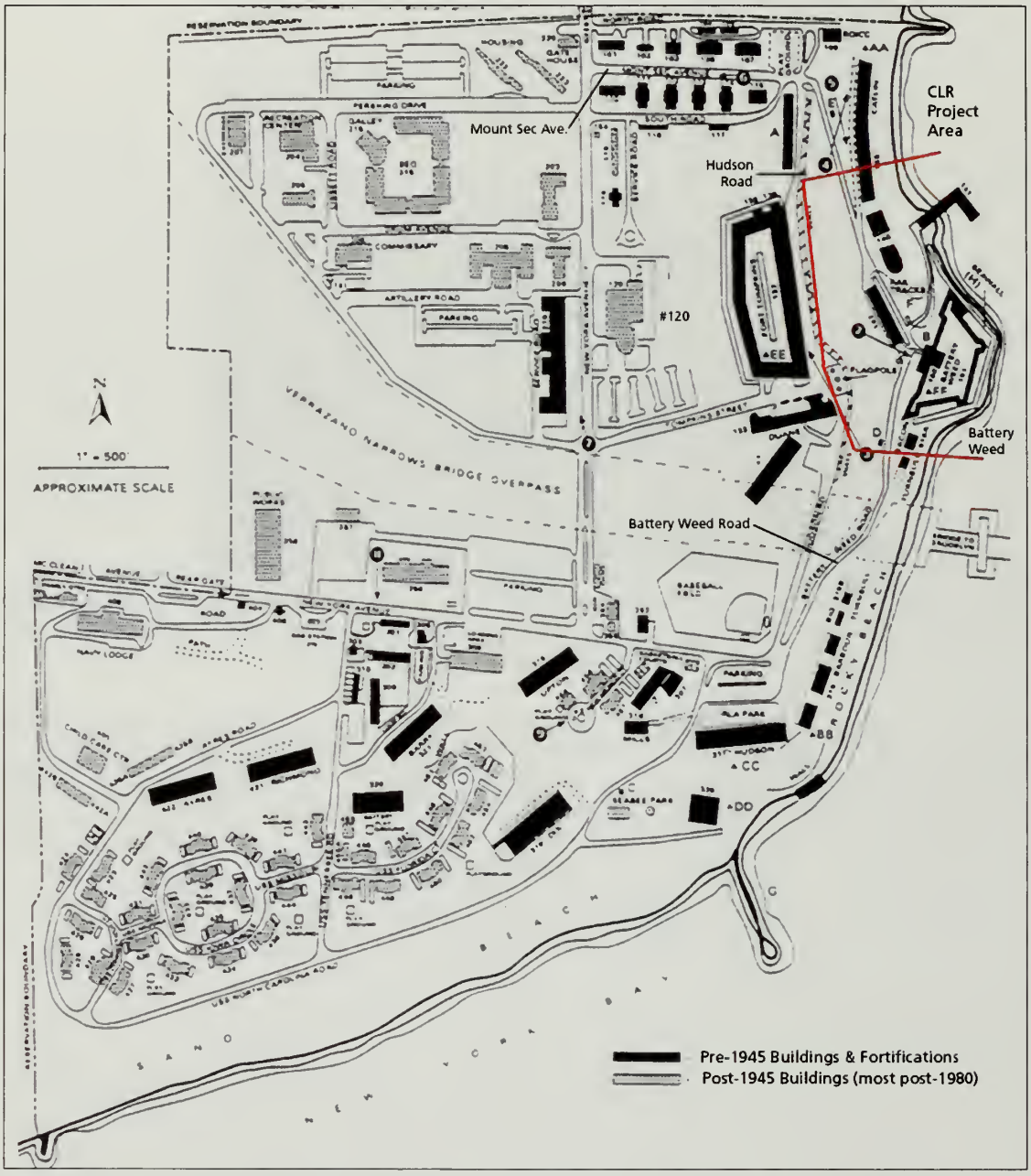

Figure 1.64: Map of the 226-acre Fort Wadsworth reservation indicating extent of redevelopment after 1945, mostly dating to the 1980s during use as the New York Naval Yard headquarters. National Park Service, Draft National Register Nomination for Fort Wadsworth, 1997, annotated by SUNY ESF.

Figure 1.65: Photograph of Battery Weed in 1964 showing poorly maintained conditions that included piles of soil and ruts in the parade ground and volunteer vegetation growing up and over the building. Print 12C02F, Still Pictures Division, National Archives II, College Park, Maryland.

Figure 1.66: A 1961 aerial photograph showing removal of many of the mine defense system support buildings and buildings on the north stone dock. The cars parked near the fort may be part of staging operations for the construction of Verrazano-Narrows Bridge, the footings of which are visible at the lower right. Aerial Viewpoint Aerial Photography, Inc., reproduced from Langen Engineering, "Pier/Seawall Evaluation and Ferry Feasibility Study, Fort Wadsworth, Staten Island New York" (Unpublished report prepared for the National Park Service, 1995).

Figure 1.67: A 1970 photograph looking northwest across the barbette tier of Battery Weed showing a National Guard crew completing a landscape maintenance detail. Prior to this work, the barbette tier was overgrown with scrub and trees. Note shell of fort's magazine in the background. Unnumbered photograph, Gateway National Recreation Area Archives, Fort Wadsworth.

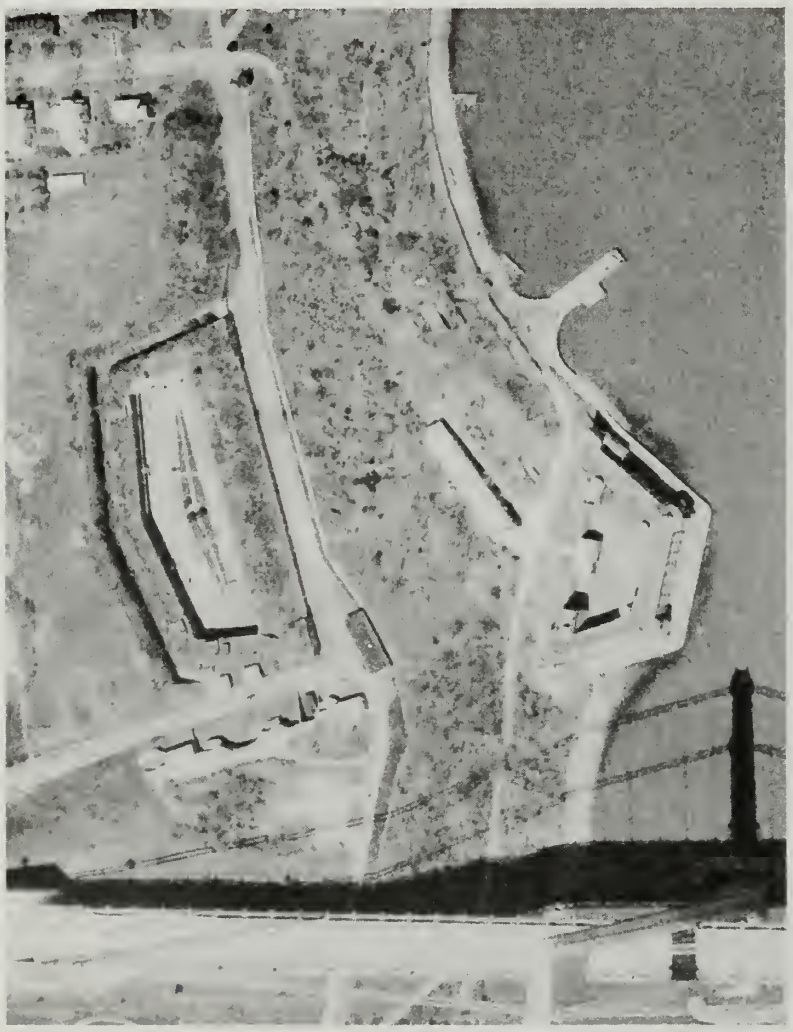

Figure 1.68: A 1980 aerial photograph of the Battery Weed headland illustrating growth of successional woods on the slope and batteries, and loss of a portion of the timber dock. Aerial Viewpoint Aerial Photography, Inc., reproduced from Langen Engineering, "Pier/Seawall Evaluation and Ferry Feasibility Study, Fort Wadsworth, Staten Island New York" (Unpublished report prepared for the National Park Service, 1995).

Figure 1.69: A 1990 aerial photograph showing conditions of the Battery Weed headland toward the end of Navy administration illustrating dense woods on the slope and batteries, and fire damage to the lower end of the Torpedo Storage Building. Aerial Viewpoint Aerial Photography, Inc., reproduced from Langen Engineering, "Pier/Seawall Evaluation and Ferry Feasibility Study, Fort Wadsworth, Staten Island New York" (Unpublished report prepared for the National Park Service, 1995).

Figure 1.70: A 1994 bird's-eye view of Fort Wadsworth looking west shortly before its transfer to the National Park Service, showing extensive woods on the slope and batteries. The approach to the Verrazano-Narrows Bridge is visible in the left background. Langen Engineering, "Pier/Seawall Evaluation and Ferry Feasibility Study, Fort Wadsworth, Staten Island New York" (Unpublished report prepared for the National Park Service, 1995).

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4. Field Survey, April 2007 (SUNY ESF)

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All vegetation shown in approximate scale and location.
Names indicated are those used during the period, when known.

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0' 40' 80' 120' 160'

Drawing 4

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Drawing 4

II. EXISTING CONDITIONS

The existing character of the Battery Weed headland is the result of nearly a century of development as a coastal fortification protecting the entrance to New York Harbor from the Atlantic Ocean. This chapter provides a general discussion of the existing conditions (2008) of the Battery Weed headland landscape, including an overview of its environmental conditions, regional context, and immediate setting as part of the former Fort Wadsworth military reservation.[1] The intent is to clearly identify and describe the overall characteristics that compose the cultural landscape today.[2] Detailed feature-level information on existing conditions is provided in the analysis and evaluation chapter.

The Battery Weed landscape retains many of its character-defining features from its period of federal military use and development between 1847 and 1945. These features, including the Battery Weed fortress, ground batteries, a seawall and stone dock, and an engineered slope above Battery Weed, are characteristic features of the Third System of coastal defenses developed between 1847 and 1886. The landscape also retains several later features related to improved armament and a marine mine defense system that was one of the chief innovations of the Endicott era in coastal defenses developed between 1887 and World War I. Military use and development of the Battery Weed headland largely ceased after World War II. Although portions of the landscape have been well maintained, today the site overall has a feeling of abandonment. This is a result of deteriorated buildings and loss of the military's once highly-maintained landscape that is now dominated by second-growth woods and invasive vines. Portions of the site are fenced off due to hazardous conditions.

ENVIRONMENTAL SETTING

Battery Weed is located within the Atlantic Coastal Plain physiographic region, within the Eastern Broadleaf Forest (Oceanic) ecological sub-region of the upper Atlantic coastal plain. This ecological sub-region consists mostly of northeastern oak-pine forest, along with fringes of northern cordgrass prairie, cedar bogs, transitional pine forests, deciduous swamps, pine plains, and grassy savannas. The region is generally characterized by level to gently sloping terrain. However, glacial deposits across Staten Island resulted in a much more varied topography. Todt Hill, less than three miles west of Battery Weed, is the highest hill on the Eastern Seaboard south of Maine at an elevation of 410 feet. The landform of the Battery Weed headland, with its 125-foot change in elevation that is one of the highest points along the coastline of New York Harbor, was originally formed by a glacial terminal moraine and thousands of years of coastal erosion.[3]

Battery Weed is located within the urban core of the New York bight (recessed coastal area) ecosystem. The area historically was a rich and diverse ecological region due to the confluence of several major river systems at the Atlantic Ocean. Today, three hundred and ninety five ecologically important species are known to occur within the ecosystem, which is on the North American migratory flyway. Peregrine falcons, on the federal and state lists of endangered species, nest on the Verrazano-Narrows bridge immediately to the south of the project area, and short-nosed sturgeon, listed as endangered by the national Marine Fisheries Service, exists within the Hudson River at New York Harbor.[4] The rocky inter-tidal areas and tidal wetland areas immediately to the north and south of the Battery Weed headland consist of salt and brackish marshes, tidal creeks, and protected open water coves.[5]

The climate of Staten Island is considered humid continental with hot, damp summers and cool to cold winters. Conditions are affected by close proximity to the Atlantic Ocean. Temperatures below zero degrees Fahrenheit only occur about once per decade on average, but temperatures in the teens and twenties are common in mid-winter. New York City winter conditions range from snowstorms that paralyze the city with over a foot of snow, to mild, almost snowless winters. Summers are hot and humid, with temperatures commonly exceeding ninety degrees, although it is often a few degrees cooler on Staten Island.

LANDSCAPE CONTEXT

The Battery Weed headland is located in the New York City borough of Richmond on the eastern shore of the Staten Island, approximately six miles by water south of Manhattan. The site lies on the western shore of the Narrows, which forms the southern entrance to New York Harbor where the landforms of Staten Island and Long Island lie closest together. (Figure 2.1) Directly across the Narrows at the opposite side of the Verrazano-Narrows Bridge is Fort Hamilton in Brooklyn, the eastern counterpart to Fort Wadsworth. The bridge is part of Interstate Route 278 that extends from New Jersey across Staten Island and becomes the Brooklyn-Queens Expressway on Long Island. Staten Island is connected to mainland New Jersey by way of the Goethals Bridge, Bayonne Bridge, and Outerbridge Crossing. As of 2006, Staten Island had a population of 464,573, the smallest of the city's five boroughs, with a density of 7,588 people per square mile.

The Battery Weed headland is part of Fort Wadsworth, a former federal military reservation that was part of a system of New York Harbor defenses dating back to the eighteenth century. Today, Fort Wadsworth is a part of the Staten Island

Unit of Gateway National Recreation Area, a 26,000-acre urban park system in the New York Harbor region administered by the National Park Service. To the north and east of Fort Wadsworth are older street-car suburbs, with Saint George the primary urban center two miles to the north. Along the northern boundary of Fort Wadsworth is Arthur Von Briesen Park, a city park. The approach and toll plaza for the Verrazano-Narrows Bridge extend across the center of Fort Wadsworth from east to west (see Figure 2.1). Along the shoreline south of Fort Wadsworth are boardwalks and bike paths that connect a series of public parks within Gateway National Recreation Area.

Fort Wadsworth is a 226-acre federal property consisting of two nineteenth-century stone forts (Fort Tompkins and Battery Weed), nineteenth and early twentieth-century earthen batteries along the shoreline, and approximately twenty buildings constructed prior to 1945 (see Figure 1.64). Among these buildings is a row of officers' quarters along Mount Sec Avenue at the northern end of the reservation. (Figure 2.2) Approximately sixty buildings at Fort Wadsworth date to after 1945, most built by the Navy in the 1980s when it redeveloped the reservation as the headquarters of the New York Navy Yard. (Figure 2.3) The park maintains a visitor center near Fort Tompkins in building #120, a newer building along New York Avenue, one of two main thoroughfares through the site. Many of the buildings on the reservation are presently occupied by other agencies, including the Army Reserve Center and the U.S. Coast Guard Auxiliary.

Access to Battery Weed and the shoreline of the Narrows is from Battery Weed Road, which begins at Mount Sec Avenue and Hudson Road on the north, extends down the bluff toward the shoreline and fort, and then goes back uphill beneath the Verrazano-Narrows Bridge where it terminates at Hudson Road and Richmond Avenue.

THE BATTERY WEED HEADLAND (DRAWING 5)

The Battery Weed headland, on the easternmost point of Staten Island just to the north of the Verrazano-Narrows Bridge, is defined for this cultural landscape report as the area from the top of the bluff at Fort Tompkins along Hudson Road down to the shoreline of the Narrows, including portions of the earthen batteries to the north and south of Battery Weed. The project area is organized into three character areas: the overlook and slope, the fortress grounds, and the north dock and seawall. (Figure 2.4) The overlook and slope, the area first encountered by visitors, extends from Hudson Road down to the base of the slope at Battery Weed Road; the fortress grounds encompass the lower level of the site between the base of the slope and the water's edge including Battery Weed and the

Torpedo Storage Building; and the north dock and seawall character area includes the dock, seawall, and moat surrounding Battery Weed.

Although the public can access the overlook and some areas of the fort grounds, other areas, including the waterfront and the interior of the fort featuring remnants of a rich military history, are accessible only by guided tours. Features currently hidden to varying degrees in overgrown vegetation include buildings, gun batteries, and circulation and rail systems. There is no authorized public access to the waterfront seawall and north dock. Unauthorized access is possible, however, from existing paths adjacent to the site and from the bay by boat.

OVERLOOK AND SLOPE

The overlook at the crest of the steep slope above Battery Weed rises approximately 115 feet above the Narrows, less than 500 feet to the east. The view from the overlook is a panorama that takes in New York Harbor and the Manhattan skyline to the northeast, the flat expanse of Brooklyn across the Narrows to the east, the Verrazano-Narrows Bridge and the Atlantic Ocean to the south, and the granite walls and grassy parapets of Battery Weed in the foreground. (Figure 2.5) The view is partially obstructed to the north and south by successional woods that have grown up on the slope since World War II.

The overlook features a terrace that is lined by a fieldstone wall constructed in c.1938, probably by the Works Progress Administration. The wall reaches a maximum height of thirty-eight inches and extends for approximately 2,000 feet along Hudson Road, beyond the project area for this report. In 1995, the overlook terrace was redesigned by the National Park Service. Concrete walks were built along the stone wall and a central gathering area was built at the widest point. (Figure 2.6) This area includes concrete paving, grass panels, and a flag pole on axis with the intersection of Tompkins Road surrounded by shrubs, benches, and a low concrete wall with ornamental metal picket fencing. The overlook terrace includes two telescopic viewing stations and four interpretive park signs.

The slope, graded from the natural bluff in c.1873, extends eastward from the sidewalk and overlook terrace down to Battery Weed Road at a fifty percent slope. Portions of the once evenly-graded slope have suffered erosion with gullies forming along drainage corridors. The slope is densely vegetated with areas of successional woods that have grown up since World War II on formerly mown ground. Species here include white ash *(Fraxinus americana)*, American elm *(Ulmus americana)*, princess tree *(Paulonia tomentosa)*, Norway maple *(Acer platanoides)*, tree of heaven *(Ailanthus altissima)*, sweet birch *(Betula lenta)* and

poplar *(Populus sp.)*. Patches of tall grasses and shrubs such as common mulberry *(Morus alba)* and California privet *(Ligustrum ovalifolium)* are also visible, but most of the slope is covered in a thick mat of porcelain berry *(Ampelopsis brevipedunculata)*, a vigorous invasive perennial vine in the grape family. This vine has spread over the entire area that was cleared by the park in c.1995 to reestablish the view from the overlook. Remnants of concrete-edged walks, built diagonally across the slope in c.1892 and closed with addition of the overlook stone wall in c.1938, exist beneath the invasive vine.

FORTRESS GROUNDS

At the foot of the slope are the fortress grounds, occupying the lower area of the headland. The area includes the parade ground within Battery Weed, Battery Weed Road, and the remains of buildings and earthworks between Battery Bacon to the south and the second mine casemate in Battery Catlin to the north. The project area for this report only includes that portion of the earthworks and ground batteries adjacent to Battery Weed. The complete earthworks, covered in dense vegetation, extend along the shore to the north and to the south several hundred feet.

Battery Weed is a massive Third System granite structure built between 1847 and 1864. Two small concrete additions dating to c.1887 extend off the northwest bastion. The main entrance to the fort is through a pedimented entrance in the center of the west curtain wall that extends through the adjoining guard house to the interior parade ground (see Figure 2.5). Access to this entrance prior to 1904 was controlled by a drawbridge over a moat. The shells of two, four-story rectangular magazines are located to either side of the guard house along the west curtain wall. Within the fort, fifty-one open arched casemates face the parade ground, rising approximately thirty-five feet from ground level and intersecting at four-story stair towers. The open top floor of the casemates, known as the barbette tier, features a turf surface with gun emplacements fronting a parapet along the water side. A wrought-iron fence lines the inner edge of the barbette tier above the parade ground. At the northeast bastion is a lighthouse built in 1903 after most of the guns were removed from the fort.

The parade ground, measuring approximately 130 by 230 feet, is surfaced in mown grass (see Figure 2.5). The surface is nearly level, but is pitched toward surface drains along the east side, probably dating to the nineteenth century, that empty into a cistern. Adjacent to the surface drains are two concrete long rectangular ammunitions pads flanking a central flagpole added prior to 1945. From the parade ground, the roof of the lighthouse is visible on the barbette tier,

as is the enormous western span and tower of the Verrazano-Narrows Bridge that dominates the view to the south.

The area of the fortress grounds between the west wall of Battery Weed and the base of the slope and earthworks is relatively level with mown grass interrupted by the concrete remains of building foundations and other structures of the mine defense system. Battery Weed Road, an approximately twelve foot-wide asphalt road dating to the earliest development of the headland, enters this area from the north and south bordering Batteries Bacon and Catlin. Contemporary additions to the road include a metal guardrail and concrete gutter-curbs on a reconstructed section south of the fort. There is a curb cut on the east side of the road approximately eighty feet before the main entrance into the fort that provides access to a recently developed unsurfaced access road that leads to the southwest bastion and the waterfront.

In front of the entrance to Battery Weed, the road widens to an area approximately forty feet by fifty feet that serves today as the central gathering place for visitors and includes an interpretive wayside and three benches. There are no permanent public restrooms in the area, although a portable toilet is maintained nearby. The area is bordered by the remains of the Torpedo Storage Building constructed in c.1894 and a small concrete-block garage constructed sometime between 1924 and 1940, and is crossed by remnants of the mine railway developed between 1896 and c.1921. Within the roadbed, the rails are set in five foot-wide sections of concrete paving. A contemporary drain inlet extends across the forty-five foot wide paved area to stop runoff from entering the fort. In the grassy area along the west side of Battery Weed, on top of what was up until c.1887 a water-filled moat, are remnants of support buildings and structures from the mine defense system that were removed in c.1960 (see Figure 2.5). These include a cable testing trough built in c.1904, concrete footings from cable tank buildings constructed in c.1904-1905, and traces of a circular cable testing tank built in c.1921.

To the north of Battery Weed, the fortress grounds slope upward gently toward Battery Catlin. Between the south end of the battery and Battery Weed Road are the one-foot high concrete foundation remnants of cable tank buildings 1 and 2 built in c.1898-1899, and cable tank building 3 built in c.1904. These buildings were removed in c.1960. Remains of the mine railway extend from the cable tank building foundations outward toward the north dock. Between the sites of the cable tank buildings is a small concrete shed constructed in c.1940 and presently covered in vegetation. To the east of these buildings is the road that extends from Battery Weed Road toward the north dock. (Figure 2.7) Approximately twenty feet from the waters' edge at the north end of Battery Weed, a six-foot high

contemporary chain link fence with a locked gate prevents public access to the north dock and seawall area. The dock road is washed out beyond the fence in an area covered in weeds, scrub, and debris.

Battery Catlin is a large, 750-foot long earthwork initially built during the Civil War and reconstructed in c.1902-04. The battery rises sharply about forty-six feet above the dock road (see Figure 2.7). The earthwork is covered in dense vegetation including mature trees and vines. Buried in the south end of the battery is a c.1865 bomb-proof parados measuring approximately twenty feet by forty feet. The subsurface chamber is accessible by a set of steps and passageway with granite cheek walls. On top of the battery across from this entrance is the remains of the second mine casemate built in c.1905 that housed the firing controls for the mine defense system. Only the exterior brick walls remains from damage sustained in the 1980s. The area is cordoned off by a chain-link fence. The portion of Battery Catlin to the north, containing the gun emplacements, is outside the area documented for this report.

The portion of the fortress grounds south of Battery Weed includes a natural rocky beach strewn with rusted pieces of iron, lumber, and trash that have washed ashore. Remnants of what may be the timber cofferdam dating to the construction of the Battery Weed seawall between c.1850 and 1871 are visible at low tide. Immediately south of the southwest bastion of Battery Weed, the grade rises steeply at an approximate fifty percent slope to Battery Bacon, an earthen battery initially constructed during the Civil War and reconstructed in 1898. Most of Battery Bacon, which was historically maintained as open turf, is covered in dense vegetation except for the north end. This section, in the shadow of the Verrazano-Narrows Bridge, has been cleared to interpret one of the battery's 1898 gun emplacements, set in a small patch of mown grass. (Figure 2.8) Battery Bacon is part of a system of batteries along the eastern shore to the south of Battery Weed that include Batteries Turnbull and Barbour. Portions of this system were altered with the construction of the Verrazano-Narrows Bridge in 1959-1964.

NORTH DOCK AND SEAWALL

The north dock and seawall character area forms the shoreline of the Battery Weed headland, including the moat surrounding the fort. The shoreline curves to the north to a filled bulkhead area from which the north dock extends. Access to the dock area is across on a washed-out section of the dock road, where weeds and shrubs have replaced the original road surface. Another road once extended along the shoreline north from the dock road along the east side of Battery Catlin. No trace of this road is visible today within the project area.

The seawall that protects the headland extends from the southwest bastion of Battery Weed to a point north of the north dock. The wall was originally constructed in two sections, one forming the outer wall of the moat and the other continuing north as a retaining wall beyond the fort toward the dock. The moat, which was dewatered in c.1887 and partially filled in c.1904, originally extended around the entire fort. The west or inland side is today filled to ground level, while the shoreline sides are filled nearly to the top of the seawall. (Figure 2.9) This fill is covered in grass, weeds, and shrubs, with gravel added to prevent washouts during storms. The moat section of the seawall remains intact, with one part recently rebuilt along the north channel front of the fort.

North of Battery Weed, a large part of the retaining wall section of the seawall has collapsed due to the effects of storms and tide action. (Figure 2.10) Seawall capstones as well as their large supporting stones have been tipped and tossed about and remain scattered just above the water's edge. The section of the stone seawall north of the dock has also collapsed. Beyond this section, the water recedes across a rocky beach that is lined by a concrete seawall purportedly built as a Works Progress Administration project in c.1938.

The north dock, built in c.1858, is located approximately 150 feet to the northwest of Battery Weed (see Figure 2.10). The dock once featured a boathouse/Quartermaster's warehouse built in c.1877, a large timber extension built in c.1907, and a dockhouse and mine boathouse built in c.1907. These additions were removed in c.1960. The existing dock measures approximately forty feet by eighty feet in an irregular L shape with some collapsed sections. It is set on granite piles supporting a brick vaulted structure, and is paved in granite blocks and concrete with weeds growing through the joints. The dock features two iron bollards, a bronze National Ocean Survey Benchmark, and granite steps that descend into the water at the southwest inner corner. A set of iron rails, remnants of the mine railway that once ran to the end of the timber extension, remain on the dock and its approach. Timber piles remain from the timber extension off the north and east ends of the dock. An electric utility pole, which once fed the Quartermaster and mine defense facilities on the dock, remains near the southwest corner.

PARK OPERATIONS AND USE

The National Park Service maintains the Battery Weed headland, along with adjoining areas of Fort Wadsworth including Fort Tompkins, as a public area that is open from dawn until dusk. Visitor services are located at the park's visitor center in Building 120, a contemporary facility along New York Avenue to the west of Fort Tompkins. Visitors arriving by car typically enter through the main

Fort Wadsworth gate on New York Avenue and park at a large parking lot south of Building 120. The visitor center provides an orientation to Fort Wadsworth with interpretive displays and materials including a film that introduces the military history of Battery Weed. Visitors are encouraged to walk to the overlook above Battery Weed, 650 feet east of the visitor center. While there are regularly scheduled tours of Fort Tompkins, tours for Battery Weed are only by appointment. Aside from walking through the Battery Weed headland and viewing the interpretive panels, other activities at and near the headland advertised by the park include biking, bird watching, and fishing by permit. Occasional special events are held such as a popular Halloween tour of Battery Weed. The New York City Marathon begins annually at Fort Wadsworth, but this has little impact on the headland.[6]

The landscape of the Battery Weed headland is maintained by park staff and through contractual services. Maintenance is focused on the overlook terrace, parade ground and area surrounding Battery Weed, and on the approaches along Battery Weed Road where interpretive waysides and benches are located. The north dock, moat, and seawall are off-limits to the public and are not maintained on a regular basis, as evidenced by the washed-up debris on the beach. The ruins of the Torpedo Storage Building and second mine casemate are fenced off to prohibit access. The park does not currently manage the vegetation on the slopes and batteries, which has allowed continued growth of woods and invasive vines on historically open ground. Planning is presently underway to manage this vegetation and to repair and rehabilitate many of the ruined and deteriorated buildings and structures on the Battery Weed headland.

ENDNOTES

[1] Existing conditions as presented in this report are based on the site history and on fieldwork completed in November of 2006 and 2007, as well as discussions with Phil Melfi, Site Manager at Fort Wadsworth.

[2] Robert R. Page, Gilbert, Cathy A., Dolan, Susan A., *A Guide To Cultural Landscape Reports: Contents, Process, and Techniques* (Washington, DC: U.S. Department of the Interior National Park Service, 1998), 56.

[3] W. Henry McNab and Peter E. Avers et al., *"Ecological Subregions of the United States,"* http://www.fs.fed.us/land/puds/ecoregions/ (accessed 14 November 2006).

[4] Draft Site Management Plan Fort Wadsworth Gateway National Recreation Area, (U.S. Department of the Interior National Park Service, 1995) 84.

[5] U.S. Fish & Wildlife Service, National Conservation Training Center, *New York – New Jersey Harbor/Urban Core Overview*, (accessed 28 July 2007), http://training.fws.gov/library/pubs5/web_link/text/urb_core.htm

[6] Gateway National Recreation Area website, "Things to do—Staten Island," http://www.nps.gov/gate/planyourvisit/thingstodostatenisland.htm (accessed 22 September 2008); communication with park staff.

Figure 2.1: Current aerial photograph of the Battery Weed headland showing its setting within Fort Wadsworth and surrounding areas of Staten Island, and its relationship to the Narrows, the Verrazano-Narrows Bridge, and Fort Hamilton in Brooklyn. USGS aerial photograph, composite courtesy of Microsoft Live Search, annotated by SUNY ESF.

Figure 2.2: View looking east along Mount Sec Avenue in 2007 showing an older area of Fort Wadsworth containing officers' quarters. The road to Battery Weed is at the end of this street. SUNY ESF.

Figure 2.3: View looking west from New York Avenue taken in 2007 showing an area of Fort Wadsworth redeveloped by the Navy in the 1980s. This area is presently used by the U. S. Coast Guard Auxiliary. SUNY ESF.

Figure 2.4: Diagram illustrating the three landscape character areas of the Battery Weed headland used to organize description of existing conditions. SUNY ESF.

Figure 2.5: Panoramic view taken in 2007 looking northeast from the overlook terrace with Manhattan visible in the distance. This photograph also illustrates the fortress grounds, including the parade ground, central area in front of the main fort entrance, mine defense system remnants, and portion of the ruined Torpedo Storage Building. SUNY ESF.

Figure 2.6: The central gathering place on the overlook terrace looking north in 2007 illustrating the stone wall constructed in c.1938, and concrete walks, shrubs, flagpole, and park furniture dating to a c.1995 improvement. SUNY ESF, 2007.

Figure 2.7: The fortress grounds looking east toward the dock road in 2007, with the rise of overgrown Battery Catlin to the left and Battery Weed to the right. The blue object is a portable toilet, and beyond the fence is the north dock. SUNY ESF.

Figure 2.8: The fortress grounds looking north along Battery Weed Road in 2007 with the gun emplacement of Battery Bacon to the right. The shadow is from the Verrazano-Narrows Bridge. SUNY ESF.

Figure 2.9: View looking southeast in 2007 along the north side of Battery Weed illustrating the filled moat and supporting granite seawall. SUNY ESF.

Figure 2.10: View looking north in 2007 showing the collapsed section of seawall and the north dock. The wood piles are remnants from a timber extension to the dock built in c.1907 and lost after 1960. SUNY ESF.

Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area
Staten Island, New York

Existing Conditions 2008

OLMSTED CENTER for LANDSCAPE PRESERVATION

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

in partnership with:

Department of Landscape Architecture
SUNY College of Environmental Science and Forestry
Syracuse, New York

SOURCES

1. Aerial Photography, 2007 (USGS)
2. Vegetation Map, 1995 (NPS)
3. Field Survey, April 2007 (SUNY ESF)
4. Topographical Survey, 1985 (Ettlinger & Ettlinger)

DRAWN BY

Jean B. Gleisner, Illustrator CS3, 2008

LEGEND

- Assumed Feature
- 5' Contour
- Fencing
- Drainage Inlet
- Subsurface Structure/Foundation
- Building or Structure
- Wall or Slope Path Edge
- Unpaved Road
- Paved Road
- Project Area
- Turf, Low Ground Cover
- Vines, Scrub
- Successional Woods
- Rocky Beach

NOTES

All vegetation shown in approximate scale and location.
Names indicated are those currently in use
Plan does not show minor ground-surface utilities.

N

0' 40' 80' 120' 160'

Drawing 5

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N

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Drawing 5

III. ANALYSIS AND EVALUATION

This chapter provides an analysis of the Battery Weed headland landscape and an evaluation of its historic character based on the findings of the site history and existing conditions chapters. The analysis and evaluation have been developed according to the National Register Criteria for Evaluation and the National Park Service's *Guide to Cultural Landscape Reports: Contents, Process, and Techniques* (1998). The Battery Weed headland addressed in this chapter encompasses the landscape within CLR project area, from the shoreline to Hudson Road at the top of the slope, and from Battery Bacon on the south to Battery Catlin on the north.

This chapter is divided into two main sections. The first examines the historical significance of the landscape according to the National Register Criteria for the Evaluation of Historic Properties. Included within this is a summary of existing National Register documentation for Battery Weed; recommendations for updating the documentation pertaining to the landscape including the period of significance, areas of significance, and boundaries; and an evaluation of historical integrity according to the seven aspects defined by the National Register. The second section of this chapter evaluates the landscape by comparing historic and existing conditions for the purpose of defining historic character and updating the list of contributing and non-contributing landscape features. This section also describes major features that have been removed since the end of the historic period in 1945.

HISTORICAL SIGNIFICANCE

REVIEW OF EXISTING NATIONAL REGISTER DOCUMENTATION

Battery Weed was listed in the National Register of Historic Places in 1972 as a structure for significance in the areas of "Military" and "Architecture," in the context of Third System coastal fortifications. The current National Register documentation is limited to the granite structure itself, with a period of significance given as 1847 to 1861. The boundary of the property is not described, and since the documentation describes only the structure, it does not discuss contributing resources and associated features of the site that include the Endicott batteries (c.1898 to 1905), mine defense system (c.1887 to 1921), the north dock (c.1858 to c.1907), and the overlook and slope above Battery Weed (c.1873 to c.1938).

Other portions of Fort Wadsworth have been either listed or nominated for listing in the National Register. In 1973, Fort Tompkins (Fort Tompkins

Quadrangle) was listed in the National Register for significance as an example of nineteenth-century historic military architecture. The Endicott-period batteries at Fort Wadsworth, including Batteries Bacon and Catlin, were determined eligible for listing in the National Register through the Determination of Eligibility process.[1] In 1997, the entire 247-acre Fort Wadsworth reservation, including Battery Weed, Fort Tompkins, and fifty-seven other resources, was nominated for listing in the National Register as an historic district for significance in areas of military, architecture, social history and engineering, with the period of significance of 1750 to 1924. Although signed by the New York State Historic Preservation Officer, the nomination was not accepted by the Keeper of the National Register, apparently due to disagreement over boundaries resulting from a loss of integrity due to extensive redevelopment by the Navy in the 1980s.[2]

RECOMMENDATIONS FOR AMENDING NATIONAL REGISTER DOCUMENTATION

A property is considered eligible for listing in the National Register of Historic Places if it possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

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

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

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

D. That have yielded, or may be likely to yield, information important in prehistory or history.

Battery Weed continues to meet National Register Criteria A and C in the areas of military history and architecture, as documented in the 1972 National Register nomination form. Based on the findings of this report, it is recommended that future documentation address the contribution of the landscape under Criteria A and C in the area of military history, architecture, and engineering. The boundary of property should be expanded to include the surrounding landscape including the adjoining batteries, slope, and overlook. It is recommended that the period of significance be expanded to 1945 to

encompass the full period of active military use at the Battery Weed headland. If a larger Fort Wadsworth historic district is nominated, the Battery Weed headland should be included within it to incorporate the full extent of the intact military landscape.

The following recommendations describe in more detail how the landscape contributes to the historic significance of the Battery Weed headland, in accordance with National Register Criteria. These recommendations address the criteria specifically related to the landscape and will require further elaboration and research in future National Register documentation for the property as a whole.[3] Such elaboration and research should include addressing the Battery Weed headland as part of a potential larger Fort Wadsworth district; defining significance in the areas of architecture, engineering, and archeology; and more fully documenting the historic military context of Battery Weed as part of the coastal defense system of New York Harbor.

National Register Criterion A

Area: Military History

As documented in the 1972 nomination form, Battery Weed derives significance under National Register Criterion A in the area of military history within the national context of coastal defense, and specifically for its central role in the defense of New York Harbor during the nineteenth and twentieth centuries. The Battery Weed headland, including the steep slope rising 120 feet above the Narrows that is one of the highest points along the shoreline of New York Harbor, provided an ideal strategic location for over two centuries of military development. Although its most active period was from the Civil War through World War I, the Battery Weed headland remained an active military site into World War II.

As early as the mid-eighteenth century, colonial government authorization was given for guns and signal beacons at the headland on the Narrows of New York Bay. Aside from the site, however, no resources remain from this early period of development through state ownership of the military reservation that ended in 1847. Throughout the period of significance, 1847 to 1945, the Battery Weed headland was a manned and active military site, with a landscape that was developed in accordance with the evolving technology of American coastal defense. Numerous features dating from 1847 to World War I continued to be used through World War II and remain in the landscape today, including earthworks, buildings and structures related to the Second, Third, and Endicott systems of coastal defense. From 1942 through 1945, the Battery Weed headland was the site of World War II home-front activities such as training, equipping, and decommissioning operations. After 1945, the Battery Weed headland was

largely abandoned, serving primarily as a storage area related to military activity elsewhere at Fort Wadsworth. The landscape was largely left to the elements after this point, resulting in collapse of several structures and growth of successional woods on formerly open slopes and batteries. Much of the overgrowth is reversible. The landscape overall retains integrity sufficient to illustrates is significance in military history.

National Register Criterion C

Architecture and Engineering

The current National Register listing documents the architectural significance of Battery Weed, with its granite block construction in three casemated tiers and former moat bounded by a granite seawall, as an excellent example of the Third System period (1847 to 1861) in coastal defense. The landscape of the Battery Weed headland is also significant under National Register Criterion C in the areas of Architecture and Engineering for illustrating the subsequent evolution in American coastal defense systems. Contributing features remaining today aside from the fort include Batteries Catlin and Bacon flanking the fort, parts of the mine defense system, and the north dock. These features represent components of the outwardly expanding New York Harbor system of defenses, and illustrate the progression over time of coastal military architecture and engineering technologies.

Following acquisition of the headland on the Narrows in 1794 and 1809, the State of New York began initial military development with the construction of Fort Richmond built of red sandstone according to the Second System specifications for coastal fortifications, accompanied by several ancillary structures at the water's edge. Federal purchase of the site in 1846 lead to the removal of the Second System fortress, and the construction of a new granite Third System fort, later named Battery Weed, in its place between 1847 and 1861. No above-ground features remain from before 1847. The new fort was conceived as a component of a larger system of defenses designed to secure the entrance to New York Harbor in conjunction with Fort La Fayette and Fort Hamilton located across the Narrows on Long Island (Brooklyn). Battery Weed, with its three tiers of granite casemates, was designed in a half-hexagon and carefully situated to complete range of fire objectives together with Forts LaFayette and Hamilton. Included in part of the new construction program was a stone dock extending into the Narrows to the north of Battery Weed built in c.1858.

The landscape of the Battery Weed headland was engineered with a system of secondary fortifications to protect and support the primary fort. Grading of the site by the Army for a series of earth and concrete ground batteries named the

South and North Cliff Batteries (named for their respective relationship to Battery Weed) began during the Civil War in the 1860s. These batteries were reconstructed in the Endicott period between 1898 and 1904 as Batteries Catlin and Bacon together with Turnbull and Barbour to the south, incorporating earlier features such as a c.1865 subsurface parados. Gun emplacements located on the batteries were updated throughout the historic period. In 1918, at the time of the World War I Armistice, Battery Bacon's two three-inch guns were dismounted and sent to Aberdeen Proving Ground in Maryland. Guns mounted on Battery Catlin were out of service by 1942.[4]

Construction of the mine defense system, a system of electrically-detonated floating mines that was one of the chief innovations of the Endicott period, began in 1887 with the addition of a mine casemate in Battery Weed and a mine railway leading to the north dock. Later expansions of the system included the Torpedo Storage Building built in c.1894, a second mine casemate on Battery Catlin built in c.1905, six cable tank buildings constructed between 1898 and 1905, additions and realignment of the mine railway up until 1921, and construction of a timber extension to the north dock along with a mine boathouse in c.1907.

Later military features dating from the World War I period and Great Depression are limited to a Coincidence Range-Finder (CRF) station constructed in c.1917 on the slope above Battery Bacon. Several small secondary structures reflected the continued military use of the headland during this time, including a concrete-block garage adjacent to the torpedo storage building constructed between 1924 and 1940, a concrete shed near the south end of Battery Catlin built in c.1940, and a concrete seawall north of the north dock built in c.1938. A stone wall along the overlook terrace along Hudson Road and specimen roadside sycamore trees were added around the same time.

During World War II, in addition to the presence of troops and more activity, there were some changes in the appearance of the landscape, although there was apparently no new construction at the Battery Weed headland. Vegetation management practices may have changed in response to a 1942 order for a new program of obscurement from aerial attack. Although some successional vegetation may have resulted from this directive on the batteries adjoining Battery Weed, most of successional woods and vines present today are the result of a lack of maintenance that occurred after World War II.

While the Battery Weed headland today retains many of its architectural and engineering features, most notably Battery Weed, the north dock, and Batteries Bacon and Catlin, the overall character of the landscape has changed

considerably due to the growth of successional woods and vines on formerly open, mown ground. These woods obscure the batteries and engineered slope, and cover some of the secondary buildings and structures. While this is a dramatic change to the historic landscape, it can be reversed. Significant changes have occurred to 1945 to a number of buildings and structures, including the Torpedo Storage Building and second mine casemate, which were ruined during the 1980s, probably by fire; the loss of eight support buildings in the mine defense system in c.1960; and the loss of the timber extension, mine boathouse, quartermaster's warehouse, and dock house on the north dock in c.1960. The mine railway system remains partially intact, although concealment by vegetation prevented an accurate evaluation of its integrity.

Period of Significance, 1847 to 1945

It is recommended that the period of significance for the Battery Weed headland, as reflected in its landscape resources, extend from the beginning of construction of the Third System fort in 1847 through the end of World War II in 1945. The period prior to 1847 has not been included because there are no physical resources from that time. The first fort was removed and the landscape was largely reformed. After 1945, there was no substantial new construction, and the site deteriorated from lack of active military use, although other areas of Fort Wadsworth remained under military jurisdiction until 1995.

Boundaries

These recommendations for updating the National Register documentation for Battery Weed are based on the project area for this report that includes the headland surrounding the fort (see Drawing 6). This area should be included within future documentation, as well as the historically related adjoining property along the shoreline and lower terrace following Battery Weed Road, including at a minimum all of Batteries Bacon and Catlin. The boundaries for Battery Weed should be folded into those of the proposed larger Fort Wadsworth historic district that would include Fort Tompkins. Further evaluation of historic integrity is needed to reach agreement with the Keeper of the National Register on the district boundaries as proposed in the 1997 draft nomination.

RECOMMENDATIONS FOR FURTHER RESEARCH

In addition to its rich military history, research for this report has also revealed an extensive history of the Battery Weed headland being used as an informal public park. In times of peace, visitors took in the panoramic view of New York Harbor from the top of the slope overlooking Battery Weed, as well as from the seawall and barbette tier of the fort itself. The elevated site—one of a highest

along the shoreline of New York Harbor—provided an exceptional panorama of the region. The view and public use of the site was reflected in many published materials, on souvenirs, and in guidebooks in the nineteenth and early twentieth centuries. Extant resources that may specifically reflect this recreational use of Battery Weed include the overlook terrace, overlook stone wall (c.1938), and slope walks (c.1892). It is recommended that further research be undertaken to assess whether the Battery Weed headland and a larger Fort Wadsworth district meet the National Register criteria for listing under the area of Entertainment/Recreation. Available documentation is not sufficient to assess whether the Battery Weed headland is significant under this context.

EVALUATION OF HISTORICAL INTEGRITY

Integrity is defined by the National Register as the ability of a property to convey its significance through its physical resources. Within the concept of integrity, the National Register recognizes seven aspects: location, design, setting, materials, workmanship, feeling and association. The following evaluation of the Battery Weed headland landscape, defined by the project boundaries of this report, is based upon a comparison of existing conditions with those of the proposed expanded period of significance extending from 1847 through 1945.

Location

Location is defined by the National Register as the place where the historic property was constructed, or the place where the historic event occurred. The Battery Weed headland, a part of the Fort Wadsworth reservation, retains all of the land included in its development in 1847 to 1945.
Evaluation: Retains integrity of location.

Design

Design is defined by the National Register as the combination of elements that create form, plan, space, structure, and style of a property. The Battery Weed headland retains the original fortification plan as developed during the Third System period of coastal fortifications between 1847 and 1885. The landscape also retains features illustrating design during the Endicott period from 1886 through the early twentieth century, including reconstructed batteries and remnants of a mine defense system. The additions made from World War I through World War II resulted in little change to the Third System and Endicott period design of the landscape. The water-filled moat was drained in c.1887 and filled in c.1904. Since there was little new construction after 1945, the design has been largely unaltered except through forces of deterioration and natural succession, the latter being mostly reversible. Significant changes to the overall design of the landscape include loss of mine defense buildings and portions of

the mine railway, loss of the timber extension and buildings on the north dock, and damage to the Torpedo Storage Building and second mine casemate. Although some historic fabric has been lost, the Battery Weed headland retains much of its historic design as a Third System and Endicott-period military installation.
Evaluation: Retains integrity of design.

Setting

Setting is the physical environment of a property and the general character of the place. The Battery Weed headland retains its overall setting defined by its waterside position along the Narrows below the 120-foot slope extending up to Fort Tompkins. The integrity of setting has been diminished since 1945 by the growth of successional woods on the slope and batteries, as well as the introduction of the Verrazano-Narrows Bridge, which although outside of the headland impacts the setting due to its enormous scale. The bridge also obscures the historic visual connection to Fort Hamilton on the opposite side of the Narrows. The historically open setting of the slope and batteries that provided panoramic views of New York Harbor from the overlook has been diminished by the growth of successional woods. (Figure 3.1) The larger setting of Fort Wadsworth outside of the project boundaries to the south and west on the approach to Battery Weed has been diminished with the addition of multi-family housing units and other structures built primarily during the 1980s with the Navy's redevelopment of Fort Wadsworth as the New York Naval Station. The loss of setting resulting from successional vegetation is reversible.
Evaluation: Diminished integrity of setting.

Materials

Materials are the physical elements that give form to the property. The Battery Weed headland retains historic built materials of granite, concrete, stone, earth, brick, asphalt, iron and steel in its buildings, walls, batteries, roadways, rail tracks and dock. Historic materials have been diminished due to the removal of sections of the mine railway in the resurfacing of Battery Weed Road, loss of wood-frame support buildings in the mine defense system, and loss of the roof and portions of the walls in the Torpedo Storage Building and second mine casemate. No buildings or structures have been covered or rebuilt in substitute materials. The palette and location of historic plant materials has been altered because of natural succession and spread of invasive vines that has led to loss of historically mown turf. This condition is reversible.
Evaluation: Retains integrity of materials.

Workmanship

Workmanship is the physical evidence of the crafts and methods of construction used during the specified historic period. The Battery Weed headland retains workmanship characteristic of the evolution of coastal defense systems and technologies during the nineteenth and twentieth centuries. This is evident in the fine masonry of Battery Weed and north dock, and seawall, the more rustic construction of the overlook stone wall, and the early techniques of poured concrete found in Endicott-period gun emplacements and mine casemate additions to Battery Weed. Although not historically prominent, the workmanship of the macadam roads has largely been lost due to contemporary reconstruction and repaving.

Evaluation: Retains integrity of workmanship.

Feeling

Feeling is the expression of the aesthetic or historic sense of a particular time resulting from the presence of physical features that, taken together, convey a property's historic character. The Battery Weed headland retains the commanding presence along the Narrows that characterized it historically. However, the landscape surrounding the fort has lost its feeling as a highly maintained military property. There is a loss of feeling in the sense of abandonment that exists on the site today as a result of limited public access, fenced off areas of the fort grounds, the deterioration of several abandoned buildings, and most notably, the growth of successional woods and vines on historically mown and open slopes and batteries. This latter condition is reversible.

Evaluation: Diminished integrity of feeling.

Association

Association is the direct link between a property and an important historic event or person. The historic association of the Battery Weed headland with the U. S. Army no longer remains, the property continues to reflect this association through its physical features remaining from the Mexican-American War through World War I. These features include the fort, flanking earthen batteries, north dock, and the mine defense system buildings and structures. Battery Weed headland remains under federal administration as it has since 1847.

Evaluation: Retains integrity of association.

Summary Evaluation of Integrity

Overall, the landscape of the Battery Weed headland retains historic integrity and still clearly conveys its historic significance through existing resources. Integrity of setting and feeling has been diminished, but is in part reversible.

LANDSCAPE EVALUATION (DRAWING 6)

The following evaluation of the Battery Weed headland is organized into ten sections defined by landscape characteristic: Natural Systems and Features, Spatial Organization, Land Use, Circulation, Topography, Vegetation, Constructed Water Features, Buildings and Structures, Views and Vistas, Small Scale Features, and Archeological Features. Each section begins with a brief narrative of the overall landscape characteristic followed by evaluation of associated landscape features. Each feature evaluation is organized into three parts: first, a narrative of the historic condition of the feature during the proposed expanded period of significance (1847-1945); the existing condition of the feature including a summary of changes since the end of the historic period; and third, an evaluation of the feature's historic character based on a comparison of historic and existing conditions.[5] Features are evaluated as contributing, non-contributing, or unevaluated if there is insufficient information, and are related to their association with the periods of development identified in the site history. These include the Third System period (1847-1886), the Endicott period (1887-c.1916), and period spanning World Wars I & II (1917-1945) that comprise the proposed expanded period of significance (1847-1945).

Each feature is keyed to the analysis & evaluation plan (Drawing 6). Character-defining features that have been lost since the end of the historic period are not individually evaluated but are rather described in the characteristic narrative and shown on Drawing 6. All documentation is from the site history and existing conditions chapters unless otherwise noted.

NATURAL SYSTEMS AND FEATURES

This characteristic is comprised of the natural aspects that influence the development of a landscape. The Battery Weed headland includes natural flora, landforms, and hydrology. Natural flora (successional woods) is considered a natural system while managed vegetation (specimen trees, hedgerows, lawn, etc.) is not. Since the historic period, mown grasses have been succeeded by a mix of hardwoods and shrubs, and an invasive wild grape species, porcelain berry (*Ampelopsis brevipedunculata*). Porcelain berry has its origins in northeast Asia and was originally cultivated in the United States as a bedding and landscape plant in c.1870. Natural succession since the historic period has led to an increased area of wooded and scrub land in large areas of the Battery Weed headland.

Another natural characteristic is the landform, not including constructed topography (drainage ditches, earthworks, etc.). Battery Weed was developed on this site specifically because of the steep bluff rising approximately 125 feet above the Narrows of New York Bay, and the relatively level area at the water's edge of a deep-water channel. At the beginning of the historic period, the bluff above Battery Weed featured a steep and irregular form with rock outcroppings and eroded ravines. During the historic period, the bluff was graded to an even and consistent slope and planted with grasses (see topography characteristic).

The hydrology and ecology of the site includes the waterfront and rocky beach on the Narrows, a part of the Hudson-Raritan Estuary. The Battery Weed headland forms the southern edge of a protected open water cove in an estuarine system influenced by both fresh and salt water and strong tidal currents. Also present in some form during the historic period was a fresh water spring located below the bluff that emerged from the ground approximately 120 feet from the high water line near the southwest bastion of Battery Weed. Prior to c.1860, this spring was probably minimally managed as a water resource. A moat and granite seawall, completed in 1871, surrounded the fort and incorporated the spring in its design to fill and keep the structure supplied with water. The moat has since been filled and it is unknown if the spring remains intact underground. The spring no longer forms a visible natural feature of the landscape.

NS-1. Successional Woods and Vines

Historic Condition

During the construction of Battery Weed from 1847 through the completion of the seawall surrounding the fort in 1871, the broad sandy beach was probably interspersed with coastal grasses including saltwater-loving species such as salt cordgrass (*Spartina alternifolia)*, and yellow saltgrass (*Spartina patens)*. A mix of grasses, wildflowers, and successional tree species, such as cedar, oak and pine, existed on the steep, irregular bluff above the site of the fort. The natural flora was likely removed when the site was graded in c.1873 and replaced with managed grasses for a period of many years until c.1940. During World War II, some of the natural flora may have become reestablished on and around the batteries through the direction of the Coast Artillery command in an effort to conceal the earthworks from aerial attack.

Existing Condition

Since the end of the historic period in 1945, natural succession has reclaimed most of the mown grass on the slope and batteries. These areas are now covered in a mix of native and non-native species including Norway maple (*Acer platanoides)*, tree of heaven (*Ailanthus altissima)*, black cherry (*Prunus serotina)*, and a wild grape or porcelain berry (*Ampelopsis brevipedunculata)* (see Figures

3.2, 3.3). This vine is climbing many of the trees in the successional woods and covering much of the slope and the earthworks of the batteries.

Evaluation: Non-contributing

The successional woods and vines that cover the slope and batteries do not contribute to the historic character of the landscape because they were not present during the historic period. The successional woods and vines detract from the historically well-maintained and open spatial character of the landscape, and obstruct views from the overlook.

SPATIAL ORGANIZATION

This characteristic concerns the arrangement of elements creating the ground, vertical, and overhead planes that define and create spaces. During the historic period, the Battery Weed headland was defined spatially by the steep slope to the west, raised earthen batteries to the south and north, and the open waters of the Narrows to the east. Since 1945, the spatial organization has been altered mainly through natural succession, and the removal of some of the mine complex buildings and structures. Despite these changes, the landscape retains the overall organization that has defined it since its development between 1847 and 1894, although it has become much more enclosed due to the growth of successional woods.

SO-1. Parade Ground

Historic Condition

Early in 1847, the parade ground began to take shape with the start of construction of the granite fort that would later be known as Battery Weed. When the fort was completed in 1864, the space at its center, the parade ground, was a nearly level lawn area, open to the sky above with a passage to the outside in the center of the west curtain wall, and a cistern set below grade adjacent to each of the eastern stair towers. From the parade ground, the only opening to the exterior was a narrow gated passage through the guardhouse. During the historic period, the parade ground was probably used in part for storage of munitions as well as for military exercises centered on a flagpole.

Existing Condition

Little change has occurred in the parade ground since the end of the historic period in 1945 aside from its use for storage and military exercises. Measuring approximately 260 feet by 140 feet, the parade ground is enclosed and framed to the east by three sides of a gently rounded half-hexagon of arched granite casemates in three tiers at a height of approximately thirty-six feet with two four-story stair towers and a delicate iron railing between the towers along the top tier. (Figure 3.4) A lower, straight granite wall encloses the parade ground on the west side and incorporates a two-story guardhouse with iron entry gate and two four-

story magazines with stair towers at the northwest and south corners. The parade ground is maintained entirely as mown lawn except for two concrete munitions pads.

Evaluation: Contributing

The parade ground, completed between 1847 and 1864, contributes to the historic character of the landscape as a defining spatial feature of the Third System period. The spatial character of the parade ground as originally designed remains intact.

SO-2. Moat Space

Historic Condition

Construction of a four-sided, seven-foot deep moat between 1851 and 1871 established a space surrounding Battery Weed defined by the high granite walls of the fort and the low granite seawall, with a granite or concrete retaining wall on the west or landward side. The water-filled moat was intended to provide strategic protection, but also served as a waterfront walkway or promenade. In c.1887, water was drained from the moat, except at the southwest corner where a reservoir was established. In c.1904, the landward (west) side of the moat was filled to ground level for construction of mine defense support buildings, which obliterated this part of the moat space. On the seaward sides, the moat space was altered around the same time through partial filling to a depth of about four feet.

Existing Condition

Since the end of the historic period in 1945, the seaward sides of the moat were filled to a level just below the capstone, which altered the enclosure of the moat space. (Figure 3.5) The filled moat surrounds Battery Weed at a distance of approximately thirty-three feet from the outer granite walls of the fort. Grasses, weeds and reeds occur in the fill, which has a top dressing of gravel to protect against outwash. The space of the filled-in moat to the south, east, and northwest defines a bay-front terrace along the seaward sides. Lawn extends across the grounds abutting the west wall of Battery Weed over the filled landward side of the moat. The mine defense components were removed at some point after 1945, leaving concrete footing on the filled moat.

Evaluation: Contributing

Although partially filled in between c.1887 and c.1904 and then completely filled after 1945, the moat remains a space around the seaward perimeter of Battery Weed that contributes to the historic character of the landscape. This space recalls the moat that was a distinctive part of the Third System design of Battery Weed.

SO-3. Overlook Space

Historic Condition

At the beginning of the historic period in 1847, the overlook was a grassy knoll at the crest of a weathered and eroding, partially treed-covered bluff 125 feet above the Narrows and the construction site of Battery Weed. The space was defined by a large rock outcropping to the south, a pasture fence, dirt road, and the round stone bastions of the original Fort Tompkins to the west. A small signal house and semaphore signal was located at the crest of the bluff above the bay. In 1859 with construction of the new Fort Tompkins, plans were developed for constructing a raised earthen berm with gun emplacements along the top of the bluff. This earthwork was built by c.1873, probably at the time the slope was graded. Between c.1897 and 1908, the earthwork was removed and the top of the bluff was graded into a level terrace bordered by Hudson Road. In c.1938, a stone wall was built along the crest of the slope, apparently to define the space for informal use by the public for its scenic views.

Existing Condition

After 1945, the overlook space became enclosed by the growth of successional woods on the slope and by construction of a wood-frame building at the widest part of the overlook in c.1946. Portions of the slope and the wood-frame building were removed and space reopened as part of the park's redesign of the overlook terrace in c.1995. The redesign included a visitor gathering area at the widest part of the overlook space at the head of Tompkins Road, defined by a flagpole, low concrete wall, and shrubs, surrounded by an open expanse of concrete and turf panels. (Figure 3.6)

Evaluation: Contributing

The overlook space, open to distant views of Manhattan and New York Harbor Bay and bounded by Hudson Road to the west, contributes to the historic character of the landscape. The spatial character of the overlook as developed for recreational purposes at the end of the historic period remains largely intact. The park improvements added in c.1995 do not detract from the overall historic character of this space.

SO-4. Slope Space

Historic Condition

Prior to c.1873, the 125-foot high slope above Battery Weed was mostly a steep and craggy, eroded bluff scattered groves of trees including cedar and pine. Portions of the slope were cleared from grading completed off the southwest bastion of the fort in c.1847, and most likely adjoining the North and South Cliff Batteries during their construction in the 1860s. In c.1873 as work was nearing completion of Fort Tompkins, the Army graded the remainder of the bluff to an even grade of approximately fifty degrees, removing all remaining trees and creating one large open space maintained in mown grasses.

Existing Condition

Since the end of the historic period in 1945, the slope space above Battery Weed, bordered by the overlook stone wall at the top and Battery Weed Road at the base with a base plane at an angle of approximately fifty degrees, became enclosed in dense successional woods. A large area was cleared in c.1995 to reestablish the view from the overlook, but this area is today covered by a blanket of invasive porcelain berry vine. (Figure 3.7)

Evaluation: Contributing

The slope space contributes to the historic character of the landscape as a spatial feature from the Third System period. Although the presence of successional woods and invasive vines has impacted some of the historic open spatial character of the space, this condition is reversible.

LAND USE

This characteristic describes uses that affect the physical form of the landscape. During the historic period, the Battery Weed headland was characterized primarily by military use and secondly by informal public recreation. Although Fort Wadsworth remained under United States military jurisdiction and was part of an active military base until 1994, the Battery Weed landscape largely fell out of active military use after 1945. The site, and in particular the overlook at the top of the slope with its panoramic views, was also used during the historic period as a quasi- public park and promenade outside of times of war, especially after completion of major construction in the 1870s. Recreational uses also diminished after 1945, as reflected in the loss of the panoramic views from the overlook due to the natural succession. In 1995, recreational use became formalized with the incorporation of Fort Wadsworth into Gateway National Recreation Area.

CIRCULATION

This characteristic describes systems of movement through the landscape. Circulation through the Battery Weed headland during the historic period included roads, walks, and rail lines. Public use of the headland for taking in the views created patterns of circulation along the overlook and along the moat surrounding Battery Weed. After World War II, some of the circulation features were lost as military and public recreational uses disappeared. Circulation at the overlook has been returned, but has been lost on the walks extending down the slope and along the moat, where access is restricted by chain-link fencing.

C-1. Battery Weed Road

Historic Condition

During the historic period, Battery Weed Road, built in c.1847 roughly following an earlier farm road, entered the site from the south along the edge of the cliff, at the east end of Richmond Road, and turned to the northwest near the entrance of the fort ascending the slope above the north dock and connecting with Mont Sec Avenue. The road was realigned with the construction of the North and South Cliff Batteries in the 1860s. In c.1883 the road surface was first dressed with macadam and gravel. When the Torpedo Storage Building was constructed in c.1894, Battery Weed Road was realigned and widened at the north and south entrances of the new building. The steel rails of the mine railway were set into the road surface along with construction of the Torpedo Storage Building.

Existing Condition

In c.1995, the south part of Battery Weed Road, which extends up a steep grade adjacent to Battery Bacon, was reconstructed with concrete gutter-curbs, and the area in front of the entrance to Battery Weed was widened. The north leg of Battery Weed Road is surfaced in asphalt without curbs and measures approximately twelve feet wide and widens around the Torpedo Storage Building. (Figure 3.8) The south curbed leg of the road measures approximately twenty feet wide. The road is surfaced in concrete where it is crossed by the mine railway. The wide area between Battery Weed and the Torpedo Storage Building is occasionally used for short-term visitor parking.

Evaluation: Contributing

Battery Weed Road, constructed prior to 1847 and realigned several times through the 1890s, contributes to the historic character of the landscape as a defining circulation feature of the Third System period. Changes are limited to the addition of concrete curb-gutters on the south leg and minor widening and repaving.

C-2. Hudson Road

Historic Condition

Hudson Road originated prior to 1847 as a dirt road along the crest of the bluff and was realigned several times into the early twentieth century. In c.1873, it was lined by an earthwork (berm) along the crest of the bluff. Hudson Road was first given a macadam (asphalt) surface in c.1880. It was widened and realigned with removal of the earthwork in c.1908, and again with the addition of the overlook stone wall and roadside sycamore trees in c.1938.

Existing Condition

Between 1945 and 1961, Hudson Road was widened at its mid-section and at the north end to incorporate perpendicular parking spaces on the east side of the road. The last realignment of the road took place in c.1995 with redesign of the overlook terrace. Hudson Road has an asphalt surface and is approximately twenty feet wide and 2,000 feet long running along the overlook terrace immediately to the east of Fort Tompkins. The road has concrete curbs with integral gutters. It connects to Battery Weed Road completing a loop that circumnavigates the slope between Battery Weed and Fort Tompkins. (Figure 3.9)

Evaluation: Contributing

Hudson Road, probably first constructed prior to 1847 and realigned through the early twentieth century, contributes to the historic character of the landscape as a defining circulation feature of the Third System period. The existing surface, curbs, and alignment at Tompkins Road date to c.1995 reconstruction.

C-3. Overlook Promenade

Historic Condition

The overlook promenade was an informal circulation route along the crest of the bluff above Battery Weed prior to 1873. Following the grading of the bluff in c.1873, circulation probably followed an earthwork (berm) that extended along the crest of the bluff and expanded into a terrace measuring approximately 250 feet long by thirty feet wide. In c.1892, the overlook terrace and walk were linked to new walks that crossed the slope diagonally above Battery Weed, connecting the overlook terrace and walk with Battery Weed Road below. In c.1908, the earthwork was removed, allowing for the widening of the circulation route. A stone wall along the top edge of the slope constructed in c.1938 formalized the circulation route and also blocked access to the slope walks.

Existing Condition

In 1995, circulation along the overlook promenade was formalized with the addition of concrete sidewalks along the stone wall and a paved terrace area at the intersection of Tompkins Road. (Figure 3.10, see also Figure 3.9) The walks extend approximately seventy feet to the south of the terrace and 600 feet to the north along Hudson Road.

Evaluation: Contributing

The overlook promenade, a circulation route used since the early nineteenth century to take in the panoramic view, is a defining circulation feature of the landscape illustrating the historic use of the military grounds for recreation. Although the current concrete walks and terrace date to c.1995, they do not detract from the promenade's historic character as a circulation feature.

C-4. Slope Walks

Historic Condition

In c.1892 around the time the Torpedo Storage Building was being constructed, the Army constructed three walks crossing the steep slope down to Battery Weed Road. One approximately 660 foot-long walk extended from the northwest to the southeast crossing the other two walks at a switchback about halfway down. The other two walks extended from the northwest along Battery Weed Road to the southeast, connected in an acute angle and joined the path at the crest of the slope near the overlook. The walks were approximately six feet wide with concrete edging. The historic surface is unknown.

Existing Condition

Since the end of the historic period in 1945, the slope walks have been obscured with successional vegetation and invasive vines, and impacted by erosion. It is unknown whether they remain substantially intact. A part of the walk is visible from Battery Weed Road north of the Torpedo Storage Building. Approximately 120 feet of concrete edging remains along this walk. (Figure 3.11) Further investigation, including possibly archeological testing, is necessary to determine historic width, surface, and edging of the walks.

Evaluation: Unevaluated

Available documentation is insufficient to evaluate the historic character of the slope walks. If the walks remain intact, they would be a contributing feature of the landscape that may reflect formalized recreational use of the headland in the late nineteenth century.

C-5. Waterfront Promenade

Historic Condition

The waterfront promenade around Battery Weed, which probably came into use with completion of the cofferdam in c.1850 and then the seawall in c.1871, was used by visitors outside times of war and major construction for strolling and taking in the view of the harbor. Visitors probably also walked along the moat once it was partially filled in c.1904.

Existing Condition

Since the end of the historic period in 1945, use of the waterfront promenade declined as conditions became hazardous and as public use of the overlook decreased due to growth of woods and use restrictions. The promenade follows

the top of the granite seawall and the adjoining filled moat. (Figure 3.12) Access to the promenade is presently blocked by plastic fencing at the southwest bastion, and a six-foot high chain-link fence extending from the northwest bastion.

Evaluation: Contributing

The waterfront promenade, in use by c.1871 along the seawall but now inactive, contributes to the historic character of the landscape as a circulation feature that illustrates informal use of the military fortification for recreation. Although access is prohibited, the historic circulation route remains intact.

C-6. Mine Railway

Historic Condition

In c.1887, the first sections of mine railway were extended from mine storage area in Battery Weed to the north dock where thee were deployed by boat. In 1896, the railway was extended to the new Torpedo Storage Building, where three sets of tracks entered the south end for deployment to the dock, and a return set entered the upper floor at the rear of the building. The rails were extended several times to reach mine support buildings built between 1904 and 1905, and then in 1907 to access a timber extension and mine boathouse at the north dock. In 1910, the rails were realigned to reduce the sharp curves at the south end of the Torpedo Storage Building. In 1921, final modifications to the railway further adjusted the alignment.

Existing Condition

Since the end of the historic period in 1945, sections of the mine railway have been lost at the north dock, parade grounds, and along the west side of Battery Weed. Sections remain at Battery Weed Road at the north and south ends of the Torpedo Storage Building, and extending toward Battery Catlin and the north stone dock. The rails are generally set into concrete pavement. (Figure 3.13) In Battery Weed Road, the concrete pavement has been rebuilt and the rails set in a polymer caulk. Where the rails are covered by dense vegetation at the south end of Battery Catlin, it is unknown whether they still exist or have been removed.

Evaluation: Contributing

The mine railway, initially built in c.1896 and realigned in 1910 and 1921, contributes to the historic character of the landscape as a defining circulation feature from the Endicott period. The loss and concealment of sections of the railway detracts from the historic character of the landscape.

C-7. Dock Road

Historic Condition

The dock road was probably established along with the construction of ht enorth dock in c.1858. In c.1887, the road was improved and possibly realigned as part of the development of the mine railway. A spur off the road was constructed to the north along Battery Catlin at some time after 1913. It is not known where this

spur ended. The dock road was paved in asphalt at an undetermined date during the historic period.

Existing Condition

Since the end of the historic period in 1945, the east end of the dock road has washed out and become covered in weeds and scrub. The remainder of the road is asphalt with worn and indefinite edges. A chain link fence cuts off access to the dock road at the north end of Battery Weed. There is no trace of the spur to the north along Battery Catlin.

Evaluation: Contributing

The dock road, initially built along with the dock in c.1858 and improved in c. 1887, contributes to the historic character of the landscape as a key circulation feature that illustrates the integration of the dock with the fortress and mine defense system during the Third System and Endicott periods. The loss of surface at its east end near the dock detracts from the historic character of the road.

TOPOGRAPHY

This characteristic is defined as the three-dimensional configuration of the landscape.[6] The topography of Battery Weed was historically characterized by a dominance of engineered slopes with even grades on earthworks and slopes. In the initial development of the landscape, the natural contours of the land were manipulated to provide more even, level surfaces for circulation of laborers, carts and materials involved in the construction of the fort. In c.1862, construction of large earthworks for the South Cliff and North Cliff Batteries began on the level waterfront area and continued with reconfigurations of the topography through c.1905 with the completion of Battery Bacon and Battery Catlin, together with Batteries Turnbull and Barbour to the south outside of the CLR project area. The final major reconfiguration if the topography came with the reconstruction of Fort Tompkins between 1859 and 1876, which impacted the adjoining engineered slope extending down to Battery Weed.

T-1. Engineered Slope

Historic Condition

In c.1848 with the start of construction on Battery Weed, the portion of the natural bluff off the southwest bastion was graded into an even slope, retained by a wall at its base along Battery Weed Road. Additional portions of the bluff were graded in the 1860s as part of the construction of the North and South Cliff Batteries. In c.1873, as part of the completion of Fort Tompkins, the remaining sections of the natural bluff were graded to a nearly even slope of approximately fifty percent from its crest to its base. When the grading was complete, approximately two feet of its earlier 125-foot elevation had been lost and the slope crested at 123 feet at the overlook terrace. The slope was maintained in

mown turf. In c.1892, three walks were graded into the slope, supported by concrete edging on the downhill side.

Existing Condition

Since the end of the historic period in 1945, some soil erosion has occurred in the slope above the north end of the Torpedo Storage Building where a gully has formed as a result of water runoff. (Figure 3.14) The grade of the slope has most likely become more irregular overall due to erosion and growth of vegetation.

Evaluation: Contributing

The engineered slope, constructed between c.1847 and c.1873, contributes to the historic character of the landscape as a defining topographic feature of the Third System period. The eroded areas and cover of successional woods and invasive vines detracts from its historic character.

T-2. Battery Catlin Earthwork (South End)

Historic Condition

Initially constructed in c.1863 to 1867 as the North Cliff Battery, the large earthwork was reconstructed in c.1902 to 1904 as the approximately 140 foot wide and 720 foot long Battery Catlin. The earthwork was redesigned to accommodate new Endicott-period technology in coastal defense artillery, but retained some of the existing features including a subsurface parados. Battery Catlin in its entirety was built as a series of earth mounds rising approximately forty-five feet above the level of the shoreline. These earth mounds incorporated several poured concrete structural walls, gun emplacements, steps, access paths, and with earth-covered concrete arches. The second mine casemate was built at the south end of the battery in c.1905.

Existing Condition

With the exception of some erosion and deterioration of structural elements and a dense covering of successional woods, little change has occurred to the Battery Catlin earthwork since the end of the historic period in 1945. The southern end of Battery Catlin consists of a large earth mound measuring approximately 320 feet by 140 feet rising to a height of forty-five feet above the level of the dock road. (Figure 3.15)

Evaluation: Contributing

Battery Catlin (south end) contributes to the historic character of the landscape as a defining topographic feature of the Endicott period. Aside from minor erosion, the battery earthwork remains in its historic configuration. The northern part of Battery Catlin has not been evaluated because it is outside of the CLR project area.

T-3. Battery Bacon Earthwork (North End)

Historic Condition

Battery Bacon was initially constructed in c.1862 to 1866 as the South Cliff Battery and reconstructed in c.1898 as Batteries Bacon, Turnbull, and Barbour. Redesigned to accommodate new Endicott period technology in coastal defense artillery, the earthwork of Battery Bacon rose approximately fifty feet above the water level of the Narrows just above the shoreline and included poured concrete structural walls, steps, and gun emplacements (evaluated under BS-9).

Existing Condition

With the exception of the overgrowth of vegetation on the battery, little change has occurred to the Battery Bacon earthwork since the end of the historic period in 1945. The northern end of Battery Bacon consists of a large earthen mound measuring approximately 200 feet by 80 feet, rising to an elevation of fifty feet above the water level of the Narrows. (Figure 3.16) The only section that has been cleared of heavy vegetation is the north gun emplacement.

Evaluation: Contributing

The Battery Bacon earthwork (north end) contributes to the historic character of the landscape as a defining feature of the Endicott period. Aside from the overgrowth of vegetation, the battery remains in its historic configuration. The south end of Battery Bacon and its adjoining batteries to the south have not been evaluated because they are outside of the CLR project area.

CONSTRUCTED WATER FEATURES

This characteristic is defined as the built features of a landscape designed with water as the dominant visual element.[7] The only constructed water feature in the Battery Weed headland was a moat designed by Army Chief Engineer General Joseph G. Totten in c.1850 to be filled by a combination of water sources including a spring located near the fort, and tidal waters of New York Bay. Totten designed the moat to surround the fort providing highly controlled access and thus protection from landward attack. Construction of the moat was undertaken in stages and included the temporary construction of a timber and stone cofferdam below the high tide line that allowed the permanent construction of the granite seawall that formed the outer edge of the moat. The moat surrounding Battery Weed, approximately thirty feet wide and seven feet deep, was finished with the completion of the seawall in c.1871. The moat was dewatered in c.1887, and partially filled with earth and rubble in c.1904 to a depth of approximately four feet below the capstone. At some point after 1945, the moat was completely filled to within a foot of the capstone (see SO-2 for evaluation of the moat space).

VEGETATION

Planted vegetation on the site prior to c.1930 was limited primarily to perennial grasses were established as lawn and mown turf covering the grounds, slope and batteries (see NS-1 for successional woods and vines).[8] In the 1930s, roadside specimen trees were added to the landscape, the only known instance of ornamental plantings in the headland during the historic period. Since 1945, much of the lawn and mown grasses have been lost with the cessation of maintenance that led to the growth of invasive vines and successional woods.

V-1. Parade Ground Lawn

Historic Condition

The Army established a lawn on the parade ground within the walls of Battery Weed during the initial construction period in c.1847 to 1864 and maintained it throughout the historic period.

Existing Condition

The parade ground lawn was not maintained after 1945 and by the 1960s, it was characterized by volunteer trees, ruts, and piles of earth. The lawn was restored in c.1995 as a mix of perennial grasses mown short, less than four inches. (Figure 3.17) There are no other plantings on the parade ground.

Evaluation: Contributing

The parade ground lawn remains in its historic condition and contributes to the historic character of the landscape as a defining vegetation feature of the Third System period.

V-2. Slope & Fortress Grounds Turf

Historic Condition

The open ground around Battery Weed, including the slope and overlook, Batteries Catlin and Bacon, and the level areas along the roads and adjacent to the fort, were planted with grasses as the land was graded in stages from c.1847 through c.1904. Although the topography of the slope and batteries was adjusted to accommodate new gun technologies, the vegetation was maintained as mown grasses throughout the historic period, with some shrub growth along the shoreline near the batteries by the 1920s. The turf on the batteries may have been let go during World War II as part of an order for aerial concealment, but this vegetation would have been low.

Existing Condition

Since the end of the historic period in 1945, most of the slope & fortress grounds turf (approximately eighty percent) has been lost, except for the area bordering Battery Weed and Battery Weed Road. Most of the former areas of mown turf on the slope and batteries has been lost to successional woods and a blanket of invasive porcelain berry (see also NS-1). (Figure 3.18)

Evaluation: Contributing

The remaining areas of turf on the slope and fortress grounds contribute to the historic character of the landscape as a remnant of the once highly-maintained military grounds that existed prior to 1945. While the loss of turf detracts from the historic character of the landscape, the condition is reversible.

V-3. Roadside Specimen Trees

Historic Condition

A row of sycamore trees was planted along Battery Weed Road across from the Torpedo Storage Building and along Hudson Road near the overlook in c.1938. The addition of these trees was an aesthetic enhancement that probably was made in conjunction with the formalization of the overlook that included construction of a stone wall. The plantings were probably made at the same time as the existing sycamores along nearby Mount Sec Avenue.

Existing Condition

Since the end of the historic period, most of the roadside specimen trees have been lost. Three sycamore (*Platanus occidentalis*) trees remain. One is located on the east side of Hudson Road across from Fort Tompkins, at a diameter of approximately fourteen inches. (Figure 3.19) This sycamore may be a replacement planting or a remnant of the row of trees that existed during the historic period. Two mature sycamore trees are located along the east side of Battery Weed Road across from the Torpedo Storage Building. (Figure 3.20) One is approximately forty-two inches in diameter, and the other is of approximately thirty-six inches.

Evaluation: Contributing

The three roadside specimen trees along the east side of Battery Weed Road and at the overlook along Hudson Road contribute to the historic character of the landscape as vegetation features that may reflect the military's aesthetic enhancement of the landscape during the early twentieth century.

BUILDINGS AND STRUCTURES

Most of the existing buildings and structures in the Battery Weed headland were developed as a part of an evolving complex of coastal fortifications over a period of approximately seventy-four years from 1847 to c.1921. Only one structure and two ancillary buildings were added after this time. There were a number of buildings in the landscape prior to 1847, notably the Second System Fort Richmond and a row of support buildings to its west, but all were removed during the historic period. Battery Weed remains the dominant and most significant building in the landscape. A number of ancillary buildings and structures associated with the mine defense system, constructed between 1887 and 1921, have been lost since 1945. These include a complex of buildings and a

timber extension on the north dock, which were removed in c.1960 during construction of Verrazano-Narrows Bridge and probably as a result of Hurricane Donna. At the same time, the wood-frame support buildings for the mine defense system located on land were also removed. These included cable tank buildings 1 (c.1898), 2 (c.1899), 3 (c.1904), and 4, 5 & 6 (c.1905); a testing room (c.1904), and a torpedo loading room (c.1904) located along the west wall of Battery Weed and parallel to the Torpedo Storage Building. All other secondary buildings and structures remain, although many are in poor or ruined condition.

BS-1. Battery Weed (Buildings 150, 151)

Historic Condition

Battery Weed was designed in c.1846 under the direction of Army Chief Engineer General Joseph G. Totten according to the Army's specifications for Third System coastal fortifications. Constructed began in 1847 and was complete by 1864. The granite fort, extending into the waters of the Narrows, was built in a half-hexagon plan with three tiers of casemates surrounding a central parade ground, with a perimeter moat and seawall. The top or barbette tier featured a turf-covered earthen surface and parapet with gun emplacements. Incorporated into the west curtain wall of the fort were the main entrance (via a drawbridge prior to c.1904), guardhouse, and magazine towers. In c.1887, two concrete sections were added to the northwest bastion to provide protection for the first mine casemate located within the fort. In 1903, a lighthouse was added to the barbette tier at the northeast bastion. Most of the guns had been removed from the fort by this time.

Existing Condition

Since the end of the historic period in 1945, the only substantial change to Battery Weed has been the loss of the roofs of the magazine towers, which occurred prior to 1958. Battery Weed is a massive granite structure measuring 286 feet along each channel-front wall, and 450 feet along the west scarp wall. (Figure 3.21) The fort features three casemated tiers, rising one on top of the other, and an open earth-covered barbette tier with a breast height parapet wall along the channel side that rises sixty-three feet above the Narrows. Thirty-one gun emplacements are located on the barbette tier, each a circular raised brick and mortar pedestal with iron pintles that held rotating canon. The area surrounding the gun emplacements and the area on top of the parapet are planted with mown turf.

Evaluation: Contributing

Battery Weed contributes to the historic character of the landscape as the defining building of the Third System period. The concrete additions to the northwest bastion reflect Endicott-period modifications, while the lighthouse reflects the historic military obsolescence of the fort and its continued use an aid

to navigation. Aside from the loss of the magazine tower roofs, Battery Weed remains largely unchanged since the end of the historic period.

BS-2. Granite Seawall

Historic Condition

Construction of the granite seawall, completed in c.1871, began with the construction of a temporary timber and stone cofferdam in c.1851. The seawall consisted of two different sections. Around the channel sides of the fort, the seawall was a freestanding structure forming the outside wall of the moat. It continued to form the inland wall of the moat, which was buried beneath fill in c.1904. North of the fort, the seawall was a retaining structure that curved outward to form a bulkhead for the north dock.

Existing Condition

Since the end of the historic period in 1945, two sections of the retaining wall section of the seawall have collapsed, one between Battery Weed and the north dock, and the other north of the dock. A portion of the moat seawall along the east side of Battery Weed was rebuilt in 2006. The granite seawall extends for approximately 1,000 feet from the south end of Battery Weed to a point north of the north dock. The moat section of the seawall extends along the entire outer channel-facing sides of Battery Weed and terminates at the rocky beach near Battery Bacon on the south. (Figure 3.22) The retaining wall section of the seawall extends from Battery Weed north beyond the north dock. (Figure 3.23) Both sections are built of coursed quarry-faced granite ashlar.

Evaluation: Contributing

The granite seawall along Battery Weed contributes to the historic character of the landscape as a defining structural feature of the Third System period. Other than storm damage to some sections since the historic period, the character of the seawall remains intact. The fill behind the moat section of the seawall is part of the historic condition.

BS-3. Torpedo Storage Building (Building 147)

Historic Condition

The first freestanding structure to be constructed as a part of the mine defense complex was the Torpedo Storage Building (#147) in c.1894. Sited at the base of the slope on the west side of Battery Weed Road, the two-story stone and brick structure featured engineered iron roof trusses and windows with steel shutters. Used for the storage, processing, and delivery of underwater mines (torpedoes) and cables, the building contained three mine railway entry doors on the south end at the first story level, and one on the north end at the second story level.

Existing Condition

After the end of the historic period in 1945, the Torpedo Storage Building was used only for storage. In the 1980s, it suffered extensive fire damage, which

resulted in loss of roof trusses and brick walls at the south end. As a result of this fire, the roof skin was removed and the building left as a shell. Sections of wood structural timbers and window sash remain. Overall, the brick and stone building with a steel-truss gable roof measures approximately 230 feet by 40 feet. (Figure 3.24) Planning is underway to rehabilitate this building for visitor use.

Evaluation: Contributing

The Torpedo Storage Building, constructed in c.1894, contributes to the historic character of the landscape as a defining feature of the Endicott period. Although in poor condition and missing key elements, the building nonetheless illustrates the later military use of the landscape and the function of the mine defense system.

BS-4. Concrete Block Garage (Building 148)

Historic Condition

Sometime between 1924 and 1940, a small, concrete-block building with a gable roof was erected at the base of the slope to the south of the Torpedo Storage Building. The building may have been used for storage or housing a vehicle.

Existing Condition

The concrete block garage at the base of the slope to the south of the Torpedo Storage Building measures approximately nine feet by eleven feet. (Figure 3.25) The building is constructed of rock-faced concrete block and has a gable-front roof with a boarded-up garage door and attic vent in the front wall. The asphalt-sheathed roof has deteriorated and has a large hole on the north side.

Evaluation: Contributing

The concrete block garage, built in c.1924 to 1940, contributes to the historic character of the landscape as a feature of the World Wars I & II period. Although in poor condition, the building reflects the continued use of the Battery Weed headland during the interwar period.

BS-5. Concrete Shed (Building 144)

Historic Condition

In c.1940, a small concrete-slab shed was constructed immediately to the east of cable tank buildings 1 and 2 on the west side of the dock road. The building may have housed utilities or possibly served as a guard station during World War II.

Existing Condition

The small, one-story, concrete-slab shed on the west side of the dock road measures approximately ten feet by twelve feet and has a low-pitched concrete shed roof and a door opening on the southwest side. (Figure 3.26) The door is missing.

Evaluation: Contributing

The small concrete shed on the west side of the dock road contributes to the historic character of the landscape as a feature of the World Wars I & II period.

Although its historic use is presently not known and its condition is poor, the building illustrates the continued military use of the Battery Weed headland during the interwar period.

BS-6. North Dock

Historic Condition

The north dock was initially built in c.1858 as an 'L'-shaped granite masonry structure approximately forty-feet wide by eighty-feet long, supported by granite piles and extending from a curved bulkhead retained by the granite seawall. The deck was surfaced in granite block, the same material used in the construction of Battery Weed and the seawall. In c.1877, a boathouse, later used as the quartermaster's warehouse, was built along the south side of the dock. Steel rails of a mine railway were initially laid in c.1887 from Battery Weed to the end of the stone dock so that subsurface mines could be transported to vessels for deployment. The rails were laid on a concrete bed that replaced the granite blocks. A large timber extension, measuring 154 feet long by sixty-five feet wide, was built off the east end of the dock in c.1907. The mine railway was extended onto the new section and a mine boathouse was built along its western side. At the same time, an open dockhouse, enclosed by 1945, was built off the east side of the quartermaster's warehouse. Inside this building was a tide station was installed in c.1925.

Existing Condition

In c.1960, part of the timber dock extension and the three dock buildings—quartermaster's warehouse, dock house, and mine boathouse—were removed, possibly as a result of hurricane damage. The remainder of the timber dock extension collapsed prior to 1995, leaving scattered piles and remnants of the mine railway. (Figure 3.27) The remaining original stone section of the dock, extending from the shoreline north of Battery Weed in an 'L' shape, is approximately forty feet wide by eighty feet long. The structure consists of granite piles spaced approximately sixteen feet that support granite and iron beams. The deck is surfaced in granite block with concrete along the mine rails. (Figure 3.28)

Evaluation: Contributing

The north dock, initially constructed in c.1858 and expanded in c.1877 and c.1907, contributes to the historic character of the landscape as a defining structure of the Third System and Endicott periods. Since the end of the historic period, the north dock suffered loss of the timber extension and dock. The loss of these additions and the deteriorated condition of the remaining stone section detracts from the historic character of the landscape.

BS-7. Second Mine Casemate (Building 140)

Historic Condition

In c.1905, a brick and concrete structure designed as a mine casemate was built into the south end of recently constructed Battery Catlin, overlooking the Torpedo Storage Building, north dock, and harbor where the mines were processed and deployed. From its perch thirty-five feet above the Narrows, the second mine casemate held a commanding view. The building was a replacement of the first mine casemate built into the northwest bastion of Battery Weed in c.1887. Like the first casemate, its replacement housed a switchboard that controlled detonation of the mines through electrical signal transmitted over cables. These cables extended from the casemate through a twenty-four inch conduit extending 130 feet from the building through the seawall into the Narrows. The casemate also housed telecommunication equipment used to monitor activities in the harbor.

Existing Condition

Since the end of the historic period in 1945, the second mine casemate has stood empty except for a period when it was used by a local rod and gun club. At some point, probably in the 1980s, the building suffered extensive damage due to a fire that left only the brick walls standing. Measuring approximately sixty feet by seventy-five feet, the mine casemate is buried in invasive and successional vegetation on Battery Catlin. (Figure 3.29) It is surrounded by a terrace, probably surfaced in concrete. The building is cordoned off by chain-link fence.

Evaluation: Contributing

The second mine casemate on Battery Catlin, constructed in c.1905, contributes to the historic character of the Endicott-period landscape. The ruined condition of the building and cover of invasive vegetation detract from the historic character of the landscape.

BS-8. Battery Catlin Parados

Historic Condition

As part of the construction of the North Cliff Battery between 1863 and 1867, the Army constructed a subsurface chamber within the earthwork. In the plans for this structure, it is labeled as a "Bomb-proof Parados." Covered under several feet of earth in the south end of Battery Catlin, it was designed to provide protection from fire behind the fort. The only exterior feature of the chamber was an entry door set into the steep slope, today facing the mine casemate to the north. The three-inch thick, bronze-fastened, wood plank door had a small vertical window and opened outward. The hillside doorway was flanked by granite block cheek walls, which led to four steps down inside to two narrow barrel-vaulted concrete corridors, one of which was connected with a concrete underground chamber. Between 1902 and 1904, the North Cliff Battery was rebuilt as Battery Catlin, but the project apparently left the parados intact.

Existing Condition

The bomb-proof parados located at the south end of Battery Catlin, and measures approximately twenty feet by forty feet in over-all dimension. Access to the underground vault is by an exterior walk set into the earthwork with heavy granite-block cheek walls that are in poor condition. (Figure 3.30) A three-inch thick, bronze-fastened wood plank door with a small vertical window opens outward and leads to steps down through a narrow, barrel-vaulted concrete corridor and interior chamber. The entryway is concealed by dense woods and vines.

Evaluation: Contributing

The Battery Catlin bomb-proof parados, constructed in c.1865, contributes to the historic character of the landscape as a distinctive structure of the Third System period. Although never highly visible in the landscape, the parados remains a key military feature from the site's early history and may be one of only a few structures in Battery Catlin remaining from the original North Cliff Battery.

BS-9. Battery Bacon North Gun Emplacement

Historic Condition

In c.1898, South Cliff Battery was reconstructed as a series of earthen and reinforced concrete batteries to accommodate new gun emplacements. The northernmost of these batteries, immediately to the south of Battery Weed was Battery Bacon. The gun emplacement at its north end, rising forty-nine feet above the Narrows, contained a raised concrete platform accessible by concrete steps on each side. To the north of and extending from this platform was a gun emplacement edged with a low granite parapet wall with a round concrete pad, iron pintle and semi-circular rail set into the ground. Guns were mounted at Battery Bacon until c.1942. (The earthwork is evaluated under Topography, T-3.)

Existing Condition

Since 1945, the north gun emplacement of Battery Bacon, located just to the south of Battery Weed and along the east side of Battery Weed Road, became covered in successional woods. In c.1995, the emplacement was cleared of vegetation and an interpretive panel was installed. Today, the gun emplacement is the only part of Battery Bacon kept open, although it is partially covered in invasive vines. The masonry features are deteriorating. (Figure 3.31)

Evaluation: Contributing

The Battery Bacon north gun emplacement, built in c.1898, contributes to the historic character of the landscape as a characteristic feature of the Endicott period. Although guns were removed at the end of the historic period, the structure still clearly conveys its historic military use. The cover of dense vegetation detracts from its historic character.

BS-10. Overlook Stone Wall

Historic Condition

A stone wall along the edge of the overlook along Hudson Road was probably constructed as a Works Progress Administration (WPA) project in c.1938. The wall formalized the recreational use of the overlook, which had been a popular spot for taking in the panoramic views of New York Harbor since the early nineteenth century. The wall appears to have been intended as a barrier to keep pedestrians and automobiles from toppling down the steep slope. The wall cut off access to the walks that extended down the slope.

Existing Condition

The stone wall along the crest of the slope above Battery Weed measures approximately 2,000 feet in length and ranges in height from approximately eighteen to thirty-eight inches. It is mortared rubble wall with a mix of quarried rock and large stones, including brownstone and granite, with a parged cap. (Figure 3.32) Repairs to the mortar and concrete have been made with white Portland cement in some areas, and the top parging is cracking and lifting in places. Cars can no longer pull up to the wall.

Evaluation: Contributing

The overlook stone wall, built in c.1938, contributes to the historic character of the landscape for illustrating recreational use of the military site in the early twentieth century related to the panoramic view of New York Harbor.

BS-11. Overlook Concrete Structure

Historic Condition

No documentation was found on the square concrete structure to the east of the stone wall at the top of the slope below the overlook stone wall. A structure in this approximate location is indicated on a 1865 plan dated 1865 as a latrine. It is possible that the structure is a portion remaining from that period, although its shape appears to be different from that on an 1865 plan.

Existing Condition

A square concrete structure measuring approximately fifty-two inches and set into the slope immediately to the east of the stone wall at the top of the slope is flush with the surface of the slope on the west side and approximately eighteen inches above grade on the east side. The concrete is weathered and worn away in places, and the center of the structure appears to have been an opening that is covered in concrete. (Figure 3.33)

Evaluation: Unevaluated

Based on a lack of documentation, the overlook concrete structure is not evaluated. While it is a minor structure that does define the historic character of the landscape, it may provide insight into the historic use and development of the overlook.

BS-12. Parade Ground Stone Gutters

Historic Condition

Surface drainage within the parade ground was accommodated by stone gutters that emptied into a common cistern. This system was probably built between 1847 and 1864 as part of the original construction of Battery Weed. An 1893 photo of the parade ground indicates that the gutters were present at that time.

Existing Condition

In c.1995, the cistern cover was rebuilt in concrete with a steel hatch. It is not known if the underground section was replaced at the same time. The stone gutters, approximately 180 feet long and twenty-four inches wide, are located along the eastern edge of the parade ground approximately twenty-five feet from the casemate walls of the fort. The alignment of the three sections roughly parallels the north, east, and south walls of the fort. The gutters consist of three stone slabs forming a depressed channel that drain into the cistern at the intersection of the two northern gutter sections. (Figure 3.34)

Evaluation: Contributing

The parade ground stone gutters, most likely constructed between 1847 and 1864, contribute to the historic character of the landscape as a utilitarian feature associated with the original construction of Battery Weed.

BS-13. Concrete Seawall

Historic Condition

Records of the Works Progress Administration indicate that a seawall was constructed at Fort Wadsworth in c.1938. The WPA records likely refer to the poured concrete seawall constructed north of the end of the granite seawall, north of the north dock.

Existing Condition

The concrete seawall, approximately 550 feet long and seven feet high and partly covered in vines, extends from a large pilaster or utility structure measuring approximately six feet square continues north along the edge of the beach below Battery Catlin, beyond the CLR project area. (Figure 3.35) The adjoining granite seawall has collapsed.

Evaluation: Contributing

The concrete seawall, probably constructed through the Works Progress Administration in c.1938, contributes to the historic character of the landscape as a structure from the World Wars I & II period. The wall remains largely unchanged since the end of the historic period.

BS-14. Slope Retaining Wall

Historic Condition

The slope retaining wall (labeled 'sustaining wall' on historic plans) along Battery Weed Road was constructed of eight-inch thick granite blocks in c.1848 to support the steep slope above the southwest bastion of the new fort then under construction. The south portion of the wall was buried or removed with construction of the South Cliff Battery in c.1862.

Existing Condition

The slope retaining wall extends approximately fifty-six feet in length and follows the slope of Battery Weed Road rising from approximately eight inches at the north end to approximately twenty-six inches on the south end. (Figure 3.36) No substantial change has occurred to the slope retaining wall since the end of the historic period in 1945 aside from the adjoining addition of a curb gutter along Battery Weed.

Evaluation: Contributing

The slope retaining wall contributes to the historic character of the landscape as a characteristic structure of Third System period. It appears to remain unchanged since the end of the historic period.

BS-15. Reveal Coincidence Range-Finder (CRF) Station

Historic Condition

The Coincidence Range-Finder (CRF) Station was constructed on the slope above Battery Bacon in c.1917 as part of the modifications to the site in support of firing accuracy from the batteries. Another CRF Station, although not within the project area for this report, was built at approximately the same time on the slope above Battery Catlin.

Existing Condition

The Coincidence Range-Finder (CRF) Station is a concrete and metal structure that is obscured by dense vegetation. (Figure 3.37) It appears to retain its overall structure, but the interior workings have probably been removed.

Evaluation: Contributing

The Coincidence Range-Finder (CRF) Station, built in 1917, contributes to the historic character of the landscape as a feature of the World War I period. It appears to have lost its interior workings. The existing dense vegetation that covers most of the building detracts from the historic character of the landscape.

BS-16. Surface Drain

Historic Condition

The surface drain did not exist historically.

Existing Condition

The surface drain across Battery Weed Road near the entrance of Battery Weed is approximately fifty feet long and one foot wide, and was installed in c.1995 to

intercept surface water flow before it reached Battery Weed. (Figure 3.38) The drain did not remove the mine rails.

Evaluation: Non-contributing

The surface drain does not contribute to the historic character of the Battery Weed landscape because it was added after the historic period. It does not detract due to its small scale and sensitive integration into the bed of the railway and road.

VIEWS AND VISTAS

Views are broad prospects of a general area, while vistas are designed and directed views of a particular scene or feature. During the historic period, the panoramic views of New York Harbor from the headland, both from the overlook and shoreline, were character-defining features that were key to the strategic design of the landscape and also drew many visitors. Visitors also enjoyed sweeping water-level views from the granite seawall of Battery Weed and from the north dock. The view from the barbette tier of Battery Weed was an important strategic element that allowed a full range and angle of fire for the guns mounted there. During times of military inactivity, visitors also climbed the circular granite steps and enjoyed the spectacular views from the barbette tier. Some of these views were either obstructed or disappeared after 1945 due to growth of successional woods, but since 1995 have in part been reopened by the park.

VV-1. Overlook View

Historic Condition

The overlook at crest of the slope, 123 feet above the Narrows and Battery Weed, provided an open and panoramic view from north to south. Strategically, it provided for an open range of view from Fort Tompkins. Visible from this view to the north were the bluffs along Staten Island, Upper New York Bay, and Manhattan; to the east, Brooklyn with Fort La Fayette and Fort Hamilton guarding the opposite side of the Narrows; and to the south, Lower New York Bay, the Atlantic Ocean, and Sandy Hook, New Jersey. In the foreground of the view above the bay were the north dock on the waterfront, Battery Weed, the earthen batteries and the bustling maritime activity through the Narrows. As visitors strolled along the promenade along the overlook and walked down the slope, they experienced a changing perspective on this view and the activities on the bay and waterfront below. Access to the slope walks was removed in c.1938.

Existing Condition

By the 1980s, the panoramic view from the overlook became obstructed through the growth of successional woods on formerly open ground. In c.1995, the park cleared a large part of these woods to reopen the view, but left portions of the

slope to the north and south wooded, which provided a more constricted view than what existed prior to 1945 (see Figure 3.2). The Verrazano-Narrows Bridge also obstructs views to the east and south (see Figure 3.9). Despite growth of the clearing in vines, the view of the harbor looking northeast from the overlook is panoramic. (Figure 3.39)

Evaluation: Contributing

The overlook view contributes to the historic character of the landscape as a defining feature that illustrates the landscape's strategic importance as well as the basis for its informal recreational use throughout the historic period. While the limits of the view have changed since 1945 through the growth of successional woods and introduction of the Verrazano-Narrows Bridge that constrict the northern and southern extents, overall the view retains its historic panoramic quality.

VV-2. Water-Level Views

Historic Condition

Panoramic views across the water are inherent in the coastal site, but became formalized with construction of the Battery Weed, which required the views for strategic purposes. The completion of the seawall and moat in c.1871 allowed access to the waterfront, opening the views to informal, occasional public use.

Existing Condition

Loss of the timber dock extension in c.1960 resulted in restricted range of view from the waterfront. The panoramic waterfront views along the seawall and north dock encompass the Staten Island shoreline, Upper New York Bay, and Manhattan to the north, the Narrows, Brooklyn, and Forts Lafayette and Hamilton to the east, and Lower New York Bay to the south with Coney Island in the distance. (Figure 3.40) The Verrazano-Narrows Bridge constricts the views to the south. Access to the shoreline and waterfront views is restricted by fencing.

Evaluation: Contributing

The panoramic water-level views contribute to the historic character of the landscape as a defining strategic feature of Third System period. The views are also associated with informal recreational use of the military site dating back to the nineteenth century. Aside from the loss of the timber dock extension and addition of the Verrazano-Narrows Bridge, the character of the water-level views remain little changed since the end of the historic period.

SMALL SCALE FEATURES

This characteristic describes minor built features that provide aesthetic detail and function, such as benches, signs, light fixtures, bollards, and fencing. Historically, many of the small-scale features in the Battery Weed landscape were part of the coastal defense artillery, including guns (cannons), long-range

rifles, mine railway cars, mine cases, and mine planting vessels, but also included features such as flag poles, utility poles, and bollards. After c.1942, most of the cannons were removed from the site and stored elsewhere or used for scrap as part of the war effort, and after the war, the remainder of the artillery including smaller guns and mines were also removed. Small-scale features introduced after 1945 were installed either for security purposes, such as fences and light standards, or for recreation, such as benches, signs, and trash cans. Several guns were installed as interpretive elements.

SS-1. Chain Link Fencing

Historic Condition

Chain-link fencing most likely did not exist in the landscape during the historic period.

Existing Condition

Six-foot high chain-link fencing, installed after 1945 to close off access to the waterfront and abandoned buildings, is located along the east side of the Torpedo Storage Building, around the second mine casemate on Battery Catlin, and across the dock road, where a locked gate closes off access to the waterfront. (Figure 3.44)

Evaluation: Non-Contributing

The various sections of chain-link fencing, installed after 1945, do not contribute to the historic character of the landscape. The fencing detracts from the historic character by altering spatial and circulation patterns.

SS-2. Overlook Telescopic Viewing Stations

Historic Condition

Telescopic viewing stations did not exist in the landscape during the historic period.

Existing Condition

Two binocular telescopic viewing stations, installed after c.1995, are located along the west side of the stone wall at the overlook terrace. (Figure 3.42) The viewing stations allow visitors to get a closer look at sights such as Battery Weed, shipping traffic in the Narrows, the Manhattan skyline, Brooklyn and the Verrazano-Narrows Bridge.

Evaluation: Non-Contributing

The telescopic viewing stations do not contribute to the historic character of the landscape. However, they are compatible due to their small scale and relationship to the historic recreational use of the overlook.

SS-3. Overlook Flagpole

Historic Condition

The flagpole at the overlook did not exist during the historic period.

Existing Condition

An aluminum flagpole with yardarms, approximately fifty feet tall, was installed at the overlook above Battery Weed in c.1995 as part of the park's redesign of the overlook terrace. The pole, which is on axis with Tompkins Road, displays an American flag, a National Park Service flag, and a Department of the Interior flag. (Figure 3.43)

Evaluation: Non-Contributing

The flagpole at the overlook does not contribute to the historic character of the landscape because it did not exist historically. It is compatible because it does not obstruct or conceal other historic features, and because it recalls the historic military use of the site.

SS-4. Overlook Gun

Historic Condition

Two cannons (guns) existed at the south end of the overlook between c.1873 and c.1908. The existing gun did not exist during the historic period.

Existing Condition

The overlook gun was installed as in interpretive element in c.1995 as part of the park's redesign of the overlook terrace. The gun, on a concrete mount, is smaller than those that existed historically near this location. (Figure 3.44) The successional woods on the adjoining slope block the line of fire toward the harbor that would have existed from this gun.

Evaluation: Non-Contributing

The overlook gun does not contribute to historic character of the landscape because it was added after the end of the historic period. This feature is compatible became it recall the guns that existed near this location.

SS-5. Cable Testing Trough

Historic Condition

A cable testing trough was installed in c.1904 near the entrance to Battery Weed. The feature was used to test mine cable that were stored in adjoining buildings that lined the west side of Battery.

Existing Condition

The cable testing trough, a metal covered chamber located on the fortress grounds near the entrance to Battery Weed, measures approximately four feet by six feet and is set flush with the lawn. (Figure 3.45) Adjoining the cable testing tank are two concentric concrete footings that are the remains of the cable testing tank (see A-4).

Evaluation: Contributing

Although inconspicuous, the cable testing trough, installed in c.1904, contributes to the historic character of the landscape as part of a complex of support structures and buildings in the mine defense system. The trough appears to be unaltered.

SS-6. Parade Ground Munitions Pads

Historic Condition

The parade ground munitions were probably installed prior to 1893. A photograph by Alice Austin dated 1893 showing cannon balls stacked in an area corresponding with the existing pads. There may have been additional munitions pads in the parade grounds at the time. Following removal of the guns from Battery Weed by c.1903, cannonballs were probably no longer stored on the parade grounds.

Existing Condition

The parade ground munitions pads are two rectangular poured concrete panels located to either side of the flagpole near the east edge of the parade ground beside the stone gutters. (Figure 3.49) Both are approximately seven feet wide, one is twenty feet long, the other thirty-two feet long. The concrete is flush with the lawn.

Evaluation: Contributing

The parade ground munitions pads, constructed prior to 1893, contribute to the historic character of the landscape for illustrating the active military use of the parade ground during the Endicott period and possibly earlier. They probably fell out of active use during the historic period.

SS-7. Parade Ground Flagpole

Historic Condition

A steel flagpole was installed in the center of the Battery Weed parade ground between 1893 and 1945 (it is not visible in the 1893 Alice Austin photograph). The exact date of the flagpole's installation is not known. Flagpoles were historically key features of military parade grounds.

Existing Condition

The parade ground flagpole is steel with a concrete base and a ball finial. It is located between the two parade ground munitions pads near the north/south center of the parade ground and is approximately twenty feet tall. (Figure 3.50)

Evaluation: Contributing

The parade ground flagpole, constructed prior to 1945, contributes to the historic character of the landscape for illustrating active military use during the historic period.

SS-8. Park Benches

Historic Condition

The eight park benches in the Battery Weed headland did not exist during the historic period.

Existing Condition

Four of the park benches are located at the overlook terrace, three are outside the south end of the Torpedo Storage Building, and one is along the west wall of Battery Weed. They are constructed of plastic or fiberglass and metal with concrete bases. (Figure 3.48)

Evaluation: Non-contributing

The benches do not contribute to the historic character of the landscape because they were added after the historic period. While the benches are not compatible in materials or design with the historic character of the landscape, they are inconspicuous.

SS-9. Interpretive Waysides

Historic Condition

The six interpretive waysides in the Battery Weed headland did not exist during the historic period.

Existing Condition

Installed after 1995, three of the interpretive waysides are located at the overlook terrace, one near the south end of the Torpedo Storage Building, one near the entrance to Battery Weed, and one along the dock road near the chain link fence. They are approximately thirty by forty inches, constructed of metal and plastic. (Figure 3.49)

Evaluation: Non-contributing

The interpretive waysides do not contribute to the historic character of the landscape because they were added after the historic period. In size, scale, and materials, they are generally compatible with the historic character of the landscape.

SS-10. Dock Utility Pole

Historic Condition

The dock utility pole at the shoreline was probably installed by c.1907 with construction of the timber dock extension, dock house, and mine boathouse. It probably provided power and communications between the north dock facilities and other locations at Fort Wadsworth.

Existing Condition

By 1960, the facilities on the north dock that the utility line serviced had been removed. The wood dock utility pole is approximately thirty feet tall with climbing hardware and a single wire remaining attached. (Figure 3.50)

Evaluation: Contributing

The dock utility pole contributes to the historic character of the landscape as a remnant of the facilities located on the north dock during the historic period.

SS-11. North Dock Bollards

Historic Condition

The dock bollards were probably installed at the time of the north dock's construction in c.1858. These may have been fabricated from cannon shafts, with a cap installed on the top. There may have been additional bollards, but their number and location are not known.

Existing Condition

The two dock bollards located on the southeast and southwest corners of the north dock are made of cast iron, approximately three feet tall in a gently tapered column that has the shape of cannon shafts. (Figure 3.51) The surface of the bollards is lightly rusted and smooth, and they are in good condition.

Evaluation: Contributing

The north dock bollards, installed in c.1858, contribute to the historic character of the landscape as a feature of Third System period illustrating the historic nautical use of the north dock.

ARCHEOLOGICAL FEATURES

There remain a number of foundations and other remnants of buildings and structures in the Battery Weed headland, most of which have been removed since 1945. Although these do not contribute to the overall character of the landscape, they do have the potential to serve as important interpretive elements and provide information on the historic operation of the fortifications on the headland. These include the following:

A-1. Cable Tank 1 and 2 Foundations

Concrete foundations from two wood-frame cable tank buildings built in 1898-1899 are located in an area approximately one hundred feet long, parallel to the Torpedo Storage Building. Remnants of the mine railway extend up to the south end of the foundations. These foundations are partly concealed by vegetation.

A-2. Cable Tank 3 Foundation

Concrete foundations from a wood-frame cable tank building dating to c.1905 are located in an area just to the west of cable tanks 1 and 2, near the dock road. These foundations are concealed by vegetation.

A-3. Cable Tanks 4, 5 and 6 Foundations

Concrete foundations from three wood-frame cable tank buildings built in c.1905 extend along the exterior of the west wall of Battery Weed, over the west moat wall (see Figure 3.21). The foundations are clearly visible in an area of mown grass.

A-4. Cable Testing Tank Foundations

Two concentric concrete footings are located west of cable tanks 5 and 6. These are remains of a cable testing tank added in c .1921 and removed prior to 1945 (see Figure 3.45). The foundations are covered in part by turf.

A-5. Cofferdam Remnants

Structural remnants parallel to the seawall on the beach south of Battery Weed may be remnants of the cofferdam built in c.1846-71. The stone remains are located below the high water line approximately fifteen feet to the south and east sides of the seawall around Battery Weed.

In addition to visible remnants, there are also many subsurface archeological remains in the Battery Weed headland. Archeological investigations by the Navy and National Park Service over the past two decades reveal some level of general environmental sensitivity for prehistoric use of the bluff edge and base for resources procurement, but the potential for presence of intact or significant resources has been limited by the historical construction episodes. Construction of Batteries Catlin and Bacon between 1898 and 1904 probably destroyed most of the earlier batteries, and additional resources most likely have been destroyed by construction of the mine defense complex buildings and structures. However, there is some potential for resources associated with the early British block house and with the first Fort Richmond to be present beneath or immediately adjacent to Battery Weed. Prior archeological investigation also has identified some potential for evidence of later features including support buildings associated with the construction of Fort Wadsworth/Battery Weed, the cofferdam remnants, and water-control features within the filled moat.[9]

Battery Weed Headland Summary Table of Landscape Feature Evaluations		
Feature Key/Name	***Evaluation***	***Notes***
Natural Systems and Features		
NS-1 Successional Woods and Vines	Non-Contributing	Not present prior to 1945
Spatial Organization		
SO-1 Parade Ground	Contributing	Defining feature of Third System Period
SO-2 Moat Space	Contributing	Perimeter space, moat filled in c.1904
SO-3 Overlook Space	Contributing	Key strategic and recreational feature
SO-4 Slope Space	Contributing	Open space, Fort Tompkins range of fire
Land Use (no associated features)		
Circulation		
C-1 Battery Weed Road	Contributing	Roughly follows pre-1847 road
C-2 Hudson Road	Contributing	Roughly follows pre-1847 road
C-3 Overlook Promenade	Contributing	Public viewing route dating to 19th century
C-4 Slope Walks	Unevaluated	Built in c.1893, cut off by overlook stone wall in c.1938.
C-5 Waterfront Promenade	Contributing	Public viewing route dating to 19th century
C-6 Mine Railway	Contributing	Begun c.1887, reworked through 1921
C-7 Dock Road	Contributing	Route to north dock dating to c.1858.
Topography		
T-1 Engineered Slope (see also SO-4)	Contributing	Natural bluff graded between 1847 and 1873.
T-2 Battery Catlin Earthwork	Contributing	North Cliff Battery c.1863-67, reconstr. 1902
T-3 Battery Bacon Earthwork	Contributing	South Cliff Battery c.1862-66, reconstr. 1898
Constructed Water Features (no associated features)		
Vegetation		
V-1 Parade Ground Lawn	Contributing	Mown grass, established c.1847-1864
V-2 Fortress Grounds & Slope Turf	Contributing	Most lost to successional growth post 1945
V-3 Specimen Roadside Trees	Contributing	Three sycamores, c.1938
Buildings and Structures		
BS-1 Battery Weed (#151)	Contributing	Third System fort built 1847-1864
BS-2 Granite Seawall	Contributing	Completed in 1871, partially collapsed
BS-3 Torpedo Storage Building (#147)	Contributing	Built c.1894, fire damaged 1980s
BS-4 Concrete Block Garage (#148)	Contributing	Built c.1924-40
BS-5 Small Concrete Shed (#144)	Contributing	Built c.1940-1945
BS-6 North Dock	Contributing	Built c.1858, timber extension, c.1907, lost 1960 along with three connected buildings

BS-7 Second Mine Casemate (#140)	Contributing	Built c.1905, ruined 1980s
BS-8 Battery Catlin Parados	Contributing	Built c.1865, retained in Battery Catlin
BS-9 Battery Bacon N. Gun Emplacement	Contributing	Built c.1898, guns removed pre-1945
BS-10 Overlook Stone Wall	Contributing	Built c.1938, possibly by WPA
BS-11 Overlook Concrete Structure	Unevaluated	Unknown origin
BS-12 Parade Ground Stone Gutters	Contributing	Built c.1847-1864
BS-13 Concrete Seawall	Contributing	Built c.1938, possibly by WPA
BS-14 Slope Retaining Wall	Contributing	Built c.1848
BS-15 Coincidence Range-Finder Station (#338)	Contributing	Built c.1917, covered by vegetation
BS-16 Surface Drain	Non-contributing	Near Battery Weed entrance, c.1995
Views and Vistas		
VV-1 Overlook View	Contributing	Panoramic view from crest of slope
VV-2 Water-Level Views	Contributing	Panoramic view along seawall and north dock
Small Scale Features		
SS-1 Chain Link Fencing	Non-contributing	Post-1945; detracts and alters circulation
SS-2 Overlook Telescopic Viewing Stations	Non-contributing	Installed c.1995
SS-3 Overlook Flagpole	Non-contributing	Installed c.1995
SS-4 Overlook Gun	Non-contributing	Installed c.1995; guns historically near this feature
SS-5 Cable Testing Trough	Contributing	Built c.1904
SS-6 Parade Ground Munitions Pads	Contributing	Built pre-1893
SS-7 Parade Ground Flagpole	Contributing	Installed c.1893-1945
SS-8 Park Benches	Non-contributing	Installed c.1995
SS-9 Interpretive Waysides	Non-contributing	Installed post-1995
SS-10 Dock Utility Pole	Contributing	Erected c.1907 or earlier
SS-11 North Dock Bollards	Contributing	Installed c.1858
Archeological Features		
A-1 Cable Tanks 1 and 2 Foundations	n/a	Concrete foundation, c.1904
A-2 Cable Tank 3 Foundation	n/a	Concrete foundations, c.1905
A-3 Cable Tanks 4,5 and 6 Foundations	n/a	Concrete foundations, c.1905
A-4 Cable Testing Tank Foundations	n/a	Concrete foundations, c.1921
A-5 Cofferdam Remnants	n/a	Stone remnants, c.1847-71

ENDNOTES

[1] "Gateway National Recreation Area National Register Status: Summary and Detail" (Unpublished National Park Service report, October 1997), 1.

[2] National Park Service, National Register of Historic Places Registration Form, Fort Wadsworth, 1997; National Register Status: Summary and Detail, 1.

[3] Should the larger Fort Wadsworth historic district be listed in the National Register, the Battery Weed landscape would be a contributing component. The most comprehensive documentation of significance of the Battery Weed headland would be through a multiple property nomination embracing all of the harbor defenses of New York.

[4] Frederick R. Black, *A History of Fort Wadsworth, New York Harbor* (Boston, Massachusetts: U.S. Department of the Interior National Park Service North Atlantic Regional Office, Cultural Resources Management Study N0.7, 1983), 111.

[5] This evaluation addresses only the portions of Batteries Bacon and Catlin within the CLR project area, but considers these features in their wider context.

[6] Natural contours of the land are considered part of the natural systems and features characteristic.

[7] Natural streams and springs are considered part of the natural systems and features characteristic.

[8] This characteristic describes the managed trees, shrubs, vines, ground covers, and herbaceous materials in the landscape, and does not include natural flora such as successional woods, considered part of the natural systems and features characteristic.

[9] Jim Harmon, Archeologist, NPS Northeast Region Archeology Program, e-mail communication to John Auwaerter, 20 August 2008. Navy EIS and archeological sensitivity issues from Ingrid Wuebber and Edward M. Morin, "Phase IA Archeological Investigation, Rehabilitate Battery Weed Seawall and Dock, Fort Wadsworth Unit [sic], Gateway National Recreation Area, Staten Island, New York" (Unpublished report prepared for the National Park Service by URS Corporation, 2006).

Figure 3.1: These two photographs, taken looking in a westerly direction across the Battery Weed headland, illustrate the contrasting landscape character in 1923 and 1994 that has resulted largely from the growth of successional woods on formerly open ground. Above: Photograph 19397, Gateway National Recreation Area archives, Fort Wadsworth; Below: Reproduced from Langen Engineering and Environmental Services, "Pier/Seawall Evaluation and Ferry Feasibility Study Fort Wadsworth, Staten Island, New York: (Unpublished report prepared for the National Park Service, 1995).

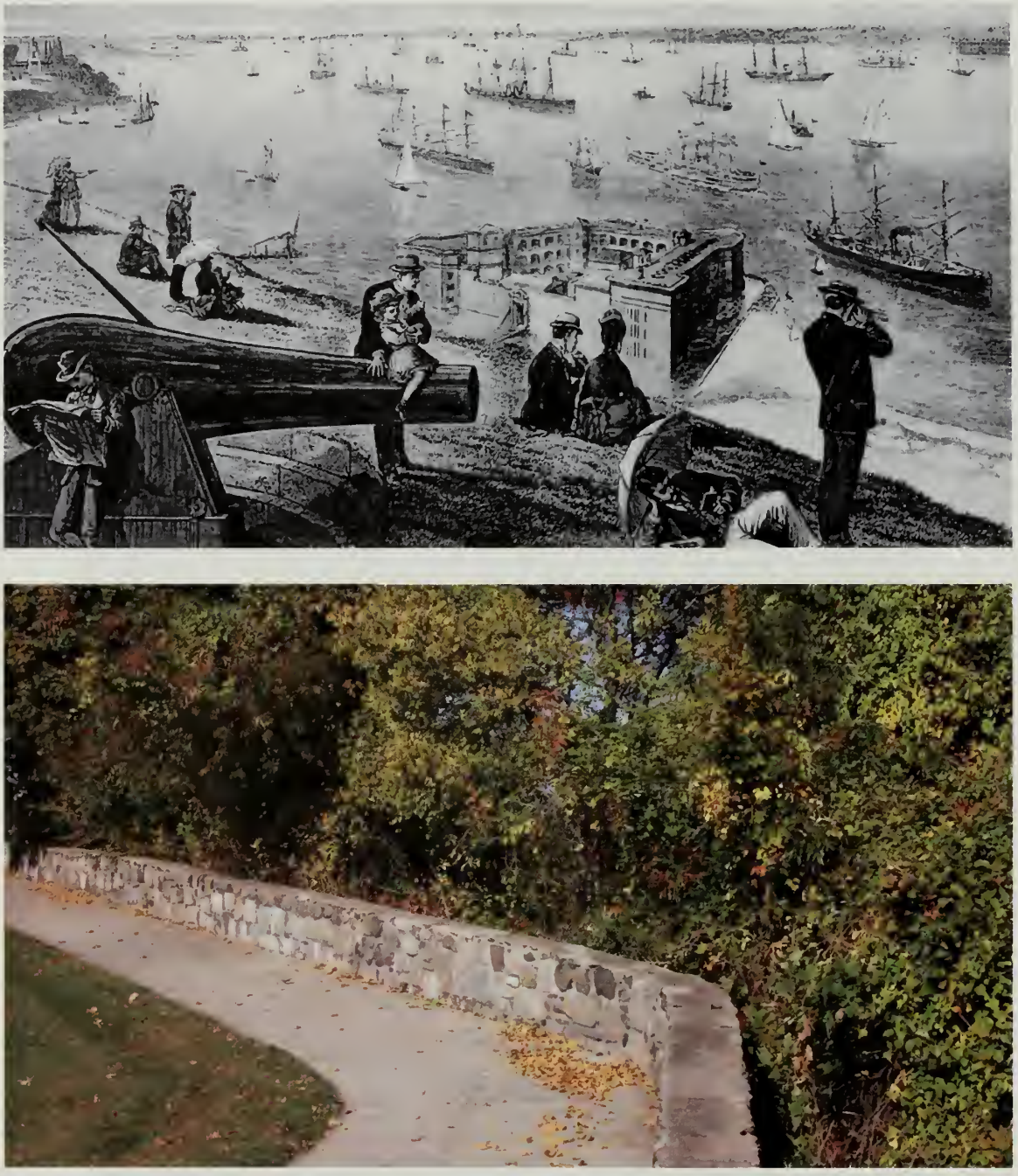


Figure 3.2: Two views taken from the same location in 1900 and 2007 at the overlook above Battery Weed looking northeast illustrating the changes over time in landscape character due to growth of successional woods. This growth has constricted the once expansive views of New York Harbor. The stone wall was added in c.1938 toward the end of the historic period. Above: Photograph 19650, Gateway National Recreation Area archives, Fort Wadsworth; below: SUNY ESF, 2007.

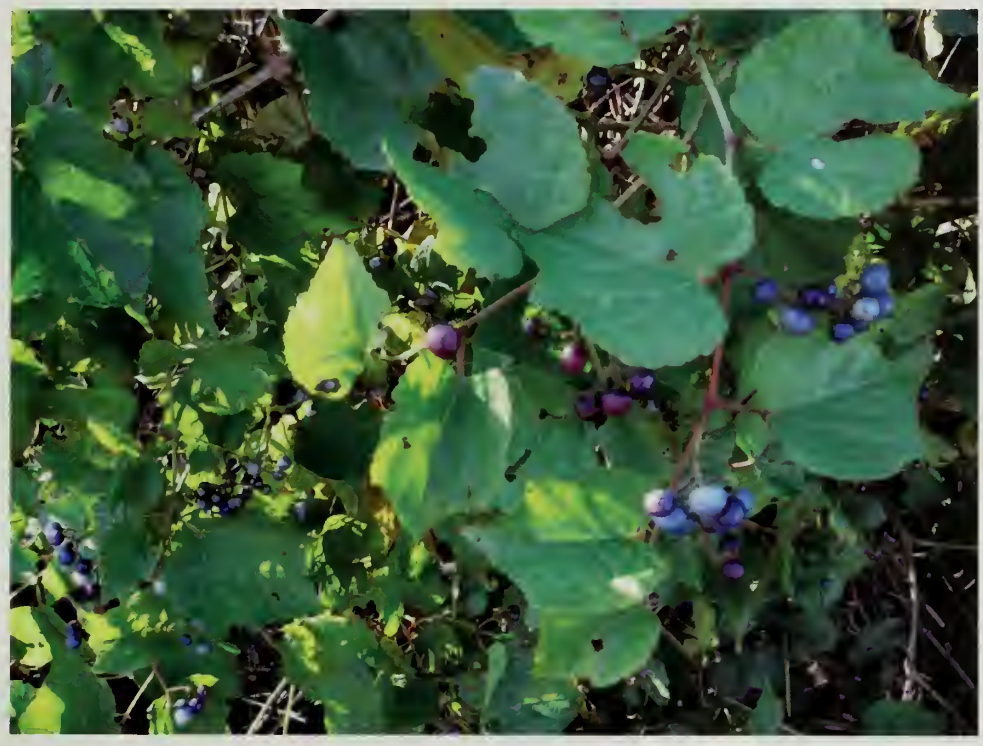


Figure 3.3: Top: Detail of porcelain berry (*Ampelopsis brevipedunculata*). Bottom: View looking northwest across the slope above Battery Weed taken in 2006 showing the blanket of the invasive vine over an area cleared in c.1995. SUNY ESF.

Figure 3.4: The parade ground (SO-1) view looking northeast, is enclosed by a half-hexagon of arched granite casemates with two four-story stair towers and guardhouse on the west side. SUNY ESF, 2006.

Figure 3.5: The moat space (SO-2), looking north, is filled with earth and rubble and top-dressed with gravel between the granite seawall (BS-2) and the fort walls. SUNY ESF, 2006.

Figure 3.6: The overlook terrace (SO-3), looking north, incorporates a contemporary gathering area and a stone wall built in c.1938 along the crest of the slope above Battery Weed. SUNY ESF, 2006.

Figure 3.7: The slope space (SO-4) in foreground looking southeast from the overlook illustrating open areas interrupted by woods and scrub. SUNY ESF, 2007.

Figure 3.8: Battery Weed Road (C-1), looking southeast along the Torpedo Storage Building. The concrete-surfaced track of the mine railway extends across the road from the rear of the building. SUNY ESF, 2006.

Figure 3.9: Hudson Road (C-2) and the overlook promenade (C-3), looking south with Fort Tompkins to the right. The existing concrete and asphalt surfaces date to c.1995. SUNY ESF, 2006.

Figure 3.10: The overlook promenade (C-3), looking south redesigned terrace dating to c.1995. The stone wall was built in c.1938. SUNY ESF, 2007.

Figure 3.11: Remains of one of the slope walks (C-4) constructed in c.1892 that is visible from above the Torpedo Storage Building, showing concrete edging. SUNY ESF, 2007.

Figure 3.12: The route of the waterfront promenade (C-5), looking south along the granite seawall completed in c.1871 and moat that was partially filled in c.1904. SUNY ESF, 2007.

Figure 3.13: The mine railway (C-6), built between c.1887 and 1921 looking northwest toward a section to the Torpedo Storage Building built in c.1896. SUNY ESF, 2007.

Figure 3.14: The engineered slope (T-1), graded in c.1873, looking northwest from Battery Weed. The slope is concealed by invasive vines and successional woods that have grown up since 1945. SUNY ESF, 2007.

Figure 3.15: The southern end of Battery Catlin (T-2), reconstructed in 1902-1904, view looking northeast showing earth mound concealed by vegetation. The mine railway is visible at the lower left. SUNY ESF, 2007.

Figure 3.16: The vine and tree-covered Battery Bacon earthwork (T-3) built in c.1898 above the shoreline, looking southeast from the parapet of Battery Weed. The battery is the area above the shoreline. SUNY ESF, 2007.

Figure 3.17: The parade ground lawn (V-1), looking south from an upper tier casemate showing also the flagpole and flanking munitions pads. SUNY ESF, 2007.

Figure 3.18: View across the former open turf areas on the fortress grounds and slope, including Battery Catlin in the middle ground and the engineered slope in the foreground. The turf has been lost to successional woods and invasive vines. SUNY ESF, 2007.

Figure 3.19: View north along Hudson Road at one of the remaining roadside sycamore tree (V-3) at the overlook dating to c.1938. This is a remnant of a row of trees that existed historically. SUNY ESF, 2007.

Figure 3.20: View southeast along Battery Weed Road showing two roadside sycamore trees (V-3) dating to c.1938. SUNY ESF, 2007.

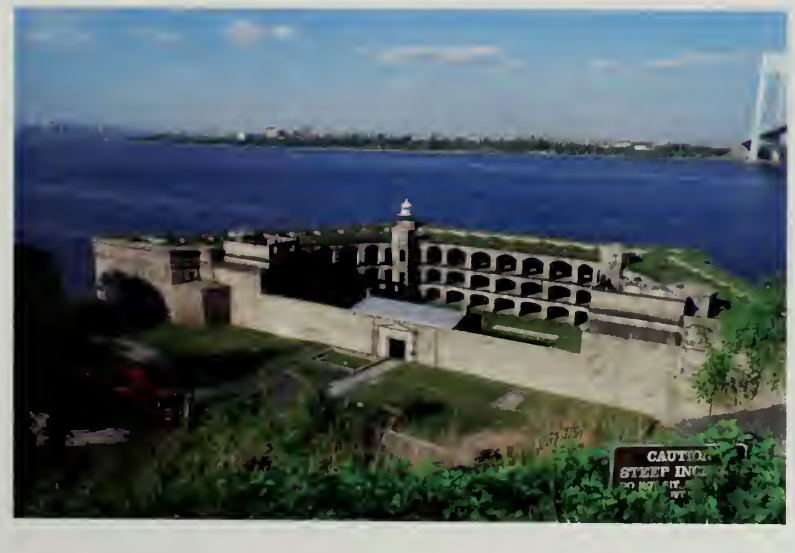


Figure 3.21: Battery Weed (BS-1), constructed between 1847 and 1864, looking northeast from the overlook terrace. The lighthouse was added in 1903. SUNY ESF, 2007.

Figure 3.22: The seawall (BS-2) completed in c.1871, view looking northeast at section that forms the outer wall of the moat around Battery Weed. SUNY ESF, 2007.

Figure 3.23: A section of the retaining wall section of the seawall (BS-2), looking south from the north dock showing a collapsed section. SUNY ESF, 2007.

Figure 3.24: The Torpedo Storage Building (BS-3), looking north from the Battery Weed barbette tier, was constructed in c.1894 and was heavily damaged in a fire during the 1980s. SUNY ESF, 2007.

Figure 3.25: The small concrete block garage (BS-4) constructed between 1924 and 1940, looking southwest with the vine-covered slope in the background. SUNY ESF, 2007.

Figure 3.26: The small concrete shed (BS-5), constructed in c.1940, looking north with the rise of Battery Catlin in the background. The historic function of this building is not known. SUNY ESF, 2007.

Figure 3.27: The north dock (BS-6), built in c.1859, looking northwest with remains of the 1907 timber extension. In the foreground is a collapsed section of the granite seawall. SUNY ESF, 2007.

Figure 3.28: The north dock (BS-6), built in c.1859, view looking northeast showing granite and concrete surface, and remnants of the mine railway and timber extension dating to 1907. SUNY ESF, 2007.

Figure 3.29: The second mine casemate (BS-7), built in c.1905, looking northeast illustrating ruined condition and cover in vegetation. SUNY ESF, 2007.

Figure 3.30: The exterior entry of the Battery Catlin parados (BS-8) built in c.1865, looking east showing granite cheek walls and overgrown conditions. SUNY ESF, 2007.

Figure 3.31: The gun emplacement (BS-9) at Battery Bacon (see T-3) built in c.1898 looking north showing concrete platform and parapet walls, iron pintle, and traverse circle. SUNY ESF, 2007.

Figure 3.32: The overlook stone wall (BS-10) built in c.1938, view looking north along the overlook terrace. The wall measures approximately 2,000 feet in length. SUNY ESF, 2007.

Figure 3.33: A square concrete structure (BS-11), looking north, set into the slope immediately to the east of the overlook stone wall at the top of the slope. The origin and use of this structure is not known. SUNY ESF, 2007.

Figure 3.34: The stone gutters and cistern (BS-12), built c.1847-1864, looking west with contemporary cistern hatch in the foreground. SUNY ESF, 2007.

Figure 3.35: The partially vine-covered concrete seawall (BS-13) built in c.1938, view looking northwest with Battery Catlin in the background. In the foreground is a collapsed section of the granite seawall. SUNY ESF, 2007.

Figure 3.36: The slope retaining wall (BS-14), built in c.1848, view look west with Battery Weed Road in the foreground. SUNY ESF, 2007.

Figure 3.37: The Coincidence Range-Finder Station (BS-15) built in c.1917, looking west from Battery Weed Road through dense vegetation. SUNY ESF, 2007.

Figure 3.38: Surface drain inlet (BS-16) added in c.1995, looking east toward the entrance of Battery Weed as it extends across the mine railway. SUNY ESF, 2007.

Figure 3.39: The panoramic view (VV-1), looking northeast across New York Harbor toward Manhattan at upper right. SUNY ESF, 2007.

Figure 3.40: Water-level views (VV-2) looking southeast from the north dock with Coney Island (Brooklyn) in the distance. SUNY ESF, 2007.

Figure 3.41: Chain link fencing (SS-1) and locking gate installed after 1945 across the dock road, looking northwest toward the north dock. SUNY ESF, 2007.

Figure 3.42: One of the two contemporary overlook telescopic viewing stations (SS-2), looking east from the overlook terrace. SUNY ESF, 2007.

Figure 3.43: The overlook flagpole (SS-3) in stalled in c.1995, looking northeast. SUNY ESF, 2007.

Figure 3.44: The overlook gun (SS-4), installed in c.1995, looking east from Hudson Road. This recalls the guns that existed historically on the overlook. SUNY ESF, 2007.

Figure 3.45: The cable testing trough (SS-5) (upper left of photograph) installed in c.1904, looking north with the circular foundations of the c.1921 cable testing tank in the foreground (A-4). SUNY ESF, 2007.

Figure 3.46: Detail of the parade ground munitions pads (SS-6) installed prior to 1893, looking north. At right is the stone gutter. SUNY ESF, 2007.

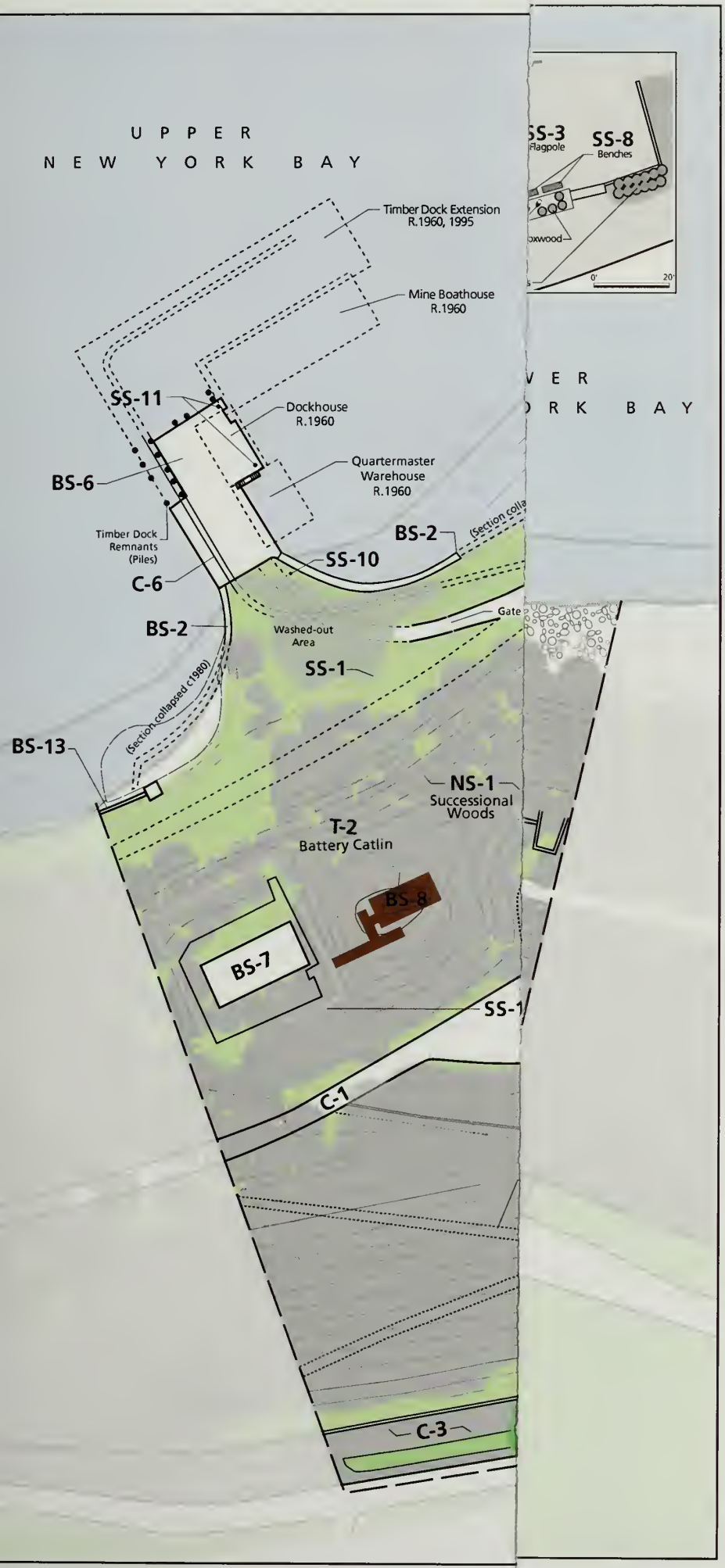
Figure 3.47: The parade ground flagpole (SS-7) installed between 1893 and 1945, looking east with munitions pads flanking either side. SUNY ESF, 2007.

Figure 3.48: Contemporary park benches (SS-8), view looking west near the near the Torpedo Storage Building. SUNY ESF, 2007.

Figure 3.49: A contemporary interpretive panel (SS-9) about Fort Tompkins located at the overlook, one of six within the Battery Weed headland. SUNY ESF, 2007.

Figure 3.50: The dock utility pole (SS-10) added by c.1907, looking northwest with the seawall and bulkhead for the north dock in the foreground. SUNY ESF, 2007.

Figure 3.51: One of the two iron dock bollards (SS-11) that probably date to the original c.1859 construction of the north dock. SUNY ESF, 2007.



Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area
Staten Island, New York

Analysis & Evaluation Plan

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

in partnership with:

Department of Landscape Architecture
SUNY College of Environmental Science and Forestry
Syracuse, New York

SOURCES

1. Drawing 3, Period Plan 1945 (SUNY ESF)
2. Drawing 5, Existing Conditions Plan 2008 (SUNY ESF)

DRAWN BY

Jean B. Gleisner, Illustrator CS3, 2008

LEGEND

- Assumed Feature
- Removed since 1945 (end of historic period)
- Added After 1945 (end of historic period)
- 5' Contour
- Fencing
- Drainage Inlet
- Subsurface Structure/Foundation
- Building or Structure
- Wall or Slope Path Edge
- Unpaved Road
- Paved Road
- Project Area
- Turf, Low Ground Cover
- Vines, Scrub
- Successional Woods
- Rocky Beach
- R.1917 Approximate Date Removed
- NS-2 Landscape Evaluation Feature Number (Keyed to Text)

NOTES

Plan shows character defining features removed since the end of the historic period (c.1847-1945) by dashed lines.
Dates shown indicate date of initial construction and/or removal.
Features built and removed after 1945 not shown.
A-1 and A-2 foundation remnants assumed, but undetermined.

0' 40' 80' 120' 160'

Drawing 6

Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area
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Analysis & Evaluation Plan

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LEGEND

- Assumed Feature
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- Drainage Inlet
- Subsurface Structure/Foundation
- Building or Structure
- Wall or Slope Path Edge
- Unpaved Road
- Paved Road
- Project Area
- Turf, Low Ground Cover
- Vines, Scrub
- Successional Woods
- Rocky Beach
- R 1917 — Approximate Date Removed
- NS-2 — Landscape Evaluation Feature Number (Keyed to Text)

NOTES

Plan shows character defining features removed since the end of the historic period (c.1847-1945) by dashed lines
Dates shown indicate date of initial construction and/or removal
Features built and removed after 1945 not shown
A-1 and A-2 foundation remnants assumed, but undetermined

0' 40' 80' 120' 160'

Drawing 6

IV. TREATMENT

The purpose of this chapter is to recommend modifications to the cultural landscape to preserve and enhance its overall historic character and individual historic features in the context of other park management goals including maintenance, use, and interpretation. These recommendations are based on the findings of the analysis and evaluation chapter of this report. Treatment is a strategy for the short- and long-term stewardship of a landscape that provides a framework to inform physical changes at the conceptual level. Treatment does not provide detailed specifications on how to carry out prescribed changes, nor does it prescribe actions necessary to maintain the landscape.[1]

Since National Park Service administration of the Battery Weed landscape began in 1995, management has been primarily limited to securing unsafe areas of the site and maintaining lawn on the barbette tier and parade ground of Battery Weed. The last major attempt to contain the encroaching vegetation was made in c.1995 when a portion of the slope above Battery Weed was cleared of successional woods to reestablish the panoramic view of the harbor. Park furnishings and interpretive waysides were also added during this time.

FRAMEWORK FOR TREATMENT

Treatment of a cultural landscape is framed by enabling legislation and the mission of the park, by National Park Service policies, standards and guidelines for cultural and natural resources, and by the park's current planning efforts. The enabling legislation for Gateway National Recreation Area passed in October 1972 established the park "... in order to preserve and protect for the use and enjoyment of present and future generations an area possessing outstanding natural and recreational features."[2] Although the legislation did not establish any sites within Gateway as National Historic Sites, the legislation did mandate "inventory and [evaluation of] all sites and structures having present and potential historical, cultural, or architectural significance and [provision] for appropriate programs for the preservation, restoration, interpretation, and utilization of them."[3] This 1972 legislation reinforced the National Park Service's responsibilities under the National Historic Preservation Act of 1964. Battery Weed was listed in the National Register of Historic Places in 1972.

The two decades of Department of Defense management between the establishment of Gateway in 1972 and transfer of Fort Wadsworth to the National Park Service in 1994 led to a loss of historic landscape character in the Battery Weed headland, notably through lack of vegetation maintenance and loss or damage to a number of buildings and structures. Since assuming

jurisdiction, the National Park Service has followed a general preservation and rehabilitation approach toward the landscape, following *Secretary of the Interior's Standards* and *NPS Cultural Resource Management Guideline (DO-28).* The following treatment recommendation are intended to build upon these general guidelines by defining a treatment approach for the landscape that will enhance its historic character and preserve character-defining features.

REVIEW OF PRIOR PLANS FOR THE LANDSCAPE

Treatment of the Battery Weed landscape is framed by a number of park planning documents, the earliest of which is the 1979 *General Management Plan for Gateway National Recreation Area.* This document did not specify a treatment approach for the landscape, but provided broad recommendations for Fort Wadsworth including a recommendation for more detailed site planning upon its anticipated transfer from the Department of Defense to the National Park Service. The General Management Plan included sections on environmental and planning influences, management of natural and cultural resources, visitor use and development, and design and use concepts. In the plan, Battery Weed was identified as a part of a so-called Gateway Village management area to be studied to determine the best mix of preservation, adaptive restoration, and new construction. The plan also suggested that Battery Weed could be adapted for visitor uses or administrative purposes, although the primary consideration for the structure was to be the retention of its historic appearance and integrity.[4]

The 1995 *Draft Site Management Plan/Environmental Assessment, Fort Wadsworth* was intended to serve as a twenty-year management policy and guidance document at the time of the site's transfer to the National Park Service. The plan provided two alternatives for site management that built upon the direction of the 1979 General Management Plan, with a comparative analysis of the potential effects on the site and neighboring communities. Alternative 1, the park's preferred alternative that was accepted in the final record of decision, emphasizes future management of Fort Wadsworth as a cultural resource. Although Gateway was identified and established as a recreational park system, the 1995 report recognizes the need "to improve interpretation, and educational programs, make more of the site available to visitors, and preserve and protect the [cultural] resources."[5] The plan called for visitor tours of Battery Weed, recommending that it be rehabilitated to interpret its use during the turn of the century, including use of period-costumed interpreters, installation of reproduction armaments, and interpretation of the moat and guardhouse. Battery Catlin was also recommended for rehabilitation for interpretive purposes.[6]

Other reports and plans have been developed addressing vegetation and interpretation issues at the Battery Weed headland. In 1995, the Nation Park Service Olmsted Center for Landscape Preservation completed a report entitled "Woody Plant Inventory for Fort Wadsworth," which included identification of management issues and recommendations. The Olmsted Center developed a subsequent report entitled "Vegetation Management Alternatives and Maintenance Guidelines," which provided additional detail on management strategies.

Another planning document that informs treatment of the Battery Weed landscape is the "Long-Range Interpretive Plan for the Staten Island Unit" (LRIP), developed by park staff from workshops conducted by between 2000 and 2004. The LRIP addressed interpretive themes from the 1995 Draft Site Management Plan, examined issues and influences affecting interpretation, and addressed programming, safety, research, and collections. The LRIP proposed three interpretive themes including: 1. The Wonders, Dynamics and Challenges of an Urban Estuary; 2. Fighters and Falcons, Monarchs and Missiles: A Heritage of Flight; and, 3. From Colonial Outpost to World Power: The Changing Nature of National Defense.[7]

Current planning efforts anticipate the development of a new General Management Plan for Gateway National Recreation Area that will supersede the 1979 General Management Plan. It will become the primary planning document for Fort Wadsworth and the Battery Weed headland over the next two to three decades. Completion of the updated General Management Plan is not expected for another five years. Given this, this treatment plan refers to the 1995 Draft Site Management Plan as the most current planning document for the Battery Weed headland. The general recommendations outlined in this report also attempt to anticipate future management issues pertinent to the preservation of the historic landscape based on construction projects presently in the planning phase and discussions with park staff on current maintenance and use.

The proposed construction projects at the Battery Weed headland include PMIS 16634: Rehabilitation of Battery Weed Seawall and Dock; PMIS 47261: Replace Roof Historic Torpedo Magazine (Torpedo Storage Building); PMIS 114176: Replacement Windows & Doors for Historic Torpedo Magazine; and PMIS 134585: Stabilize Battery Weed Seawall and Walkway to Provide Visitor Access. Other projects include PMIS 16639: Rehabilitate Torpedo Building into Visitor Use Facility; PMIS 47251: Manage Vegetation at Endicott-Era Batteries; and PMIS 11410: Reproduce 10 Cannons & Carriages for Exhibit at Battery Weed.

Following the recommendations in the 1995 Draft Site Management Plan, the park has undertaken several implementation/preconstruction planning studies. Most are related to the proposed dock and seawall rehabilitation project. Studies completed to date include "Pier Seawall Evaluation and Ferry Feasibility Study, Fort Wadsworth, Staten Island, New York" (Langan Engineering and Environmental Services, 1995). This study documented the history and existing conditions of the seawall and dock, identified structural deficiencies, prepared recommendations for repairs, and assessed the feasibility of introducing ferry use. "National Parks of New York Harbor Waterborne Transportation Study, Draft Final Report" (Volpe National Transportation Systems Center, 2001) identified the north dock as a potential transportation resource for Gateway National Recreation Area. Two studies addressed potential archeological impacts from the dock and seawall project. These include "Pre-Disturbance Clearance Report Battery Weed Dock Rehabilitation, Battery Weed Seawall Repair, Gateway National Recreation Area" (David Conlin, Franklin Price and Ken Hanaki, 2005) and "Phase 1A Archeological Investigation, Rehabilitation Battery Weed Seawall and Dock" (Ingrid Wuebber and Edward Morin, URS Corporation, 2006).

RECOMMENDED TREATMENT APPROACH

As summarized above, previous planning reports including the 1979 General Management Plan and the 1995 Draft Site Management Plan do not prescribe a specific treatment approach for the landscape of the Battery Weed headland. However, in keeping with the general management approach of the plans, it is the recommendation of this CLR that *Rehabilitation* be the primary treatment to allow the park to meet objectives to both preserve and enhance the property for public visitation. *Rehabilitation* is one of four treatment standards identified in *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (the other three being Preservation, Restoration, and Reconstruction). The intent of this recommended primary treatment for the landscape as defined by the Secretary of the Interior is to "... [make] possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values."[8]

Rehabilitation as the primary treatment does not preclude application of the other standards on a feature-level basis. Preservation should be the baseline treatment for all landscape features, including buildings and structures. In addition to Preservation, Rehabilitation could include resurfacing of park roads to improve accessibility, restoration of the partially ruined Mine Casemate, reconstruction of lost cable tank buildings, or addition of new facilities such as

restrooms or a transportation shelter provided they are designed in a manner that is compatible with the historic character of the landscape. These treatment concepts are defined within the ten standards for Rehabilitation:

1. *A property will be used as it was historically or be given a new use that requires minimal change to its distinctive features, spaces, and spatial relationships.*
2. *The historic character of a property will be retained and preserved. The removal of distinctive materials or alterations of features, spaces, and spatial relationships that characterize a property will be avoided.*
3. *Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.*
4. *Changes to a property that have acquired historic significance in their own right shall be retained and preserved.*
5. *Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.*
6. *Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture and where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.*
7. *Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.*
8. *Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures shall be undertaken.*
9. *New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property and its environment.*
10. *New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*[9]

Treatment Date

The year 1945 provides an appropriate benchmark for treatment of the landscape of the Battery Weed headland. It represents the end of the period of active military use and is consistent with the end of the period of significance recommended in the Draft Site Management Plan. [10] By 1945, all of the military development had taken place, with contributing features from the Third System

period through the Endicott period and World War II remaining in the landscape, although many of the guns had been removed. While there was apparently no new construction at Battery Weed during World War II, home front activities there and elsewhere at Fort Wadsworth played a significant role in the war as they did at other Gateway sites such as Fort Tilden and Floyd Bennett Field.

By managing the landscape character that the site had attained through 1945, the landscape can convey the many changes it had accrued over nearly one hundred years of military development and use. Treatment of the landscape to a 1945 benchmark would allow for interpretation of the entire historic period, including interpretation of the turn of the twentieth century as recommended in the Draft Site Management Plan. Landscape features added after 1945 do not warrant the same treatment because there is no documented significance to that period in the history of Battery Weed. After 1945, although Battery Weed remained under military jurisdiction, the site was no longer actively used in coastal defense and was largely abandoned. With the exception of a command center located at Fort Wadsworth, later defense systems that had been developed such as the NIKE missiles of the 1950s and 1960s were not located at the Staten Island site.

The goal of the following treatment recommendations is to retain the character-defining features that contribute to the historic character of the site as it had developed through the end of World War II at the recommended end of the period of significance. Remnant features lost since 1945, such as the concrete footings of the mine defense cable tanks outside the west wall of Battery Weed, should be preserved as they exist, although reconstruction of the features would be appropriate in the context of the cultural landscape if adequate documentation is available.

Given the inherently dynamic quality of vegetation and other natural systems, this treatment approach does not intend to freeze the landscape at its condition in 1945. Post 1945 changes such as the maturation of trees and the weathering of materials may be helpful in conveying the later history of the landscape and in providing a sense of time passage that can give added perspective for visitors today. Later changes may also have other values for wildlife habitat or park operations. Appropriate treatment of non-historic features will depend on whether they are compatible with the historic character of the landscape and do not obscure or alter historic features.

GENERAL TREATMENT RECOMMENDATIONS

The following section provides recommendations that apply to the Battery Weed headland overall rather than to specific landscape features. These recommendations also address issues pertaining to balancing historic preservation with other park resource values. Many of these issues are being addressed, or will be addressed, in the planning studies for the proposed projects at the Battery Weed headland, including the rehabilitation of the Torpedo Storage Building and the seawall and dock, and vegetation management on the batteries.

NATURAL AND CULTURAL RESOURCE VALUES

One of the most pressing treatment issues for the Battery Weed headland is the extent to which invasive vegetation and successional woods are diminishing the historic character of the landscape, as well as the integrity of historic buildings and structures. Finding a balance between cultural and natural resources will require thoughtful consideration by park planners. Under the accepted preferred alternative, the Draft Site Management Plan recommended emphasizing cultural resource values in this area of Fort Wadsworth, given the historic significance of the area.[11] This management decision should be taken into consideration when there appear to be conflicts between natural and cultural resource treatment in the Battery Weed headland.

Coming to a sustainable balance would be aided through updating and expanding the 1995 "Vegetation Management Alternatives and Maintenance Guidelines" based on the findings of this report. These guidelines identified critical areas for cultural and natural resource protection and enhancement. To enhance historic character, removal of successional woods should be prioritized where those woods obscure or damage cultural landscape features, notably the view from the overlook, the open space of the slope, the batteries, and historic circulation and buildings.

The open ground of the Battery Weed headland was historically mown grasses, but by the treatment period in 1945, may have also included a mix of low shrubs for aerial concealment purposes.[12] Possible plant materials that could be used to reestablish the historic open spatial character of the landscape while retaining or enhancing natural resource values may include low maintenance perennial native grasses such as switch grass (*Panicum virgatum*), an alternative warm season bunchgrass that spreads by short rhizomes. Switch grass grows four to six feet tall, but can be kept low by mowing once in mid-summer and once in late fall. It is a very good competitor to invasive species once established, and in

addition, provides excellent food and cover for visiting meadow birds. Non-invasive plants including clusters of low-growing native shrubs that are easily maintained and attractive to migrating birds and butterflies may be an appropriate cover in select areas. A periodic cutting or mowing to limit the height of the woody vegetation may be necessary in order to retain views and open spaces. Areas that were historically well-tended lawn, such as the parade ground within Battery Weed and areas along the roads and surrounding buildings, should be kept as mown lawn.

Removal of the invasive vine, porcelain berry (*Ampelopsis brevipedunculata)* and successional woods from the slopes and batteries requires careful planning to avoid damage to cultural features, prevent reoccurrence, prevent erosion, and ensure sustainable maintenance. As the park has done successfully in the past with Battery Duane, introduced goats may be an effective method for eradicating the vine and other vegetation. An incremental method of rotational eradication is recommended where goats would consume the herbaceous material as well as some of the woody vegetation. Eradication of the porcelain berry should be followed by the establishment of a mixed grass and low shrub cover as described above (see also Appendix C: Invasive Vine Eradication Methods for OS-Task 1).

PUBLIC ACCESS IMPROVEMENTS

In planning to improve the currently limited visitor access to the Battery Weed headland, the park should emphasize retaining, enhancing, and reintroducing the historic circulation patterns and features. Aside from its historic military features, one of the greatest assets of the Battery Weed headland is its spectacular natural setting, which could be readily accessible to the public via land and water to other city and national parks in and near New York Harbor. Although visitors are permitted at the overlook, access to the fortress grounds and waterfront is restricted for several reasons. These include lack of available staffing, unsafe structures and deep water off the dock and seawall, and lack of universal accessibility including a long and circuitous route from the overlook.

Once the park addresses the issues that are limiting public access to the headland, closed-off and abandoned circulation features should be reestablished. These would include not only historic military circulation features, but also the informal circulation used historically by the visiting public. These features, including roads, slope walks, the mine railway, dock access, waterfront promenade along the moat, and overlook promenade, should form the basis for any circulation improvements. Emphasis should be placed on retaining or reintroducing the historic alignment and surfaces. If new circulation

features are necessary, they should be distinguishable from the historic features but be compatible in location, design, and materials.

DESIGN OF VISITOR AMENITIES

Once public visitation to the Battery Weed headland increases, additional visitor amenities such as toilets, benches, signs, lights, and garbage cans may become necessary. In order to minimize impacts on the historic character of the Battery Weed headland, general design guidelines should be implemented to ensure introduction of compatible, but distinguishable, contemporary elements into the landscape. These guidelines should be adopted throughout the Fort Wadsworth historic area to reflect the historic integration of the Battery Weed headland. Any new elements should be related to existing historic character in terms of design, materials, and color. These new features should be inconspicuous in the landscape and be reduced to the minimum necessary for visitor use to avoid clutter. Where possible, visitor amenities such as restrooms and interpretive displays should be incorporated within existing historic buildings, or in reconstruction of buildings that have been lost since 1945. Features that confuse historic development patterns should also be avoided, such as the introduction of ornate Victorian-style benches or lights that never existed on the site.

LANDSCAPE INTERPRETATION

Educational programming such as interpretive exhibits of landscape features will contribute to the quality of the visitor experience and to public understanding and appreciation of the historical significance of the Battery Weed headland. Interpretation at present is limited to waysides about the dock, Torpedo Storage Building, Battery Weed, Fort Tompkins, the Verrazano-Narrows Bridge, the defense of New York Harbor, and the location of Fort Wadsworth. Interpretation of the historic landscape is minimal at present.

Public understanding of the Battery Weed headland could be greatly enhanced by improving interpretation of the mining defense system that was one of the chief innovations of the Endicott period. This guideline should be incorporated into the proposed construction projects that may affect mining defense complex features, such as the rehabilitation of the north dock and the Torpedo Storage Building. Many features are either obscured or not accessible and do not read as an interconnected system. Interpretation should focus on providing the public with an understanding of the infrastructure and operation of the system. This may be accomplished through revealing and marking remnants, by reconstruction of lost features, and by creating an interpretive display on the

entire system that could be installed within a rehabilitated Torpedo Storage Building, or within the first or second mine casemates.

Other layers of cultural meaning of the Battery Weed headland revealed through this report should also find a place in its interpretation. This includes the history of recreational use of the landscape; its position at the gateway to America as experienced by countless immigrants; and the landscape's cultural representation through the arts and literature. Interpretive displays or walks appropriately sited to highlight these themes would enrich the visitor experience and understanding of the cultural landscape. As discussed under visitor amenities, interpretive displays should be designed in an inconspicuous manner to avoid impacting the historic character of the landscape. Site signage and interpretive waysides should be minimized in favor of hand-held brochures, electronic guides, or a keyed system linked to a central interpretive display.

PRESERVATION OF EXISTING FEATURES

As stated under the general treatment approach, preservation should be the baseline treatment for all existing historic features and remnants (archeological landscape features). Priority should be given to maintaining existing features over new construction. Features currently suffering deterioration, such as the concrete block garage with a failed roof, should be stabilized in order to halt deterioration and allow for future repair. Preservation and maintenance will allow for future interpretation and possible alternative treatments. If funding, programming, and documentation permit, it may be appropriate to reconstruct missing features that existed in 1945.

NARRATIVE TREATMENT GUIDELINES AND TASKS (DRAWING 7)

As discussed under the framework for treatment, these recommendations are intended as a management guide toward the goal of enhancing the historic character of the landscape as it existed through 1945. This section provides a discussion of the specific treatment tasks organized by three character areas: the overlook and slope, the fortress grounds, and the dock and seawall. These tasks focus on enhancing spatial organization, circulation, vegetation, buildings and structures, views and vistas, and small-scale features. Within the character areas, treatment tasks are listed in order of priority. All treatment tasks are referenced on the treatment plan (Drawing 7).

OVERLOOK AND SLOPE (OS)

Overview

The overlook and slope encompass the area between Battery Weed Road and Hudson Road that forms the topographic transition from the shoreline and lower terrace to the upper terrace at Fort Tompkins. Historically, the overlook and slope were spatially open without any woods and only a limited number of roadside specimen trees. This area served as visual backdrop to Battery Weed from the harbor, and from the overlook permitted panoramic views across the harbor. Walks constructed across the slope in c.1892 connected the lower and upper forts until c.1938 when the overlook stone wall cut off access. The treatment objectives for the overlook and slope are to reestablish the historic open spatial quality, panoramic views along the length of Hudson Road, and circulation patterns, and to enhance the historic character of the overlook terrace.

OS-Task 1: Remove Invasive and Successional Vegetation

- Natural Systems and Features: NS-1 Successional Woods and Vines (Non-contributing)
- Spatial Organization: SO-3 Overlook Space (Contributing)
- Buildings and Structures: BS-11 Overlook Concrete Structure (Unevaluated), BS-14 Slope Retaining Wall (Contributing), BS-15 Coincidence Range-Finder Station (Contributing)
- Views and Vistas: VV-1 Overlook View (Contributing)

Removal of the invasive vine, porcelain berry, *Ampelopsis brevipedunculata*, and successional woods from the slope is necessary to reestablish the full breadth of the panoramic views from the overlook as well as the open spatial character of the slope. This treatment should be carried out along the entire length of the slope from Battery Weed Road up to Hudson Road.

Porcelain berry grows vigorously and covers a wide area of the slope. Because it grows from a central root system, it is relatively easy to treat with an herbicide. Once the woody plant material is removed, an incremental method of rotational eradication in sections, using introduced goats in fenced areas to consume the herbaceous material, replanting a native grass species, and annual or biennial mowing is recommended. (Figure 4.1) See detailed method for eradication and replanting in Appendix C.

Once the invasive vegetation has been removed, establish a low maintenance perennial native grass such as switch grass (*Panicum virgatum)* by planting two-inch plugs across the recovered area. Switch grass is an alternative warm season bunchgrass that spreads by short rhizomes and grows four to six feet tall l, and is

a very good competitor to invasives once established. In addition, switch grass provides excellent food and cover for wildlife. The grass can be kept low by mowing once in mid-summer and once in late fall. Erosion control fabric should be used on steep areas while the grass is being established. In areas that will not obstruct historic views or the overall open spatial character such as the lower and western edges of the slope, it may be appropriate to establish clusters of low-growing native shrubs if necessary for other park management purposes such as natural resource enhancement. Appropriate plants include sumac (*Rhus copallina, R. aromatica)*, and bayberry *(Myrica pensylvanica)*.

OS-Task 2: Reestablish Slope Walks

- Natural Systems and Features: NS-1 Successional Woods and Vines (Non-contributing)
- Circulation: C-3 Overlook Promenade (Contributing), C-4 Slope Walks
- Topography: T-1 Engineered Slope (Contributing)
- Buildings and Structures: BS-10 Overlook Stone Wall (Contributing)

The slope walks were a distinctive part of the Battery Weed landscape in 1945, although not actively in use at the time because the stone wall completed in c.1938 along the overlook blocked access. The slope walks should be revealed and restored to enhance the historic character of the landscape. It is also recommended if feasible that the walks be reopened for contemporary circulation purposes to reestablish the long-standing pedestrian link between Battery Weed and Fort Tompkins. Access to these walks, once restored with the vegetation removed and the views reestablished, would provide visitors with a dramatic approach to Battery Weed. These walks would not provide universal access due to the steepness of the slope (approximately twelve percent).

Sections of the walks have been lost in the eroded area of the slope above the Torpedo Storage Building. To determine their condition, the dense successional vegetation should first be removed. Depending on the degree of deterioration, archeological investigation may be necessary to determine the historic surface treatment. The slope walks should be repaired and missing sections reconstructed. Areas with especially steep cross-slopes appear to have been built with concrete edging or low concrete walls. The most appropriate surface material for the walks would be the historic material, probably gravel, or a material with a similar appearance if necessary to ease maintenance and improve durability. If railings are necessary, they should be simple black pipe railing or similar design that recedes in the landscape. Two openings would be required through the stone wall along the overlook to allow access to the slope walks. These openings should be simple cuts in the stone wall so that they read as contemporary modifications. The lower course of stone in the ground plane should be left in place to indicate that a section of the wall has been removed.

OS-Task 3: Enhance the Overlook Terrace

Related Task: OS-1

- Circulation: C-3 Overlook Promenade (Contributing)
- Topography: T-1 Engineered Slope (Contributing)
- Buildings and Structures: BS-10 Overlook Stone Wall (Contributing)
- Small Scale Features: SS-2 Overlook Telescopic Viewing Stations (Non-contributing), SS-3 Overlook Flagpole (Non-contributing), SS-4 Overlook Gun (Non-contributing), SS-8 Park Benches (Non-contributing), SS-9 Interpretive Waysides (Non-contributing)

At the end of the historic period, in 1945, the overlook terrace was a gently sloping grassy strip between Hudson Road and the stone wall along the crest of the slope above Battery Weed with a widened area for parking along the east side of Hudson Road at both the north and south ends of Fort Tompkins. Twelve trees were planted along the overlook walk between the two parking areas, and although access was cut off to the slope walks, they remained clearly inscribed in the landscape. There are two recommended treatment alternatives for the overlook terrace:

Alternative 1: Retain overlook terrace in its existing configuration dating to redesign completed in c.1995. Relocate existing gun close to the historic position (Figure 4.2, see also see Drawing 2) and orient toward historic line of fire once obscuring successional woods are removed (OS-1). Provide interpretation that discusses the changing appearance of the overlook.

Alternative 2 (see Drawing 8 inset): Redesign the overlook to recapture some of the historic character and enhance interpretation of its historic use and development. Remove much of the concrete in the plaza on axis with Tompkins Road and narrow Hudson Road to avoid the location of the c.1895 gun emplacements. Grade an area of gently sloping earth in a low berm above stone wall and plant with closely mown lawn as a reference to the earthwork (covered way) and grassy area that existed here through c.1873-1908 (Figure 4.3). Add low-growing native shrubs along the road edge. Provide park benches along the west edge overlooking Battery Weed and the Narrows. This redesign will allow visitors to sit on park benches or on the lawn overlooking the fort and the activities on the bay as was done historically (see Figure 4.2). Interpret the historic location of the c.1895-c.1908 gun mounts with a granite paving surface treatment, and install telescopic viewing stations at these locations with interpretive displays highlighting the historic military objectives and resulting military developments across the Narrows. Include in this interpretation waysides that illustrate the approach to the Narrows from the south, and the range of fire relationships to Sandy Hook, Fort Hamilton, the former Fort LaFayette, and reference to Castle Williams, Castle Clinton and other forts of

New York Harbor. Waysides should also interpret the history and role of the communications through a relay system between Sandy Hook and Manhattan made possible by the high elevation of the landform and the semaphore system that was in use during the nineteenth century.

Under both alternatives for the overlook terrace, the row of sycamore trees (*Platanus occidentalis*) that existed along Hudson Road in 1945 should be reestablished. One tree presently remains.

OS-Task 4: Reveal Coincidence Range-Finder (CRF) Station

- Natural Systems and Features: NS-1 Successional Woods and Vines (Non-contributing)
- Buildings and Structures: BS-15 Coincidence Range-Finder Station (Contributing)
- Topography: T-1 Engineered Slope (Contributing)

The recommended treatment for the c.1917 Coincidence Range-Finder (CRF) Station, aside from stabilization and repair, is to remove the encroaching vegetation that presently conceals the building from view. Some excavation of the slope around the building may be necessary to return the historic grade. Missing components of the building should be reestablished if feasible, or they may be interpreted through other means. This building, one of the only features dating to World War I, could provide a key interpretive feature to illustrate changing defense technologies of the early twentieth century.

FORTRESS GROUNDS (FG)

Overview

The fortress grounds encompass the area on the lower terrace from the east wall of Battery Weed to the west edge of Battery Weed Road including the parade ground, Torpedo Storage Building, Battery Catlin, and Battery Bacon. Historically, the fortress grounds outside of Battery Weed were spatially open with the exception of a cluster of buildings and structures that comprised the mine defense complex. During the historic period, the fortress grounds were an integral part of the larger military landscape with many carefully engineered, interrelated components. Treatment objectives include the reestablishment of historic open spatial character; revealing of building and structure remnants or their reconstruction if feasible, and restoration of historic circulation patterns, particularly those related to the mine defense system. This system, including the many buildings and ancillary structures such as the mine railway and cable tanks, offers the potential to give visitors to Battery Weed a unique understanding of the history of this complex underwater defense system. Lost features associated with the mine defense, such as the foundations of the cable

tanks and alignment of the rail system, should be interpreted, or if funds and documentation allow, reconstructed.

FG-Task 1: Remove Invasive Vegetation and Successional Plants from Batteries

Related Tasks: OS-1, FG-2

- Natural Systems and Features: NS-1 Successional Woods and Vines (Non-contributing)
- Circulation: C-6 Mine Railway (Contributing), C-7 Dock Road (Contributing)
- Topography: T-2 Battery Catlin Earthworks (Contributing), T-3 Battery Bacon Earthworks (Contributing)

The treatment as outlined in *PMIS 47251 Manage Vegetation at Endicott-Era Batteries*, is removal of successional woods and the invasive vine, porcelain berry (*Ampelopsis brevipedunculata)*, from the batteries and adjoining areas of the fortress grounds. Porcelain berry grows vigorously and covers a wide area from a central root system, and thus is relatively easy to treat with an herbicide once cut. Once the woody plant material is removed, an incremental method of rotational eradication in sections, using introduced goats in fenced areas to consume the herbaceous material, planting a native grass species, and annual or biennial mowing is recommended. (Figure 4.3) (See detailed method for eradication and replanting in Appendix C.) Not only is the use of introduced goats to eradicate invasive vegetation a highly effective methodology, historic precedent exists for goats at the landscape of Battery Weed as noted in the site history of this report.

Once the non-historic and invasive vegetation has been removed, establish a low maintenance perennial native grass such as Switch Grass (*Panicum virgatum)* by planting two-inch plugs across the recovered areas. Switchgrass is a warm season bunchgrass that spreads by short rhizomes and grows four to six feet tall and should be mowed twice each year in spring and fall. It is a very good competitor to invasives once established, and in addition, provides excellent food and cover for wildlife. Erosion control fabric should be used on sloping areas while the grass is being established. Maintenance of low-growing native shrubs may be appropriate if they do not conflict with views and the historically open spatial character.

FG-Task 2: Restore Mine Railway Circulation Pattern

- Natural Systems and Features: NS-1 Successional Woods and Vines (Non-contributing)
- Circulation: C-6 Mine Railway (Contributing), C-1 Battery Weed Road, C-7 Dock Road (Contributing)
- Vegetation: V-1 Parade Ground lawn (Contributing)

- Buildings and Structures: BS-1 Battery Weed (Contributing), BS-3 Torpedo Storage Building (Contributing)
- Small Scale Features: Chain-Link Fencing (Non-contributing)

In order to interpret the mining defense complex as recommended under the general treatment guidelines, the mining railway circulation pattern as it existed in its final 1921 realignment should be reestablished in the landscape. All existing sections that are either buried or covered with vegetation should be revealed. For missing sections, archeology should be conducted to determine extent and condition of any remnants, particularly around the south end of Battery Catlin to the dock road, between the north dock and Battery Weed, and into the parade ground of Battery Weed. Depending on the results of the archeology, there are two alternative treatments for missing sections. A combination of these two alternatives may also be appropriate.

1. Reconstruct missing sections of the mine railway, based on historic documentation and on existing intact sections.
2. Interpret the alignment of missing sections of the mine railway using design elements to stitch together the entire system. This could be done by using elements such as a paving material, vertical stakes, or a depression along the historic alignment.

Chain-link and other fencing that blocks the mine railway should be removed once safety concerns are addressed. If it is necessary to restrict vehicular access, consideration should be given to installing inconspicuous features, such as bollards or narrow post-and-chain fencing.

FG-Task 3: Rehabilitate Torpedo Storage Building

Related Task: FG-1, FG-2

- Natural Systems and Features: NS-1 Successional Woods and Vines (Non-contributing)
- Buildings and Structures: BS-3 Torpedo Storage Building (Contributing)
- Circulation: C-6 Mine Railway (Contributing)
- Small Scale Features: SS-1 Chain-Link Fence (Non-contributing)

Rehabilitation of the Torpedo Storage Building is the recommended treatment as outlined in PMIS 47261 Replace Roof, Historic Torpedo Magazine, PMIS 16639 Rehabilitate Torpedo Building into Visitor Use Facility, and PMIS 114176 Replacement of all windows & doors for Historic Torpedo Magazine [sic]. Returning this existing shell to its historic exterior appearance will greatly enhance the historic character of the landscape. Rehabilitation should also preserve and reconstruct the historic circulation of the mine railway, which extended through the building.

FG-Task 4: Reestablish Dock Road

- Circulation: C-7 Dock Road (Contributing), C-6 Mine Railway (Contributing)
- Small Scale Features: SS-1 Chain-Link Fencing (Non-contributing)

Regrade and resurface the dock road from the juncture of Battery Weed Road to the north dock along the east side of Battery Catlin. Use an asphalt-like porous paving material to retain historic character and minimize surface runoff. The adjoining spur road that extended along the east side of Battery Catlin should also be reconstructed, although further research is needed to determine its alignment beyond the CLR project area. The level area at the intersection of the dock road and spur could provide space for a small parking area or turn-around (e.g., for park electric tram service) if necessary if the dock is returned to active transportation uses. Any new circulation features in this area should be built with a contemporary but compatible surface and alignment, and should also allow the historic alignments of the dock road and spur to remain visible in the landscape.

FG-Task 5: Reconstruct the Second Mine Casemate

Related Tasks: FG-1, FG-2

- Natural Systems and Features: NS-1 Successional Woods and Vines (Non-contributing)
- Buildings and Structures: BS-7 Second Mine Casemate (Contributing), BS-8 Battery Catlin Parados (Contributing)
- Topography: T-2 Battery Catlin Earthworks (Contributing)
- Small Scale Features: SS-1 Chain Link Fencing (Non-contributing)

Restoration of the second mine casemate, including its roof and windows, should be undertaken to return a character-defining feature to the landscape and to enhance interpretation of the mine defense system. The existing structure should be immediately stabilized and encroaching vegetation removed to prevent further deterioration. Pedestrian circulation should either be reestablished or introduced between the mine casemate and Battery Weed Road. Further investigation is necessary to determine if a walk existed here historically. This access should also provide connection to the adjoining parados, which if opened to the public could provide a key interpretive element of the pre-Endicott era. Once the mine casemate is restored, the surrounding chain-link fence should be removed.

NORTH DOCK AND SEAWALL (NDS)

Overview

The north dock and seawall encompasses the area along the waterfront of the Narrows including the north dock, the former moat, seawall, and beach. This

part of the landscape historically featured panoramic views of the New York Harbor, as it does today although it is not accessible to the public. Both the north dock and seawall were easily accessible by the dock road and water routes. Treatment objectives for the north dock and seawall are the repair of structures, reestablishment of historic circulation features, and interpretation of lost features, notably the moat and features associated with the mine defense system. Where historic structures, such as the remnants of the timber extension of the north dock, require removal or alteration as part of rehabilitation, the entire feature should be documented according to HABS/HAER/HALS standards prior to disturbance.[13] New construction should follow the footprint of historic features and be designed in a manner that is compatible with the historic character of the landscape in materials and massing.

An engineering assessment should be conducted to determine possible impacts of projected sea level rise to the landscape, including the seawall, filled moat, and north dock. For information on projected sea-level changes, see Pendleton Theiler, and Williams, "Coastal Vulnerability Assessment of Gateway National Recreation Area (GATE) to Sea-Level Rise" (Unpublished report prepared for the National Park Service, 2004).

NDS-Task 1: Rehabilitate Granite Seawall and Dock

Related Task: FG-5

Buildings and Structures: BS-6 North Dock (Contributing), BS-2 Granite Seawall (Contributing)

Circulation: C-5 Waterfront Promenade (Contributing), C-6 Mine Railway (Contributing)

Small-Scale Features: SS-11 Dock Bollards (Contributing)

As outlined in *PMIS 16634 Rehabilitate Battery Weed Seawall & Dock*, the recommended treatment is *Rehabilitation* with repair of the unstable and collapsed sections of the north dock and the entire seawall. Preservation of existing historic design and materials should be the primary objective. This should include circulation and small-scale features on the dock, notably the iron dock bollards, mine railway remnants, and granite-block pavement. Preliminary plans call for rehabilitation of the dock for water-taxi service to Fort Wadsworth. Since the existing dock is only a small part of the dock that existed in 1945, there is opportunity to accommodate new construction on the historic footprint, provided it follows the location, mass, and scale of the structures that existed at the dock in 1945. (Figure 4.4) The dock historically contained three buildings, the sites of which could be used for new construction housing passenger shelters and restrooms, or for interpretive displays. Reestablishing the historic massing of the dock would greatly enhance the historic character of the landscape.

Preservation and reconstruction should be the feature-level treatment for the seawall, reusing stone blocks retrieved from collapsed sections. At the north end of Battery Weed, the grade up to the seawall from the south should be reestablished and planted with turf grasses with the rocky beach on the north side of the seawall. Repairs to the seawall should include retention of the concrete seawall at the north end of the shoreline, which was probably built by the WPA in c.1938. If alteration of the granite seawall is warranted due to anticipated sea-level rises, further study should be undertaken to determine the impact of raising or extending the wall on the historic character of the landscape.

NDS-Task 2: Interpret the Moat

Related Task: NSD-1

- Spatial Organization: SO-2 Moat Space (Contributing)
- Circulation: C-5 Waterfront Promenade (Contributing)
- Views and Vistas: VV-2 Water-Level Views (Contributing)

The moat, in its presently filled condition, does not convey its distinctive role in the original design of Battery Weed. Although it was dewatered by c.1887 and partially filled by 1904, the fill was much lower than it is today, which allowed the moat to read as space and convey its original intent. Two alternatives are recommended for the interpretation of the moat:

1. As a contemporary interpretive intervention based on historic precedent, reestablish the former reservoir section of the moat at the southwest bastion of Battery Weed that was visible through c.1904 (it is unknown if the reservoir was covered, filled, or removed). Uncover or excavate the fill from the walled-in area, and reestablish as an open, water-filled feature. (Figure 4.5) This open reservoir would provide visitors with an understanding of the pre-1887 character of the moat. Interpretation should address the fact that the reservoir was not visible after c.1904.
2. Lower the grade of the filled moat on the north, south, and east sides to an elevation of three feet below the top of the seawall, corresponding to the moat's condition in 1945. The section adjoining the first mine casemate addition should not be lowered (the cable conduit runs through this section). Removing fill from the west side of the moat is not recommended because it would disturb remnants of mine defense buildings added beginning in c.1904. As an added interpretive element, install a shallow (twelve-inch deep) edgeless reflecting pool in a rectangular area at the southeast bastion of Battery Weed. This water-filled area will reflect the surrounding landscape and provide visitors with a sense of the pre-1887 water-filled condition. (Figure 4.6)

As part of both alternatives, the moat should be cleared of grasses, shrubs, and other successional vegetation to maintain the historic open space and well-maintained character. If it is feasible to allow public access to reestablish the waterfront promenade, the preferred treatment would be not to install a defined walk with a prepared surface. If such a walk is necessary for universal accessibility, then it should hug the seawall and not have a hard surface (see Figure 4.6). At the northwest bastion, a new alignment would have to be laid out to connect the walk with the dock road. If the reservoir is reconstructed as recommended under alternative 1, the walk would require realignment around the reservoir by crossing over the seawall. The crossing could be achieved through ramps or steps. The seawall should not be altered.

ENDNOTES

[1] Cultural landscape maintenance is typically addressed in a separate document known as a Preservation Maintenance Plan. Such a plan has not been completed for the Battery Weed headland.

[2] Legislation quoted in *Draft Site Management Plan Environmental Assessment Fort Wadsworth Gateway National Recreation Area New York/New Jersey* (U.S. Government Printing Office, NPS D-200, 1995), 1.

[3] Draft Site Management Plan, 67.

[4] National Park Service, *General Management Plan Gateway National Recreation Area–New York/New Jersey* (United States Department of the Interior, National Park Service, 1979), 101, 102.

[5] Draft Site Management Plan, 3.

[6] Draft Site Management Plan, 20, 23.

[7] National Park Service, "Gateway National Recreation Area Long Range Interpretive Plan for the Staten Island Unit" (Unpublished report prepared for the National Park Service, 2004).

[8] Charles A. Birnbaum and Christine Capella Peters, eds. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (Washington, D.C.: U.S. Department of the Interior. 1996), 48.

[9] Birnbaum and Capella Peters, 49.

[10] Draft Site Management Plan, 19.

[11] Draft Site Management Plan, 19, 25.

[12] Memorandum from the War Department, Office of the Chief of Coast Artillery, 30 April [c.1940], RG 177, Records of the Office of the Chief of Coast Artillery, Box 49, Folder 53521910, National Archives II, College Park, Maryland.

[13] HABS = Historic American Building Survey; HAER = Historic American Engineering Record; HALS = Historic American Landscape Survey.

Figure 4.1: OS-Task 1, FG-Task 1. Goats have been introduced in fenced areas and used successfully to consume invasive vegetation at Fort Wadsworth, as shown in these photos from "Green Goats.com," http://green-goats.com/ (accessed January 2008).

Figure 4.2: OS-Task 3, alternative 2. A c.1900 rendering providing precedent for redesign of the overlook terrace showing visitors taking in the view from the grassy slope. The gun is part of the earthwork that is not evident in this drawing. Image 19650, Gateway National Recreation Area Archives.

Figure 4.3: OS-Task 3, alternative 2. Rendering of overlook redesign proposed under task OS-3 alternative 2 showing introduction of a gently sloping earthen berm on the overlook terrace that will enhance views and recall the earthwork and grassy slope that existed here prior to c.1908. SUNY ESF

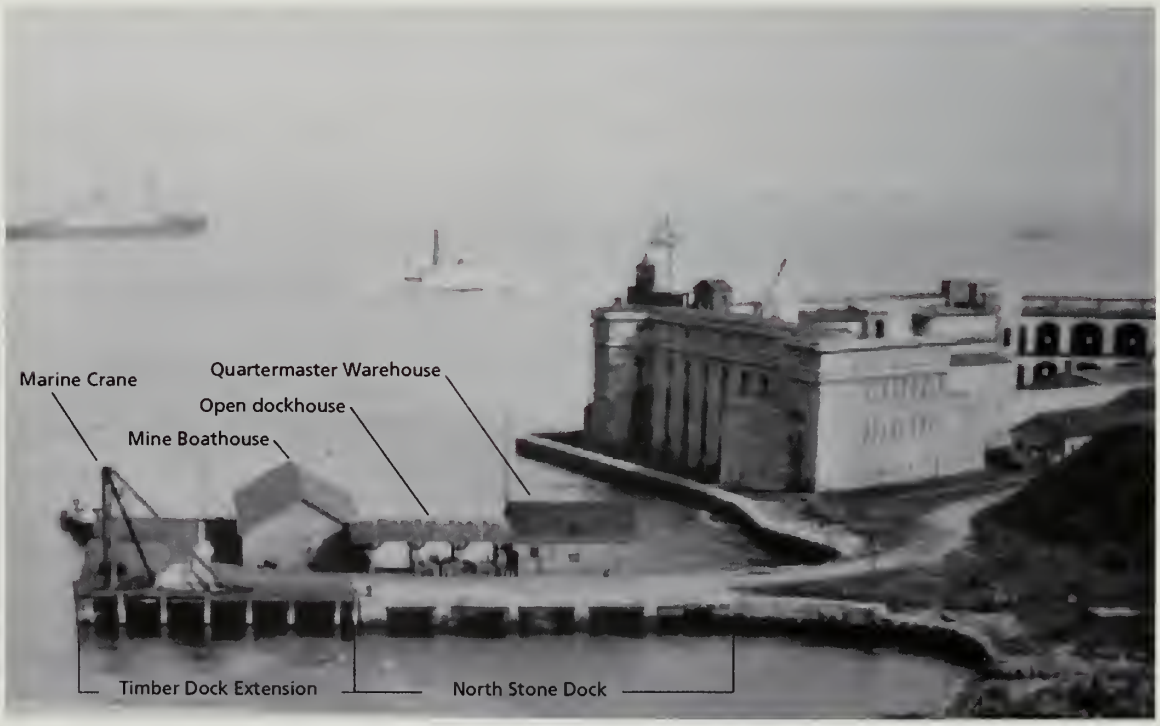


Figure 4.4: NDS-Task 1. This c.1907 photograph shows the timber dock extension to the north stone dock, the dock boathouse, open dock house, and quartermaster warehouse, that should be used to guide the location, design, mass and scale of any new structures at the north dock. Gateway National Recreation Area Archives, Photo Collection, Print #19427, c.1907, annotated by SUNY ESF.

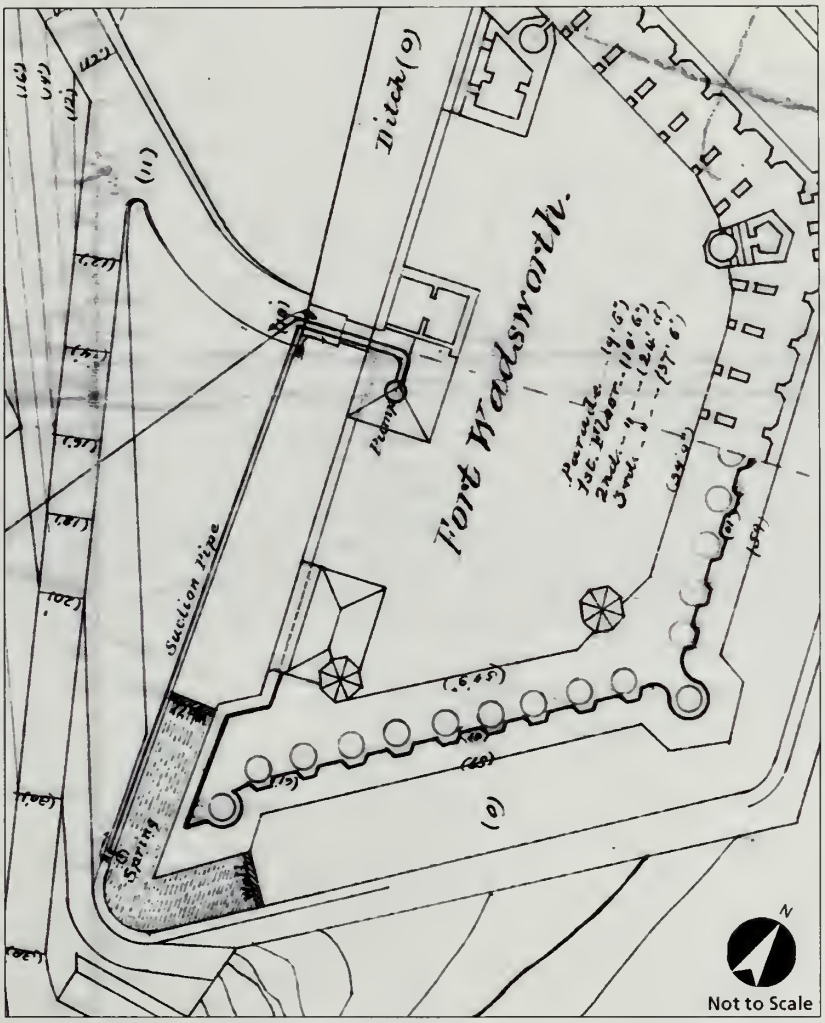
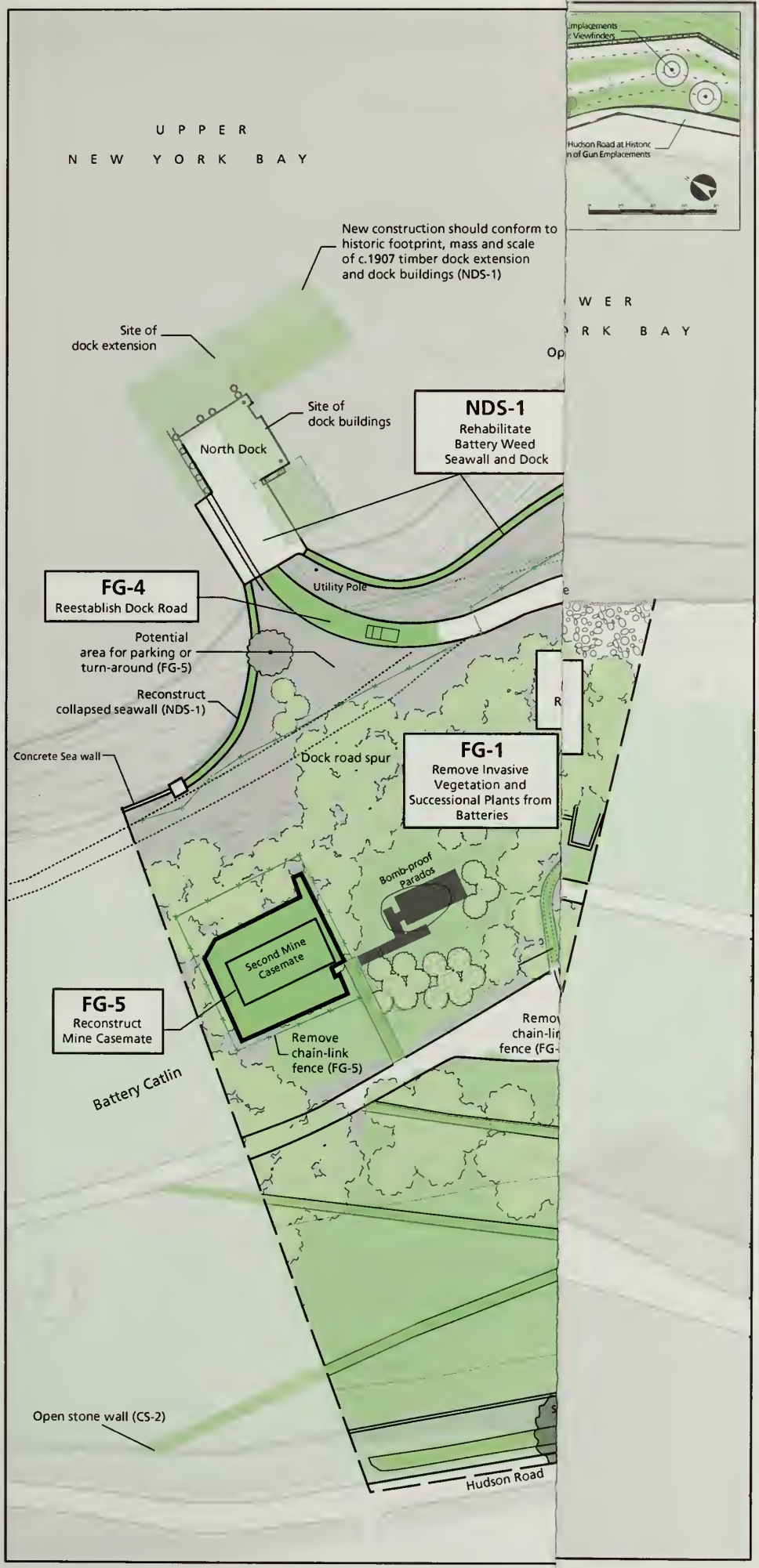


Figure 4.5: NDS-Task 3 (Alternative 1). This detail of an 1886 plan shows the spring-fed reservoir within the moat at southwest corner of the moat (at lower left of the fort) that would provide the historic precedent for reestablishing a section of watered moat for interpretive purposes. This water-filled section survived until c.1904 and possibly later. Note the "Suction Pipe" that carried water into the guardhouse pump at Battery Weed. National Archives Cartographic Division RG 77, Dr 41, Sheet A, annotated by SUNY ESF.

Figure 4.6: NDS-Task 3 (Alternative 2). Photo-simulation of contemporary interpretation of the water-filled moat along the south side of Battery Weed, with defined circulation along seawall. SUNY ESF.



Cultural Landscape Report for the Battery Weed Headland

Fort Wadsworth
Gateway National Recreation Area
Staten Island, New York

Treatment Plan

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

in partnership with:

Department of Landscape Architecture
SUNY College of Environmental Science and Forestry
Syracuse, New York

SOURCES

1. Aerial Photography, 2007 (USGS)
2. Vegetation Map, 1995 (NPS)
3. Field Survey, April 2007 (SUNY ESF)
4. Topographical Survey, 1985 (Ettlinger & Ettlinger P.C.)

DRAWN BY

Jean B. Gleisner, Illustrator CS3, 2008

LEGEND

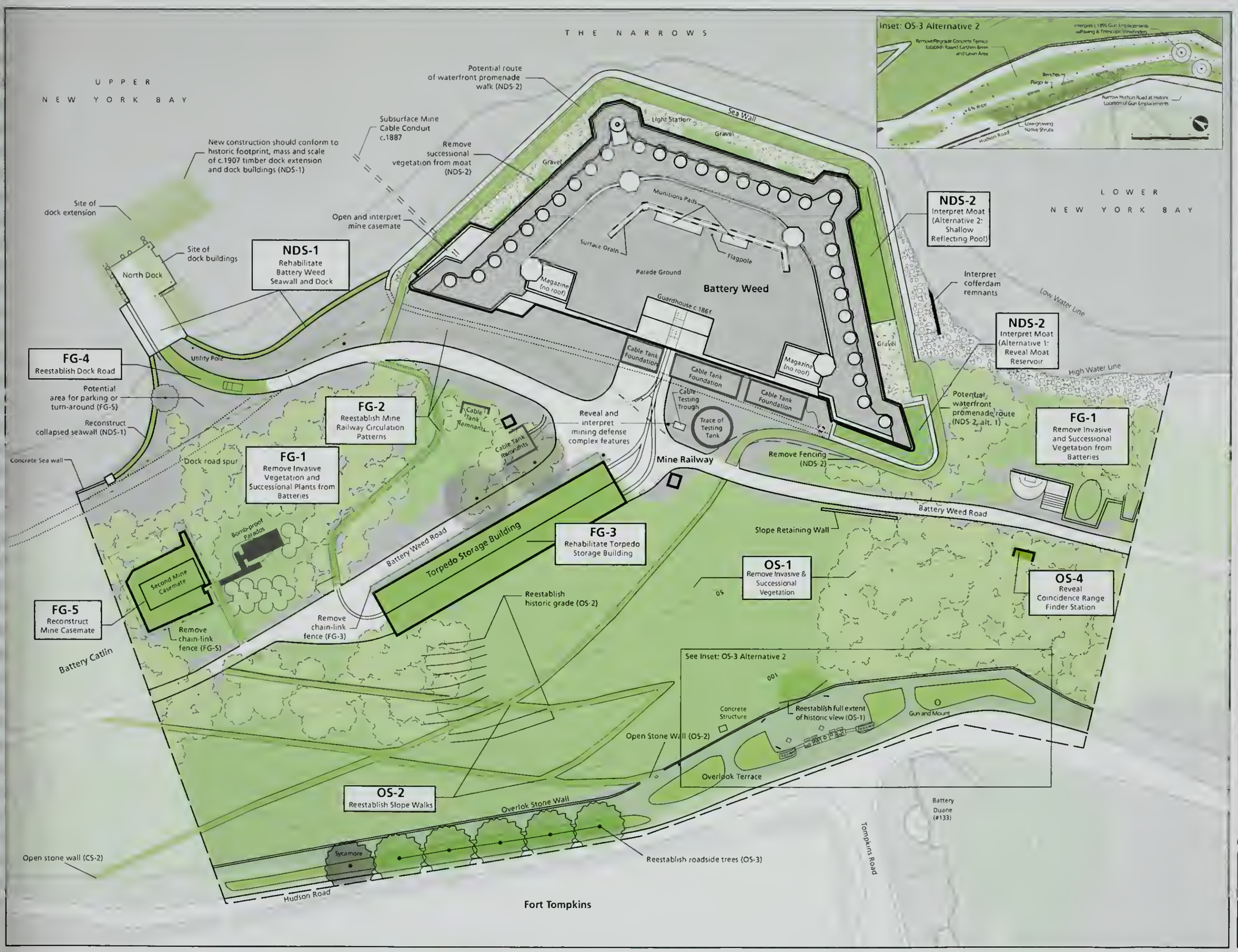
- Feature Requiring Treatment
- Assumed Feature
- 5' Contour
- Fencing
- Drainage Inlet
- Subsurface Structure/Foundation
- Building or structure
- Wall or Slope Path Edge
- Unpaved Road
- Paved Road
- Project area
- Mown Grass
- Successional Woods
- Rocky Beach

NOTES

Existing landscape not requiring treatment shown in grayscale
Treatment tasks identified by acronym keyed to text
Vegetation shown in approximate scale and location.
Areas outside the CLR treatment project area are ghosted.

0' 40' 80' 120' 160'

Drawing 7



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Staten Island Institute of Arts & Sciences, Staten Island, New York. Collections pertaining to Staten Island and Fort Wadsworth.

APPENDIX A

CHRONOLOGY OF THE BATTERY WEED HEADLAND

prehistory	Lenape people live on Staten Island
1524	Giovanni de Verrazano sails into the Narrows
1609	Henry Hudson names Staaten Eylandt (Island of the States) in honor of the States General of the Netherlands
1621 - 1664	Part of the Province of New Netherland/Dutch West India Company
1630	Staten Island granted to Michael Pauw by Dutch West India Company
1655	Peach War
1661 - 1662	First colonial agricultural settlement on Staten Island, Oude Dorpe, established
1664	King Charles II of England grants Staten Island lands to the Duke of York
1680s	Battery Weed headland assigned to ownership of F. Walton (not patented)
1683	Staten Island designated Richmond County
1711	Plan approved for a system of signal guns and fire beacons to be developed in several locations at the Narrows including Staten Island
1712	First ferry charter between Manhattan and Staten Island
c.1750 - 1794	VanDeventer family maintains ownership of the headland, known as "Bluff Point" or "Van Deventer's Point"
1754	Colony of New York proposal for batteries on Staten Island (not implemented)
1755	Colonial legislation authorizes payment to carry to the site two guns along with tar barrels and posts for beacons
1776 – 1783	British occupy Battery Weed headland during the Revolutionary War. British harvest mature trees. Signal Hill established (land title remained with Van Deventer)
1779	British defenses by this time at Van Deventer's Point included earthen batteries, redoubt, 26 gun platform, and hot-shot furnace
1782	British construct four-bastion fort and several barbette batteries at/near Van Deventer's Point
1794	State of New York acquires 24 ½ acres from Ann Jacobsen and Catherine Van Deventer
1794 - 1807	Federal government begins First American System of Coastal Fortifications
1800	Population of Staten Island is 4,564
1807	Growing British hostility
1807 – 1817	Second American System of Coastal Fortifications is established
1808	Army Engineer Jonathan Williams develops plan for fortification at the Narrows
1809	New York State acquires twenty-two additional acres near Van Deventer's Point from John Jacobsen including farm house, barn, and road
1810	Water Battery-Fort Richmond, Second System Fortress, completed
1812	War of 1812, state and federal governments authorize telegraph observatories and signal poles
1814	Construction of 2nd System Fort Tompkins substantially begun, Fort Richmond serves as a checkpoint for all vessels entering or leaving New York Harbor
1816	Fortifications at the Narrows largely abandoned by the state due to lack of funds
1817 – 1861	The federal government institutes the Third American System of Coastal Fortifications

1820 – 1845	Unresolved negotiations between the state and federal governments over ownership of the fortifications at the Narrows
1828	Fort Tompkins Light near state fortifications at the Narrows.
1839	Herman Melville writes about the landscape of the Narrows in his novel *Redburn*
1840	New York City becomes busiest port in U.S.
1847	Conveyance of land at the Narrows from New York State to the federal government Construction of Fort Richmond begins
1848	Slope sustaining wall constructed
1852	West wall of moat completed
1854	5.2 acre parcel purchased by federal government from Peter Jacobsen on west side of fortifications
1855	Cofferdam completed
1856	17 acre strip parcel along New York Avenue purchased by federal government from William Aspinwell
1857	Congress appropriates $150,000 for reconstruction of Fort Tompkins
1858	North stone dock completed
1859	Construction begins on the new Fort Tompkins; an inclined railway is built from the north stone dock to the top of the bluff in order to transport materials up to the Fort Tompkins construction site.
1860	Two story guardhouse w/drawbridge built on the west face of Battery Weed. Hourly ferry service from Manhattan instituted
1861	5th Regiment New York Volunteer Artillery garrisoned at Forts Tompkins & Richmond
1862	Construction of North and South Cliff Batteries is begun
1864	Fort Richmond completed (except for seawall/moat) at a cost of $750,000.00,; number of troops at the post peaks at 1,921; many wooden support buildings constructed
1865	War Department changes name of Fort Richmond to Fort Wadsworth.
1867	Many temporary wartime buildings demolished
1870	Around this time, macadam is added to roadways at Fort Wadsworth
1871	Seawall and moat around Fort Wadsworth completed
1871 - 1875	South and North Cliff Batteries and Hudson Battery are modernized.
1873	Ground surrounding Fort Wadsworth including glacis, slopes, and batteries graded and seeded; draining and filling of swamp at foot of glacis at New York Avenue
1876	Second Fort Tompkins completed
1877	Boathouse constructed on north stone dock
1880	Rail service established from St. George to South Beach, runs past military reservation
1884	Forty-one troops stationed at Fort Wadsworth
1885	President Cleveland establishes Endicott Board to study coastal defense improvements; earthen berm constructed at top of slope along present Hudson Road; begins Endicott Era in coastal fortifications that extends to World War I
1886	Moat dewatered and reservoir constructed at southwest corner; Staten Island Rapid Transit Railroad Company founded.

1887	Northwest bastion of Battery Weed is converted to a mining casemate and first mine tracks completed.
1889	Cable tank #2 is built; Staten Island linked to New Jersey by a railroad bridge
1890	Around this time, Fort Wadsworth (Battery Weed) used for storage of munitions from Ellis Island
1892	By this time, tennis courts exist at Fort Tompkins
1892 – 1894	Mine storage building constructed west of Battery Weed
1892 - 1901	141 acres purchased in ten parcels from various owners to the south and west by the federal government expanding the Fort Wadsworth reservation from 90 to 226 acres
1892 – 1902	Fog signal installed on northeast corner of Fort Wadsworth (Battery Weed) seawall
1895 - 1904	Six new batteries constructed for higher-powered artillery South and North Cliff and Hudson Batteries equipped with modern guns
1896	Population of Staten Island over 60,000
1898	Spanish-American War begins; Staten Island becomes a borough of Greater New York City; Cable tank #1 is constructed
1899	Battery Bacon reconstructed from north end of South Cliff Battery
1901	Army Corps of Engineers transfers mining complex to Coast Artillery Corps
1902	Fort Wadsworth renamed Battery Weed; entire U. S. military reservation renamed Fort Wadsworth
1902 - 1903	Combined fog signal and lighthouse constructed on barbette of Battery Weed's northeast bastion
1902 - 1904	Battery Catlin reconstructed from North Cliff Battery
1904	West side of moat filled in around this time; two three-inch rapid fire guns mounted at Battery Bacon
1905	Second mine casemate constructed at Battery Catlin; cable tanks #4, 5, and 6 constructed outside west wall of Battery Weed
1906	Around this time, a timber addition constructed on north stone dock along with extension of the mine railway
1907	Around this time, a mine boathouse and open dock house are constructed on the north stone dock and its timber addition.
1910	Mine tracks realigned
1913	Six three-inch rapid fire guns mounted at Battery Catlin. Timber addition to dock destroyed by steamer "Hamilton" collision
1916 – 1918	1,400 troops garrisoned at Fort Wadsworth
1917	Around this time, a coincidence range finder station built on the slope above Battery Bacon
1918	Battery Bacon taken out of service
1919	Command shifts from Coast Artillery Coprs to the infantry
1920	Four anti-aircraft guns emplaced at Fort Wadsworth
1921	Mine tracks realigned
1926	The first commercial airport on Staten Island is founded
1927	Only fourteen enlisted men on post

1928	First automobile bridge, the George W. Goethals Bridge, constructed over the Arthur Kill to Elizabeth City, New Jersey; Outerbridge Crossing opens between Port Richmond and Bayonne, New Jersey
1931	Bayonne Bridge opens
1934	All Staten Island trolley lines replaced with bus service
1935	Civilian Conservation Corps (390 Veterans Co.) and Works Progress Administration-funded laborers begin work at Fort Wadsworth; construct part of seawall and undertake limited forestry work; probably also construct overlook wall.
1941	Fort Wadsworth returned to the Coast Artillery Corp
1940 - 1944	Anti-submarine net (series of subsurface mines) planned across the Narrows
1942	Battery Catlin taken out of service
1942 – 1945	Harbor Entrance Control Post (HECP) command center established at Fort Wadsworth
1944 - 1945	Fort Wadsworth houses a service unit of Italian prisoners of war
1948	Trailer camp developed for military housing at Fort Wadsworth
1952	Korean War anti-aircraft unit assigned to Fort Wadsworth
1955	Around this time, Nike Surface-to-Air Missile Command center established at Fort Wadsworth
1959	Construction of Verrazano-Narrows Bridge begins; buildings in Fort Wadsworth demolished along approaches.
1960	Hurricane Donna, 70 mph winds, 4.6" rain, high water 1' above seawall. Probably damages north dock and buildings in the headland. All wood-frame buildings on the headland, including the mine defense buildings along the west side of Battery Weed and buildings on the north dock, are removed.
1964	Verrazano-Narrows Bridge opens.
1972	Battery Weed listed in the National Register of Historic Places
1972	Department of Defense identifies Fort Wadsworth as surplus property to be transferred to newly established Gateway National Recreation Area at a future date
1979	US Navy takes over Fort Wadsworth from the Army as headquarters of New York Naval Station
1983	US Navy begins extensive redevelopment of Fort Wadsworth.
1985	Around this time, the Torpedo Storage Building is heavily damaged by fire.
1994	New York Naval Station at Fort Wadsworth is decommissioned
1995	National Parks Service assumes jurisdiction of Fort Wadsworth, including the Battery Weed headland.

APPENDIX B

MILITARY TERMINOLOGY

Barbette: An earthen terrace or platform situated inside the parapet or a rampart, upon which cannon were mounted so that they could be fired over a wall rather than through a gun port. A battery in this situation is called a "battery en barbe" (or barbet). (L. barba, beard). Also Barbe, Barbet, Barquette.

Bastion: A work consisting of two faces and two flanks, all of the angles being salient. A curtain connects two bastions. Viewed from the interior of the fort the bastion is divided at the salient creating a right face/flank and a left face/flank.2

Battery: A work consisting of an epaulment or breastwork which was used to protect a gun or mortar emplacement.

Block house: A fortification used for seaward defense provided with; shot deflecting battlements, hand gun ports and a single embrasure for a long range cannon, used during the 16th century.

Casemate: (1) A chamber within a tower used to house artillery away from the elements such as catapults, Greek from the 4th century BC. (2) A gallery which was built at the base of a fortifications wall from which defenders could fire into the faces of surface miners and battering ram parties. (3) A well having a number of underground branches which can be extended to intercept enemy mines. (4) A magazine for storage of explosives. (5) A place for quartering troops. (F. casemate, fr. It. casamatta, prob. from casa house + matto, f. matta, mad, weak, feeble, dim. from the same source as E. -mate in checkmate). Also Casement, Cazemate, Cazematte. Also, simply, the interior gun chamber behind a fort wall. The gun is fired through a protected opening in the wall (casement). Casemates protect the guns and gunners and allow a fort's guns to be arranged in multiple levels. This type of fortification feature was developed during the Second American System from 1794-1807 (e.g. Castle Williams, New York, and was used extensively in Third American System forts from 1817-1867 (e.g. Fort Carroll, Baltimore, MD).

Emplacement: A location on which an artillery piece is positioned. In order to mount a gun either a platform or a traverse and pintle is constructed.

Escarpment: The foreground of a fortification, which was excavated precipitously to hinder an enemy's approach.

Glacis: (1) The area outside the fort structure which was scarped into a gentle slope running downwards, kept deliberately free of any form of cover. The glacis brought an approaching assailing force into clear view from the parapet of a fortification under attack. See declivity. (2) The masonry sloped scarp of a curtain wall, a design which was developed to offset the effect of artillery fire.

Magazine: A storehouse for munitions.

Parados: Raised earth behind a rear trench wall used to help diffuse the shock of explosives behind the line or fort; a magazine.

Parapet: (1) The top of a wall of either a fortification or fieldwork, either plain or battlemented. Used to provide protection to the defenders behind the wall. See battlement, crenel, embrasure, merlon, reveal. (2) A breastwork or wall used to protect the defenders on the ramparts of a fortification, either plain or provided with embrasures.

Pintle: The pin on which a gun carriage revolves.1 Postern: A small secondary entrance, sometimes concealed, and usually at the rear of a castle. Used as a sally port for sorties, and as a route of escape.

Ravelin: A detached triangular outwork with two embankments raised before the counterscarp, the work itself was isolated in the ditch of moat. One purpose of the ravelin was to shield the entrance to a fortification from direct bombardment. The ravelin was accessible either by a drawbridge if it formed a part of the road system of a fortification, or if only part of the defence works access was by a tunnel or timber bridge from the inner works. A demilune (a work in the shape of a halfmoon was used to defend the entrance of a fortification), later developed into a detached work called a ravelin, which was situated within the line of the main ditch and was formed by two faces meeting in an outward angle, its purpose was mainly to cover the curtain it fronted and to prevent the flanks from being attacked from the side.

Redan or Reden: (1) A field work consisting of two faces and an open gorge. (2) A triangular work situated forward of the main fortification, consisting of two faces and an open gorge, like but larger than a fléche. Used to fortify walls when the necessity and expense of constructing bastions was required. A system of fortifications using redans produced a series of serrations, the distance between the redans should not exceed the length of musket shot, so that fire from the faces of a redan will be able to the salients of the neighbouring redans.

Redoubt: A small fort of varying shape, usually of a temporary nature.2 Also, (1) A small work placed beyond the glacis, but within musket shot of the covert way, made in various forms, known as a detached redoubt. (2) A small work built in a bastion or ravelin of a permanent fortification. (3) An outwork or fieldwork, square or polygonal in shape without bastion or other flanking defences, sited at a distance from the main fortification, used to guard a pass or to impede the approach of an enemy force. Also Redout, Reduit.

Scarp, Counterscarp: The inner and outer sides of a ditch used in fortifications.

Terreplein: (1) The open country surrounding a field work. (2) The rear talus of a rampart. (3) The gun position on the top of a rampart located behind a parapet.

Traverse Circle: In gunnery, a circular plate of iron fastened to a bed of solid masonry or stone on which the traverse wheels that support the gun chassis roll.

Water Battery: A battery consisting of two or more guns that is nearly level with the water.

(Note: military personnel over the life of Battery Weed did not know the meanings of all of these terms. Contemporary usage is not always as precise as these definitions may imply. Consequently, the information on some historic maps and documents can be misleading.)

Source: Wyley, Stephen Francis. *Dictionary of Military Architecture, A Dictionary of Military Architecture, Fortification and Fieldworks from the Iron Age to the Eighteenth Century.* Online at http://militaryhistory.about.com/od/militaryterminology/.

APPENDIX C

INVASIVE VINE ERADICATION METHOD FOR OS-TASK 1

The invasive vine, porcelain berry, *Ampelopsis brevipedunculata* should be removed from the slope and batteries. An incremental method of rotational eradication in sections, using introduced goats in fenced areas to consume the herbaceous material, is recommended.

Step 1: Goats are to be introduced in Section A, where they consume nearly all of the herbaceous matter, and then are moved to Section B to remove all of the herbaceous material in that section.

Step 2: Once the goats have been moved out of Section A, the remaining herbaceous and woody material in that section should be cut to ground level and removed to a location where it can be disposed of safely by burning to prevent further spread of the vine in other locations.

Step 3: Ampelopsis grows vigorously and covers a wide area from a central root system, and therefore once cut, is relatively easy to treat with a systemic herbicide, which should be applied by brushing the liquid onto all cut root systems that remain in the ground. This will kill all of the established vines in Section A, however; soils where Ampelopsis has established contain a buried seed bank that can contain as many as 10,000 seeds per square meter. This buried seed bank must be dealt with to ensure that the porcelain berry does not reestablish.

Step 4: Once Section A has been cleared of all remaining plant material and the root stumps treated with a systemic herbicide such as Garlon 4 or Roundup, the remaining seeds buried in the soil in Section A should be allowed to sprout fully across the section. These new Ampelopsis plants, from the seed bank, can then be eradicated by returning the goats to section A to eat them before the plants can bare new seeds.

Step 5: Once the goats have been moved out of Section B, the remaining herbaceous and woody material in that section should be cut to ground level and removed to a location where it can be disposed of safely by burning to prevent further spread of the vine in other locations.

Step 6: A systemic herbicide should be applied by brushing the liquid onto all cut root systems that remain in the ground in Section B.

Step 7: Once Section B has been cleared of all remaining plant material and the root stumps treated with a systemic herbicide, the remaining seeds buried in the soil in Section B should be allowed to sprout fully across the section. These new *Ampelopsis* plants, from the seed bank, can then be eradicated by returning the goats to section B to eat them before the plants can bare new seeds.

Note: This rotational sprouting of the buried seeds, and consuming of the seedlings by goats, section by section, should be repeated until the *Ampelopsis* seed bank no longer produces a flush of new Ampelopsis seedlings. Depending on the extent of the seed bank, this may take three or more rotations for each section of the landscape.

Step 8: Once the *Ampelopsis* has been eradicated from a section, the root stumps within that section should be removed, the soil turned and raked smooth, and an erosion control blanket applied on any slope over 30 degrees.

Step 9: Establish a low maintenance perennial native grass such as Switch Grass, *Panicum vergatum* in each prepared section by planting 2 inch plugs of *Panicum vergatum* across the recovered areas. *Panicum vergatum* is a warm season bunchgrass that spreads by short rhizomes and grows 4 to 6 feet tall and can be mowed once each year in the fall. It is a very good competitor to invasives once established, and in addition, provides excellent food and cover for wildlife. Two inch plugs can be expected to fill an area approximately one meter square in two years.

Recommended native grasses for the shorefront areas include *Spartina pectinata, Spartina alternafolia,* and *Spartina Patens.* Recommended native shrubs that are easily maintained and will attract and support wildlife are low-growing sumac, *Rhus capalina* and *Rhus aromatica,* and Bayberry, *Myrica Pennsylvania.*

Pinelands Nursery is a good source for 2-inch plugs of native grasses.

Source: Interview by author with Donald Leopold, Distinguished Teaching Professor, State University College of Environmental Science and Forestry, Syracuse, New York.

APPENDIX D

REPOSITORIES CONSULTED AND RESULTS

Gateway National Recreation Area Archives, Staten Island, New York

Historic photographs, plans and documents pertaining to Battery Weed and Fort Wadsworth, although few historic images of the Battery Weed headland landscape. The collection included several historic plans and documents, annotated section drawings, and copies from the National Archives collection.

Harbor Defense Museum, Fort Hamilton, Brooklyn, New York

Drawings, a painting, plans, and texts related the defense of the Narrows, Staten Island, and Fort Wadsworth

National Archives (NARA I), Washington, DC

Record Group 159

Inspectors General

Office of the Inspector General (Army)

1813 – 1842 on microfilm in three volumes on microfilm were reviewed. No inspection reports for a fort on the west side of the narrows were discovered. Reference indexes indicated several collections of inspection reports generally organized in approximately ten series by date, although many entries overlapped. Inspection Reports for 1843 – 1890 were not listed in RG 159. The content of each series, some containing as many as 62 boxes of records, was not indexed to post names or even to states. Reports for New York posts were within the "Eastern Division" category, and 18 boxes were found in this division under Entry 9. Entry 3, Vols. 1 and 2, were also reviewed with no results. The books were organized by the name of the officer in charge at the time that made locating records for Fort Richmond or Fort Wadsworth time consuming. Entry 9, Boxes 18 and 19 did not contain records for Fort Wadsworth. Box 17 contained Inspection records made in late 1899 and reported in early 1900 for Fort Wadsworth. Future review of the remaining listings in the Army Dept. of the East, RG 159, Stack Area IIWI, (Boxes 28, 29, 43, 79, 80, 97, 109, 110, 114, 131, 136, 137, 151, and 154) may provide further insights into the evolution of the landscape at Battery Weed.

National Archives Records Administration (NARA II), College Park, Maryland

Cartographic Collection

Record Group 77

Fort Wadsworth, Staten Island NY

Defense of New York Harbor and Defense of the Narrows

Many oversize maps, charts, plans, and drawings were located pertaining to the Battery Weed site. Other records that should be reviewed in the future from the Cartographic Collection are: aerial photographs for Staten Island, RG 77 War Department Map Collection (no. 155 - New York Topographical Map 1912), and RG 77 Real Estate Division, Wadsworth, Fort, NY Land Purchases 1898, 1893, 1892, Site Plan 1910.

Photographic Collection

Record Group 92

SC 616994 contained several photos of Battery Weed, and Box 20, Series F contained one photo showing

Tompkins lighthouse from Fort Tompkins (92-F-72-1) and a view of the upper road and mowed grasses on bunkers (92-F-72-2).

New York Historical Society, Manhattan

New York Historical Society Library Collection included the notebooks of General Delofield, Engineer at Fort Wadsworth during the mid-nineteenth century, geological maps, etchings and photographic views of recreation and amusements on Staten Island.

New York Public Library, Manhattan

Humanities and Social Sciences Library
The Lionel Pincus and Princess Firyal Map Division
The collection provided several early maps of the New York Bay region and harbor entrance.

Irma and Paul Milstein Division of United States History,
Local History and Genealogy
This collection contained several early photographic views of the Narrows and the Fort Wadsworth site and would be worth revisiting in the future.

Staten Island Institute of Arts and Sciences (SIIAS), Staten Island

The SIIAS archives collection included many etchings and drawings depicting the Battery Weed headland and the Narrows from the mid to late 19th century as well as colonial land patents dating from the mid 17th century to the early 18th century. The SIIAS Museum collection included paintings, etchings and porcelain pieces featuring historic views of the Narrows and the Fort Wadsworth site as well as archeological and natural history collections.

United States Military Academy Library, West Point, New York

The collection contained several news articles and periodical publications with photos and text regarding Fort Wadsworth and Battery Weed.

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U.S. Department of the Interior

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