

Historical Research, Laser Scanning
and Archaeological Investigations
Blockhouse No. 1
Central Park, New York



Powder Magazine in C.P.

Prepared for:

Central Park Conservancy

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MANAGEMENT SUMMARY

This report presents the results of a program of historical research, laser scanning and archaeological investigation performed in 2017-18 for Blockhouse No. 1, a ruined masonry tower from the War of 1812 perched on the bluffs in the northwestern section of Central Park. This work was undertaken for the Central Park Conservancy in support of the ongoing development of plans for the stabilization, rehabilitation and interpretation of the blockhouse.

Blockhouse No. 1 is a unique and compelling survival of the defensive system hastily erected by the City of New York, the State of New York and the federal government as Manhattan Island and New York Harbor anticipated a possible combined naval and land attack by British forces in the late summer and early fall of 1814. The British assault on New York never materialized, however, and by early the following year the defenses were abandoned and in many instances disassembled. The blockhouse, largely because of its masonry character and its eventual incorporation within Central Park in the early 1860s, has remained standing to the present day. In the mid-19th century it was modified and served briefly as a magazine. After being absorbed into the park, the structure was rehabilitated between 1899 and 1903 as a landmark of historic architectural interest. Blockhouse No. 1 is designated as a National Historic Landmark and a New York City Scenic Landmark and is listed in the New York State and National Registers of Historic Places.

Drawing on the results of extensive primary archival research, this report traces the history of the blockhouse, erected in the fall of 1814, down to the present day and offers a detailed commentary and analysis of the building's origins, its use and various modifications implemented over the course of its more than two-century existence. The building's plan and exterior and interior elevations were digitally scanned in the spring of 2017, providing imagery that served as the basis for detailed, scaled drawings of the masonry fabric. This record will facilitate analysis of the original construction and alteration of the building and can inform its future architectural restoration. The report also summarizes two episodes of archaeological investigation conducted in 1995 and 2017. These explorations have shed light on the original construction of the blockhouse, documenting a foundation offset that supported the ground floor interior framing, a packed clay leveling deposit and an iron rod or anchor bolt set into the underlying schist which helped secure the blockhouse walls to the rock outcrop. Archaeological excavation in the southwest corner of the blockhouse interior also produced evidence of late 19th-century modifications that involved installation of a staircase leading up to an observation platform.

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The staffs of several archival repositories provided extraordinary assistance as we endeavored to track down relevant manuscript materials and maps. At the National Archives and Records Administration (NARA) in Washington D.C., we especially appreciated the help of Dorothy Alexander and Danielle Ireland of the Center for Legislative Archives and DeAnne Blanton of Archives I Reference Section in our delving into the Buell Collection and the Records of the Quartermaster General. At the NARA facility in College Park, Maryland, Brandi Oswald, Archivist, RDSC (Cartographic Branch) kindly located key map sources. The staff of the New-York Historical Society facilitated our access to records pertaining to Joseph Gardner Swift and we also received considerable assistance from research staff at the New York City Municipal Archives, the Manhattan Borough President's Office, the Avery Library at Columbia University and the Metropolitan Museum of Art (for access to the Herbert Mitchell Photograph Collection).

Thanks are offered to Jason Dixon and Daniel Hill of ESP Associates, P.A, for providing the laser scanning services. We gratefully acknowledge Columbia University, and in particular Pamela Jerome, formerly an Adjunct Professor in the Historic Preservation Program at the Graduate School of Architecture, Planning and Preservation, who coordinated the historical, architectural and archaeological research on the blockhouse by several students in 1995 and subsequent years. The archaeological work conducted in 2017 was subject to review by the New York City Landmarks Preservation Commission and we are grateful for the input and oversight of this agency's lead archaeologist, Amanda Sutphen.

With regard to Hunter Research staff involvement, the project was conducted under the overall direction of Richard Hunter, James Lee and Patrick Harshbarger. Historical research was largely undertaken by Patrick Harshbarger and Richard Hunter with assistance from Eryn Boyce. Archaeological fieldwork was performed by Michael Brown and Ilana Greenslade under the supervision of James Lee. Laboratory processing and cataloging of artifacts were performed by Joshua Butchko and Dorothy Both under the supervision of James Lee. Report graphics were produced by Michael Brown and Evan Mydlowski. Graphic design work, report layout and final editing were completed by Patricia Madrigal. This report was written by James Lee, Patrick Harshbarger and Richard Hunter.

Richard W. Hunter, Ph.D., RPA
Principal/President

Chapter 1

INTRODUCTION

A. PROJECT DESCRIPTION AND SCOPE-OF-WORK

This report presents the results of a range of historical researching, laser scanning and archaeological investigative services performed in 2017-18 for Blockhouse No. 1, a ruined masonry tower from the War of 1812 perched on the bluffs in the northwestern section of Central Park (Figures 1.1 and 1.2; Photograph 1.1). These services were provided by Hunter Research, Inc. to the Central Park Conservancy under two separate contracts executed in February and November of 2017. The work was undertaken in support of the ongoing development of plans for the stabilization, rehabilitation and interpretation of the blockhouse.

Blockhouse No. 1 is a unique and compelling survival of the defensive system hastily erected by the City of New York, the State of New York and the federal government as Manhattan Island and New York Harbor anticipated a possible combined naval and land attack by British forces in the late summer and early fall of 1814. The impetus for this episode of fortification building was the British sack and burning of Washington, D.C. on August 24 of that year. The British assault on New York never materialized, however, and by early the following year the defenses were abandoned and in many instances disassembled. The blockhouse, however, largely because of its masonry character and its eventual incorporation within Central Park in the early 1860s, has remained standing to the present day. In the mid-19th century it was modified and served briefly as a magazine. After being absorbed into the park, the structure was rehabilitated between 1899 and 1903 by the City of New York at the urging of the Women's Auxiliary to the American Scenic and Historic Preservation Society. Since that

time the blockhouse has existed as a landmark of historic architectural interest. Mostly neglected over the past century, it is currently closed to the public, its doorway secured by an iron grille.

Blockhouse No. 1 is an important contributing element within the designated historic resource that is Central Park. The park was designated a National Historic Landmark on May 23, 1963. It was listed in the National Register of Historic Places on October 15, 1966, designated a scenic landmark by the New York City Landmarks Preservation Commission on April 16, 1974 and entered into the New York State Register of Historic Places on June 23, 1980.

In February of 2017, Hunter Research was engaged by the Conservancy to carry out some carefully targeted historical and archival research on the blockhouse and to document the structure using the technique of laser scanning. The researching tasks involved: familiarization with previously gathered historical research data; searching for historic images (chiefly drawings and photographs) of the blockhouse and other structures of similar type and period; and systematic review of published and manuscript sources pertaining to the blockhouse, conducted at selected archival repositories. The program of laser scanning, implemented in late March and timed to take advantage of the absence of leaf cover on the trees, involved documenting the exterior and interior elevations and compiling a plan view of the blockhouse with a Leica P40 3D laser scanner. The laser scanning deliverables, which are selectively incorporated into Chapter 3 of the current report, included a 3D mesh textured with images and site video fly-through, elevation drawings and a topographic map. Laser scanning

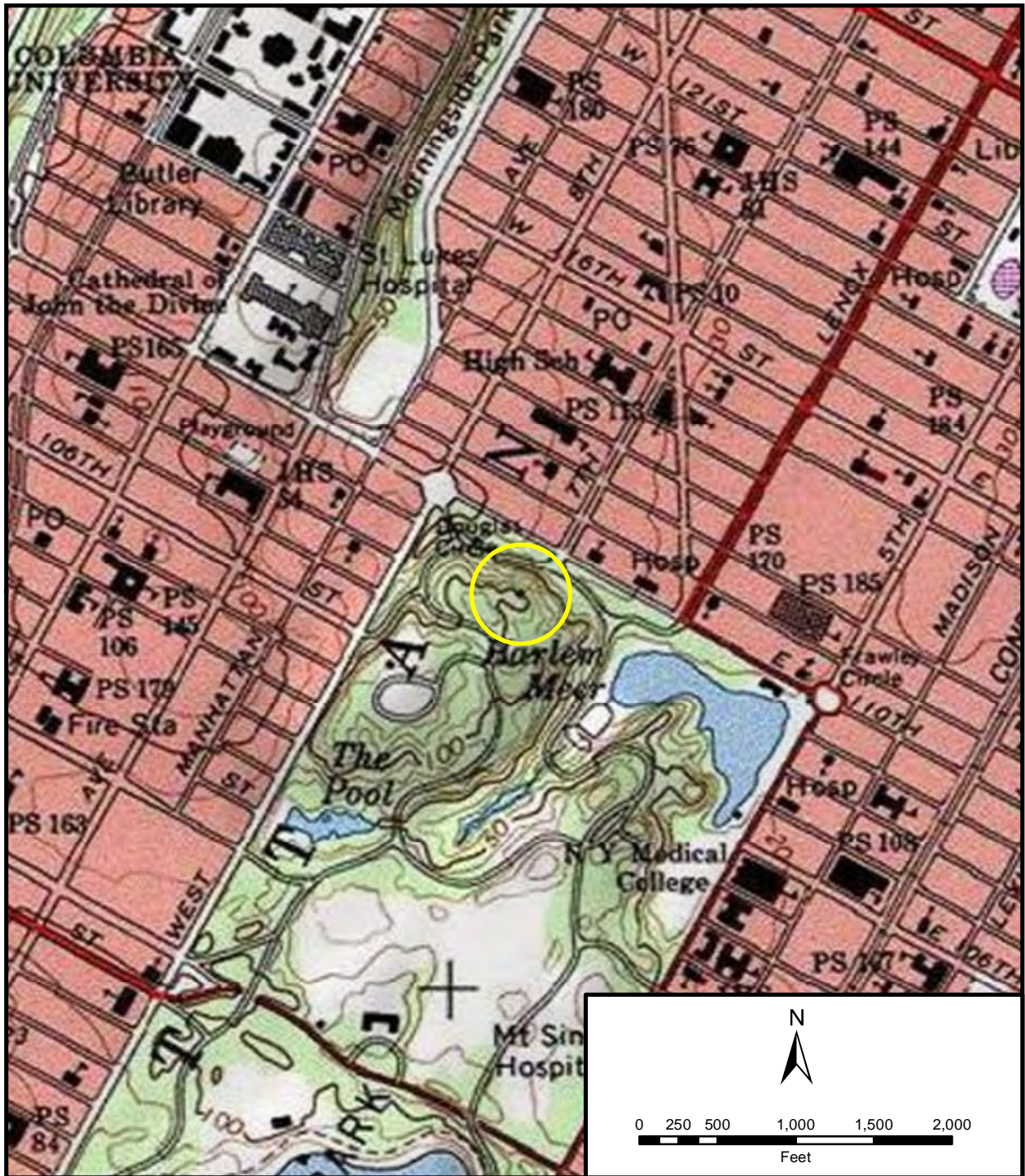


Figure 1.1. Location of Central Park Blockhouse No. 1. Source: 7.5' USGS Central Park, N.Y.-N.J. Quad-angle (1966 [photorevised 1979]). Scale: 1 inch = 2,000 feet.

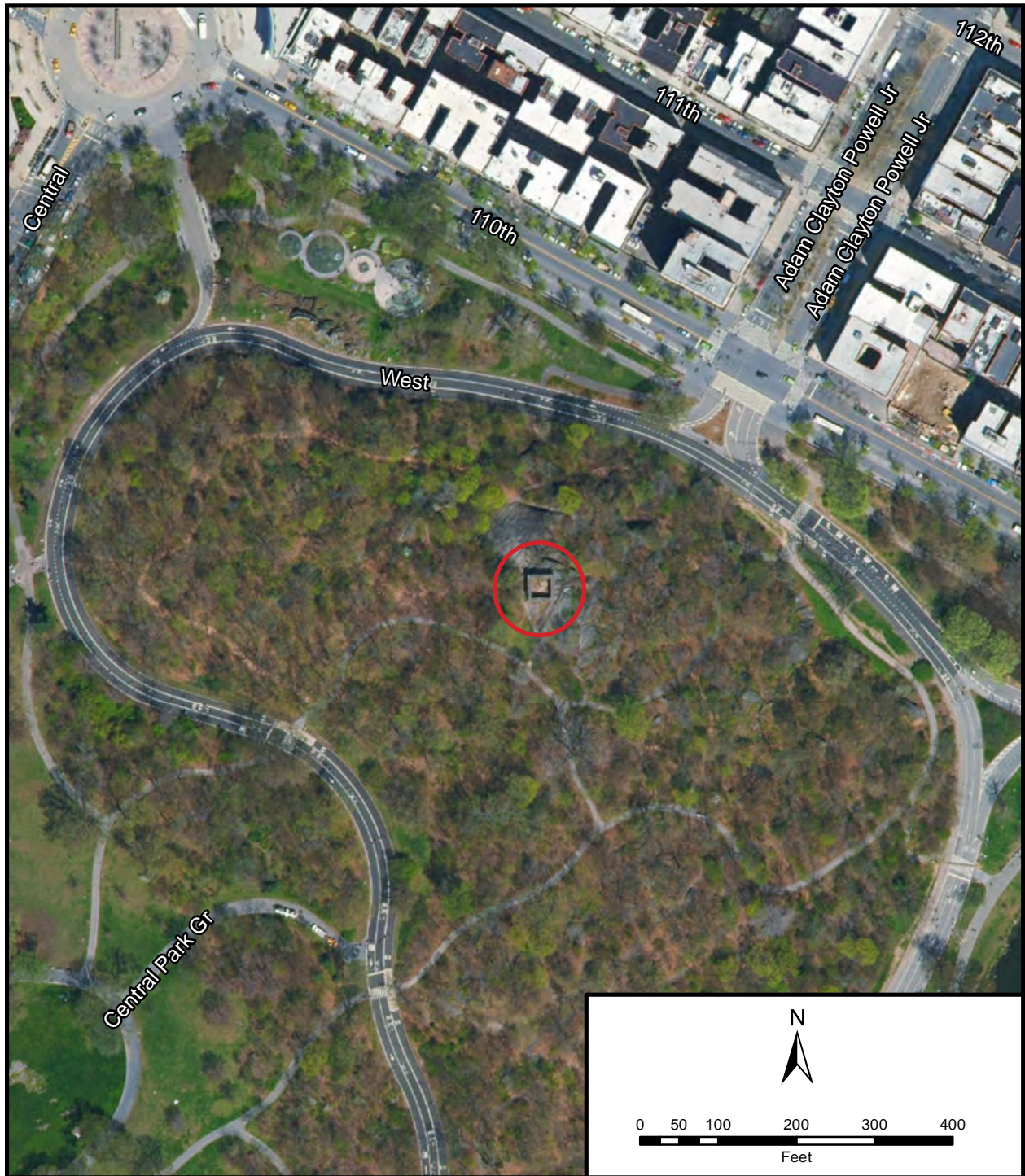


Figure 1.2. Aerial Photograph Showing the Location of the Central Park Blockhouse No. 1.



Photograph 1.1. Recent view of Blockhouse No. 1 looking northeast (Photographer: James Lee, March 2017 [HRI Neg.#17013/D1:014]).

services were supplied by ESP Associates, P.A., at the time of this study based in Charlotte, North Carolina, now headquartered in Fort Mill, South Carolina.

Archaeological investigations at Blockhouse No. 1 began with a review of research data, field documentation and artifacts gathered during a Columbia University research and field project undertaken in 1995. Most of this material, much of it generated by student assignments, was viewed at the Conservancy offices, while the artifacts were loaned to Hunter Research for re-analysis and formal cataloging. In early December of 2017, a 12-day program of archaeological field excavation was carried out within the interior of the blockhouse. The Columbia University excavations were re-opened and expanded, and two additional excavation units were dug, one in the northwest corner and the other along the north wall. The principal goal of this work was to clarify the construction history, below-ground construction details and overall architectural character of the blockhouse and, in particular, understand how, historically, access was gained into the interior of the structure (the current doorway being a later insertion). Fieldwork was followed by processing and analysis of field documentation and artifacts. In this instance, all archaeological work at Blockhouse No. 1 was conducted with the approval and under the general oversight of the New York City Landmarks Preservation Commission.

Originally, it had been intended that the two contracts for work on the blockhouse would result in separate written report documents, one addressing the results of the historical research and another summarizing the archaeological work, while the laser scanning deliverables were to be supplied both digitally and in hard copy, along with an accompanying memorandum. Upon reconsideration, it was agreed that a single report would be prepared combining all three work elements into a single document.

B. PREVIOUS RESEARCH AND PRESERVATION HISTORY

Blockhouse No. 1 is the earliest of only two pre-park buildings still standing in Central Park (the other is the Arsenal, built in 1848). It effectively entered the realm of antiquarian interest in the mid- to late 1850s around the time of the park's creation and toward the end of the structure's period of use by the City of New York as a magazine for storing gunpowder. Likely even before this time, there was some local sensitivity to the future historical importance of this War of 1812 survival as the city spread inexorably northward across Manhattan Island, but its recognition as a significant historic monument is still far from fully realized. In 1858, the decision was made to expand the park northward from 106th to 110th Street, thus encompassing an additional 65 acres that contained a substantial portion of the former line of Revolutionary War and War of 1812 fortifications ranged along the bluffs overlooking Harlem Creek. This extension was formalized in 1863, prompting the development of landscape designs that would incorporate its rugged terrain into the rest of the park. As the most complete structure associated with the War of 1812 fortifications, the blockhouse featured as a landmark of interest and a prominent anchor in the park's designed network of paths and drives (see below, Figures 2.20 and 2.21).

However, once stripped of its role as a magazine (probably in the later 1860s), and despite the landscape designs for the northern extension of the park, the blockhouse structure itself devolved into a picturesque ruin over the course of the 1870s and 1880s. It finally became the focus of rehabilitation as a historic site around the turn of the 20th century, largely at the urging of the American Scenic and Historic Preservation Society. In 1899, the blockhouse was described as much neglected and filled with trash and closed up, but a movement was then underway seeking to interest the City in its preservation (*Annual*

Report of the Society for the Preservation of Scenic and Historic Places and Objects 1899:10). By 1903, the building had been repaired and rehabilitated by the City's Department of Parks and a new stairway and viewing platform had been installed (see below, Figure 2.23). Along with its preservation, the historical significance of the blockhouse began to be more fully appreciated, stimulated in part by the research and writings of Edward Hagaman Hall, a prominent journalist and Secretary of the American Scenic and Historic Preservation Society (Women's Auxiliary to the American Scenic and Historic Preservation Society 1904; *Tenth Annual Report, 1905, of the American Scenic and Historic Preservation Society* 1905:34; Hall 1905:34-35, 1911:423-424; New York Preservation Archive Project 2016).

Following this first burst of preservation activity which converted the blockhouse into a viewing station in the northern end of the park, the City's Department of Parks minimally maintained the building over the following decades. The structure was documented by the Historic American Buildings Survey in 1936 (see below, Figure 2.24). This task was completed as part of a Works Progress Administration project that also addressed Blockhouse No. 2 (historically, Blockhouse No. 4) in Morningside Park (Historic American Buildings Survey 1936). However, the condition of Blockhouse No. 1 gradually deteriorated over the course of the 20th century and appreciation of its historical importance likewise withered. Indeed, when the New York City Landmarks Preservation Commission designated Central Park as a scenic landmark in 1974, the accompanying documentation remained entirely silent about the blockhouse and the pre-park military fortifications in the northern end of the park (New York City Landmarks Preservation Commission 1974). The same was the case a year later when the National Park Service formalized the 1963 designation of the park as a National Historic

Landmark with the completion of documentation in support of its listing in the National Register of Historic Places (Heintzelman 1975).

With the creation of the Central Park Conservancy in 1980, the northern end of the park finally received renewed attention and became the subject of a number of capital improvement projects. As a result the blockhouse also became the subject of increased preservation scrutiny and concern. During the 1980s, as the Conservancy developed a management plan for the park, elements of its pre-park history were recognized as important and recommendations were made for treatment and limited interpretation of the blockhouse (Rogers *et al.* 1987:88, 90, 94-95). However, the structure – indeed, all of the fortifications in the northern end of the park – still merited no mention in the standard history of the park, *The Park and the People: A History of Central Park*, published in the early 1990s (Rosenzweig and Blackmar 1992).

In 1990, the first systematic assessment of pre-park historic and archaeological resources was completed for the northern end of the park above the 97th Street Transverse. As part of this study, the blockhouse and other War of 1812 sites were researched in depth, visited and analyzed in terms of their archaeological potential. This work provides the basic underpinning for the current investigations (Hunter Research, Inc. 1990, Volume 1:D135-D140, D315-D319). Concurrently, a partial draft of a historic structure report was compiled for the blockhouse by Conservancy staff. This document briefly analyzed the history, architectural development and condition of the structure, offering recommendations for its conservation and interpretive treatment and suggestions for short-term interventions and landscape improvements (Central Park Conservancy 1991).

Also in the early 1990s, interest arose in using the blockhouse as the basis for training students at Columbia University's Graduate School of

Architecture, Planning and Preservation. In 1995, a class taught by Professor Pamela Jerome, a preservation architect, saw students conduct historical research, architectural analysis, a conditions assessment and archaeological investigation of the building, resulting in several collaborative papers/reports compiled as a single document (Students Enrolled in “Excavated Archaeological Sites: Conservation and Maintenance” 1995). The archaeological component of this research entailed two days of excavation, carried out on April 29 and 30, 1995, nominally led by Prof. J.A. MacGillivray, a classical archaeologist on the Columbia University faculty. Two excavation units were dug, one each in the southwest and southeast corners of the blockhouse interior. Apparently performed without formal permitting by the Landmarks Preservation Commission, these archaeological investigations were described and interpreted in a separate report completed in the fall of 1995 (Vazquez 1995). In the course of the current work, Hunter Research has re-analyzed and expanded on these investigations, also fully cataloging the artifacts recovered in 1995, a task previously left incomplete. Since 1995, the blockhouse has on occasion continued to be the subject of student training exercises in preservation architecture run by Columbia University’s Graduate School of Architecture, Planning and Preservation, which has generated additional student reports (e.g., Diaz *et al.* 2002).

The history of the blockhouse presented in Chapter 2 of the current report has its origins in a program of archival study and historic resource mapping undertaken by this firm in 2014 which focused on the portion of the park extending north from 103rd Street. Archival research placed a particular emphasis on events and features of the Revolutionary War and the War of 1812, including the blockhouse, and identified key historic maps, primary sources and archival repositories where major collections of military data were held. Among the repositories visited were the New-York Historical Society and the Manhattan

Borough President’s Office in Manhattan, the David Library in Washington Crossing, Pennsylvania, the New York State Archives in Albany, New York, and the William Clements Library at the University of Michigan in Ann Arbor, Michigan. The final deliverables from this work comprised a summary narrative, a tabulation of historic maps, an inventory of sites, timelines for both the Revolutionary War and the War of 1812, and digital files containing copies of archival materials, GIS map layers and a geodatabase (Hunter Research, Inc. 2014).

C. PRINCIPAL SOURCES OF INFORMATION

Building on the archival research completed in 2014, the current study has involved additional research focused more specifically on Blockhouse No. 1 and other War of 1812 blockhouses on Manhattan and elsewhere. Much of this research was performed online, but supplementary study of sources of historic imagery was also conducted in person at the New-York Historical Society (the Herman A. Blumenthal, George Stonebridge and Robert L. Bracklow photograph collections), the Metropolitan Museum of Art (the Herbert Mitchell Collection) and the Avery Library at Columbia University. Visits were made to the Municipal Archives in New York and the College Park, Maryland and downtown Washington, D.C. facilities of the National Archives and Records Administration in search of primary archival materials relating to the Blockhouse No. 1. Of particular value in the National Archives were items in the Buell Collection and records pertaining to Joseph Gardner Swift (Colonel and Chief Engineer of the Army).

D. DESCRIPTION OF THE BUILDING

Blockhouse No. 1 sits at an elevation of 107 feet above sea level on an exposed bedrock outcrop of Manhattan schist overlooking Harlem to the north (Photograph 1.2). The building measures approximately 34 feet square in plan in its exterior dimension and is roughly 19 feet high. Its stone masonry consists principally of irregularly sized and shaped blocks of Manhattan schist, Triassic red sandstone and Hudson Highlands granite, all materials that are accessible locally.

The building is essentially a square, single-story structure. Each of its four sides originally had two small gunports. The southernmost gunport on the west wall has been altered and now serves as the building's entry. The remaining seven gunports still survive, although some have been partially infilled with brick. There has been extensive repointing and patching of the masonry throughout. The masonry in the uppermost two feet or so of the walls is noticeably different in color, composition and the size of the stones. These parts of the structure appear rebuilt and are capped with a stone coping; they are almost certainly attributable to the *circa* 1900 rehabilitation.

Inside the building, there is an intermittent offset in the masonry towards the base of each wall. This likely supported a first-floor timber flooring system of sill, joists and planks. There is a distinct vertical line in the mortar and masonry midway along the inside faces of the north and south walls. These may reflect an interior, north-south partition inside the building. In the northeast corner there is a setting for a flagpole, a predecessor of the flagpole that is presently in the center of the building.

Chapter 2

HISTORICAL OVERVIEW

A. BEFORE THE WAR OF 1812

Blockhouse No. 1 occupies a prominent rock outcrop on the bluffs overlooking Harlem Plains to the north. Although Harlem today is almost entirely built-up and the bluffs in Central Park are tree-clad, the blockhouse site historically, with minimal clearance of vegetation, would have provided a fine vantage point for a sweeping view over the northern end of Manhattan Island between the Hudson and East Rivers. This location would have been frequently visited by Native Americans and early European settlers seeking game or keeping watch over people moving across the land. However, no clear trace of a human presence on the rock outcrop prior to the War of 1812 has so far been forthcoming in the form of artifacts or structural remains.

The blockhouse site is contained within property that was owned by the Kortwright family (and their Jansen antecedents) for the bulk of the colonial period through the Revolutionary War years. In 1789, Valentine Nutter, a printer who maintained a shop several miles south in the city, began acquiring the Kortwright lands, which extended south from Harlem Plains along the west side of the Kingsbridge Road, including much of the northern end of present-day Central Park as far south as 106th Street. Within a decade Nutter had taken full control of the Kortwright holdings, replacing the original homestead with a new house. Historically, the nucleus of the Kortwright/Nutter farm property lay at the intersection of the Kingsbridge Road and the Harlem Road on the north side of Harlem Creek, immediately below the blockhouse site. Today, this location is on the north bank of the Harlem Meer within Central Park, on the line of Sixth Avenue, just below 110th Street, opposite the

southern end of Malcolm X Boulevard. At the time of the War of 1812, Valentine Nutter (1741-1836) still remained the owner of the blockhouse site (Riker 1904; Hall 1911; Stokes 1922, 1926; Hunter Research, Inc. 1990, Volume 1:D182-184, D233-234).

In mid-September 1776, following the American defeat at the Battle of Long Island, the British crossed over to Manhattan Island, causing American forces to evacuate New York City and retreat northward, taking up defensive positions on the heights north of Harlem Creek. The British themselves fortified the bluffs on the south side of the creek, establishing an east-west line of redoubts, batteries and entrenchments, focused in particular on the rock outcrops around McGowan's Pass on the Kingsbridge Road and further to the west on either side of the Bloomingdale Road. The British soon pushed the Americans still further northward off Manhattan Island altogether, winning a costly victory at the Battle of White Plains on October 28, capturing Fort Washington on November 16 and precipitating an American withdrawal across New Jersey to the Delaware River (Appendix A).

The British then occupied New York City for the remainder of the Revolutionary War, finally evacuating troops on November 25, 1783. Throughout this period, the British army and Hessian mercenaries maintained a line of defense on the bluffs ranged along the south side of Harlem Creek. The manning of these defenses involved both British and Hessian regiments and the numbers of troops assigned to the McGowan's Pass area fluctuated depending on the perceived threat of American attacks from the various Continental Army bases further up the Hudson River.

From late 1776 through to the end of 1779, there is little site-specific information available, but the pass appears to have been lightly defended by small detachments of Hessian troops. For most of 1780 between 450 and 500 soldiers of the Mirbach Corps were posted there, but the military presence was substantially increased in late 1781 in the aftermath of the October defeat at Yorktown. At this time additional defensive works and a barracks were erected under the direction of Abraham D'Aubant in anticipation of possible American land attacks from the north. By May of 1782 close to 1,000 Hessian troops from the Du Corps and Prince Charles Corps were stationed at the pass. Later in the fall of that year a combined British and Hessian force of around 10,000 men was amassed behind these defenses along either side of the Kingsbridge Road with a formal order of battle even being drawn up. The threat waned, however, and by January 1, 1783, McGowan's Pass was being defended by a pair of British regiments, the 54th and the 57th, totaling 515 and 503 men respectively. By July 1, 1783, the British regiments had been replaced by two groups of Hessian chasseurs numbering 1,220 men. This level of defense was maintained until the signing of the Treaty of Paris on September 3, 1783, shortly after which troop withdrawals from New York City commenced (Appendix A).

The exact positions of the British fortifications and encampments on the bluffs south of Harlem Creek between 1776 and 1783 are difficult to ascertain. Several maps survive from this period, but few are either detailed or accurate in their depiction of the topography and military installations (Figures 2.1-2.7). It is possible, but not proven with any certainty, that the outcrop later supporting Blockhouse No. 1 was fortified by the British and maybe even served as the site of a redoubt, although perhaps the most likely use of the outcrop was as a lookout.

Four maps, all apparently drafted in the fall of 1776, highlight the difficulty in pinning down the locations of British defensive works constructed in opposition to the American line on the Harlem Heights. A map of British "advanced posts" established by October 12 depicts a square redoubt at the eastern end of the bluffs extending between Montaigne's Rivulet and the Hudson River roughly where Blockhouse No. 1 is later situated (Figure 2.1). Two more British maps show the military landscape on November 16 at the time of the fall of Fort Washington, although McGowan's Pass lies at the southern extremity of the area being mapped. One of these maps shows only the redoubts on either side of the pass, along with some confusing drainage and relief, even though other defensive works were certainly present (Figure 2.2); the other shows more of the fortifications as well as the main troop positions immediately to the south, but again the topography defies detailed interpretation (Figure 2.3). The fourth map, unfinished and undated, but arguably the most accurate representation, was apparently drafted by an American cartographer. It shows the American positions in the fall of 1776 in considerable detail and several irregularly shaped redoubts and batteries along the British lines, including one in roughly the location of future Blockhouse No. 1 (Figure 2.4).

Other maps produced later in the war years are similarly difficult to interpret. Another American-drawn map, dated to around 1778, shows similar detail of the British defensive positions in the northern part of Manhattan Island and along the east side of the East River, all framed within a somewhat clearer representation of the topography (Figure 2.5). A British War Office map of 1782 provides a vivid picture of Manhattan Island toward the end of the Revolutionary War, confirming that McGowan's Pass and the area immediately to the west around the Great Hill were still in military use. The rock outcrop on which Blockhouse No. 1 was later built appears to be shown on this map as the middle of three promontories but

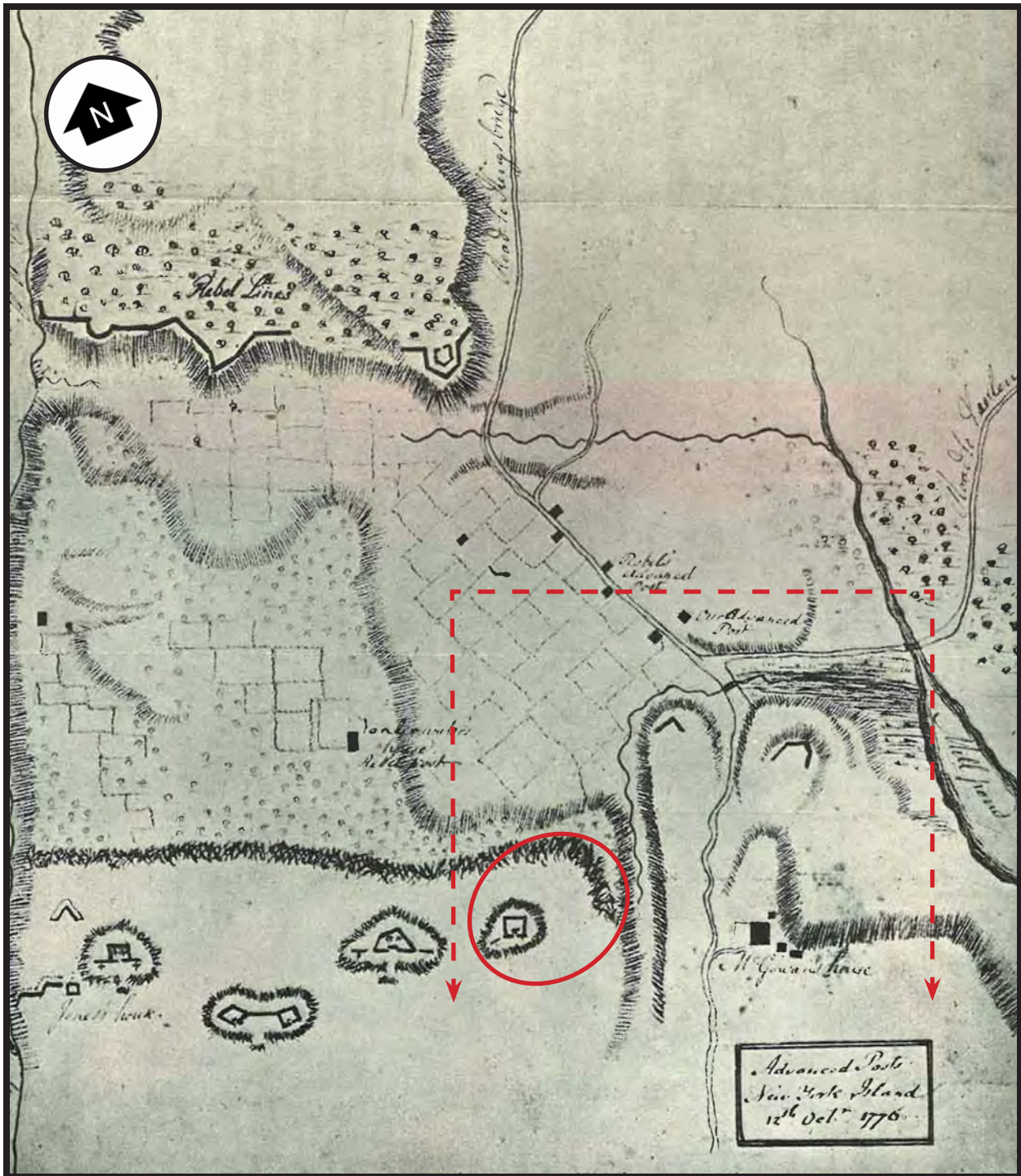


Figure 2.1. "Advanced Posts, New York Island, 12th Oct. 1776." 1776. In *Diary of Frederick Mackenzie* (1930). Scale 1 inch = 950 feet (approximately). Approximate limits of Central Park outlined and approximate location of future Blockhouse No. 1 circled.



Figure 2.2. Sauthier, Claude J. Detail of "A Map of Part of New-York Island" 1776. Scale 1 inch = 600 feet (approximately). Approximate limits of Central Park outlined and approximate future location of Blockhouse No. 1 circled.



Figure 2.3. Detail of “Attacks of Fort Mifflin by His Majesty’s Forces under the Command of Genl. Sir Willm. Howe K.B., 16 Novr. 1776.” 1776. Scale 1 inch = 1700 feet (approximately). Approximate limits of Central Park outlined and approximate location of future Blockhouse No. 1 circled.

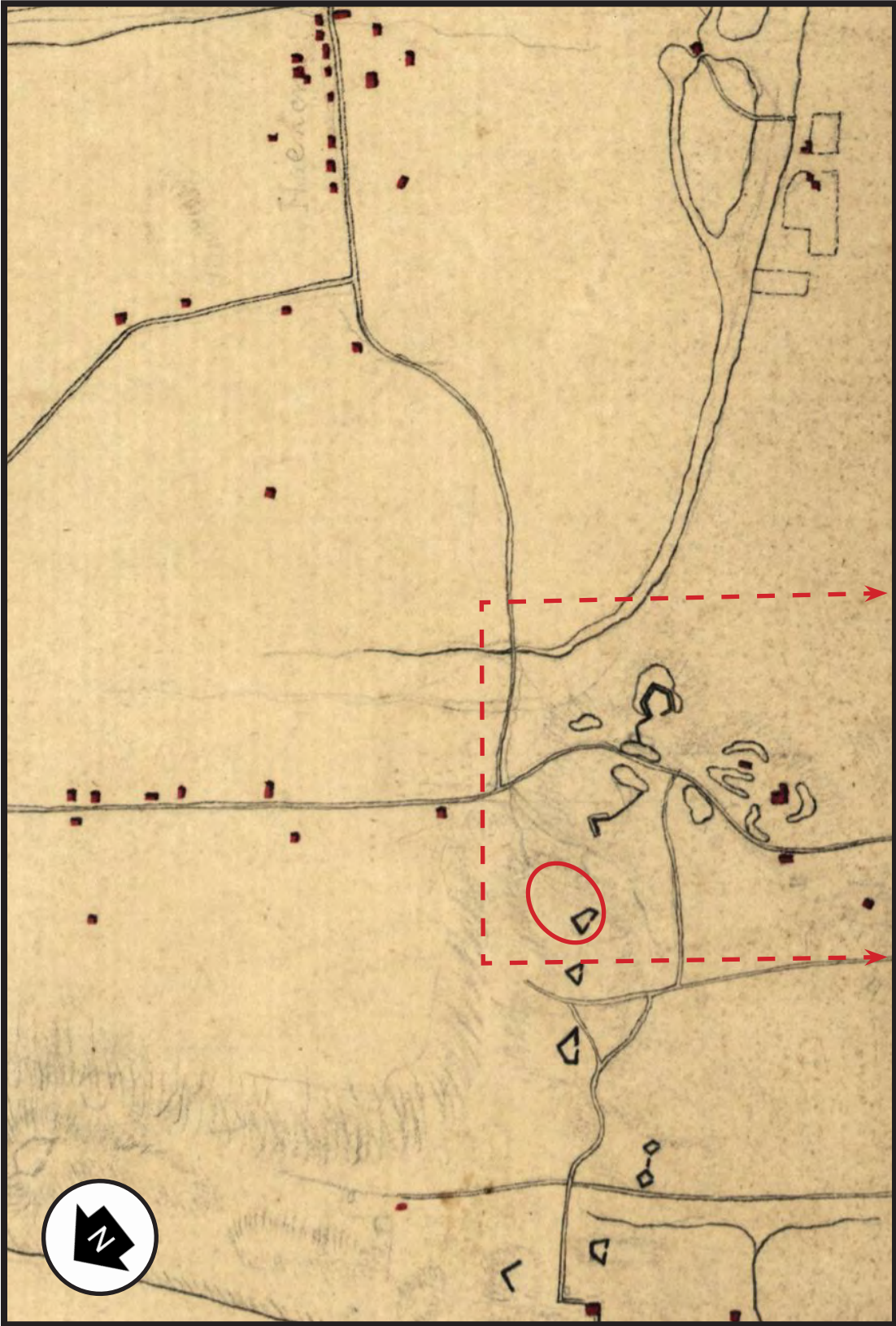


Figure 2.4. Detail of “Unfinished Map of New York Island.” 1776. Scale 1 inch = 1200 feet (approximately). Approximate limits of Central Park outlined and approximate location of future Blockhouse No. 1 circled.



Figure 2.5. Detail of "Unfinished Map of New York Island." 1778. Approximate limits of Central Park outlined and approximate location of future Blockhouse No. 1 circled.



Figure 2.6. Stevens, B.F. (British War Office). Detail of "British Headquarters Map of New York & Environs." 1782. Approximate limits of Central Park outlined and approximate location of future Blockhouse No. 1 circled.

without any indication of buildings. The principal focus of the defensive system in this area is a pair of redoubts with an encampment nearby, all situated on what is today known as the Great Hill (Figure 2.6). Finally, a smaller-scale “spy” map sketched by Benjamin Tallmadge for the Continental Army in November 1782, as Washington contemplated one more major assault on New York City, indicates that McGowan’s Pass was still an important intermediate position in the network of British defenses in this final phase of the conflict (Figure 2.7).

B. WAR OF 1812

Throughout the Napoleonic Wars, the global conflagration between the French Empire and various coalitions of European powers (1803-1815), Britain enforced a naval blockade to prevent neutral trade to France, a restriction that the United States considered illegal under international law. From the outset of this conflict, the British also periodically impressed American sailors captured on the high seas, requiring them to help man the blockade, treatment which only aroused further hostility in the United States. In 1807, in retaliation, President Jefferson imposed an embargo on British imports, a step that unwittingly hurt American merchants almost as much as it did their British counterparts. The embargo was lifted in 1809, but a number of incidents at sea and the British supplying arms to American Indians on the western frontier finally led to the United States declaring war on Great Britain on June 18, 1812. American expansionist ambitions on the North American continent, including a desire to annex some or all of British North America, were also arguably a factor in this formal declaration of war (Appendix B).

For two and a half years, from the summer of 1812 until the signing of the Treaty of Ghent on December 24, 1814, the United States conducted a somewhat intermittent and not always popular fight against the

British, chiefly on the western frontier and in the Great Lakes region (Appendix B). At sea, the powerful British Navy blockaded American ports, throttling overseas trade and raising the specter of attacks up and down the eastern seaboard. New York City, as the nation’s most active port during this period, was constantly at risk during this conflict and, quite apart from the effects of the blockade, lived in a state of perpetual nervousness over the prospect of bombardment and invasion. In December of 1813, in response to this threat, the city’s Common Council, led by Mayor DeWitt Clinton, established a Committee of Defense under the chairmanship of Alderman Nicholas Fish, a wealthy lawyer, to prepare the city against British attack (Figure 2.8).

In the spring of 1814, coalition forces in Europe defeated Napoleon, driving him into exile on the island of Elba. Britain, with newly freed-up military resources, now found herself in a position to pursue an expanded, more aggressive strategy in North America. Three separate invasion armies were dispatched across the Atlantic: one to head south from Canada along the Lake Champlain/Hudson Valley corridor into upstate New York; another to launch an attack on New Orleans; and a third force assigned to harry port communities along the eastern seaboard, distracting American forces from the Champlain/Hudson Valley advance.

At risk from two of the three invading forces, New York City began to take more concrete and urgent steps to protect itself. These required the combined and coordinated effort of all three principal levels of government: the city’s Common Council and its appointed committees which drew on the funds of its well-endowed treasury; the State of New York, headed by Governor Daniel Tompkins, which mobilized the state militia for military duty and limited construction assistance; and the federal government, in the form of the Corps of Engineers, under Chief of Engineers Brigadier General Joseph Gardner Swift,

which designed and took charge of erecting fortifications capable of defending the city and harbor (Figure 2.8). Added to this was a substantial volunteer contingent of local residents which willingly pitched in to help with the various public works/defense projects and in actuality was responsible for the bulk of the construction work.

On July 20, 1814, with the reality of a British invasion of mounting concern, Governor Tompkins ordered state militia units to begin mobilizing for the defense of New York City. Supported by a requisition made by President Madison, Tompkins ordered the militia to be “prepared for instance [sic] service and ready to march at a moment’s warning.” The militia were organized into three divisions, two of which were earmarked for the defense of the city (Table 2.1). The first division consisted of the brigades of Generals Steddiford, Morton and Mapes from Rockland, Orange, Putnam and Dutchess counties; the second division consisted of the brigades of Generals Heermance and Haight from Ulster, Delaware, Green, Rensselaer, Albany, Schenectady, and Dutchess counties. The troops took from four to eight weeks to mobilize and were moved to the city from various muster locations in the state.

The general mood was described as under “great anxiety for the safety of the City of New York” (Tompkins Papers, General Order, July 20, 1814).

Concurrently, General Swift drew up plans for the defense of the city, a task he was well equipped to do, having been in command of the various defensive installations on Staten Island since the spring of 1813 in addition to performing his duties as Chief Engineer of the U.S. Army at West Point. Swift’s planned defensive system was comprehensive, addressing not just Manhattan Island but also the harbor approaches and the various communities along the Long Island, Staten Island and New Jersey shores of New York Bay and the East River (Figure 2.9).

He presented his plans for the City’s fortifications on August 4, 1814, including in his proposals a recommendation that two redoubts be built at McGowan’s Pass. He also called for connecting entrenchments between major works, fronted by wide, deep ditches, and recommended that the state militia be called upon to man the defensive positions planned for the northern part of Manhattan Island. There was ample room, in his view, for the militia and other workers to encamp on the Harlem Commons near McGowan’s

TABLE 2.1. NEW YORK STATE MILITIA BRIGADES ENGAGED IN THE DEFENSE OF NEW YORK CITY DURING THE WAR OF 1812

Brigade Commander	Period of Service Defending New York City
Brigadier General Martin Heermance [sic]	August 18, 1814 - March 4, 1815
Brigadier General Samuel Haight	August 18, 1814 - March 4, 1815
Brigadier General Peer S. Van Orden	September 3, 1814 - December 6, 1814
Brigadier General Jeremiah Johnson	September 2, 1814 - December 2, 1814
Brigadier General Peter Curtenius	September 17, 1814 - December 2, 1814
Brigadier General Robert Swartout	September 10, 1814 - December 13, 1814
Captain Sidney Dole	August 18, 1814 - November 22, 1814
Brigadier General Gerard Steddiford	September 2, 1814 - March 4, 1815
Brigadier General Jonas Mapes	September 2, 1814 - December 2, 1814
Brigadier General Jacob Morton	September 2, 1814 - - December 2, 1814

Source: Selected Audited Accounts of State and Civil Military Officers 1780-1855 (A0802, Box 23, p. 100)



Figure 2.8. Key Figures in the Defense of New York City in 1814: 1). DeWitt Clinton (1769-1828), Mayor of the City of New York [portrait by Rembrandt Peale]; 2). Nicholas Fish (1758-1833), Chairman, Committee of Defense for the City of New York [portrait by Henry Inman]; 3). Daniel D. Tompkins (1774-1825), Governor of New York State [portrait by John Wesley Jarvis]; 4). Joseph Gardner Swift (1783-1865), U.S. Army Chief of Engineers [portrait by John Wesley Jarvis].

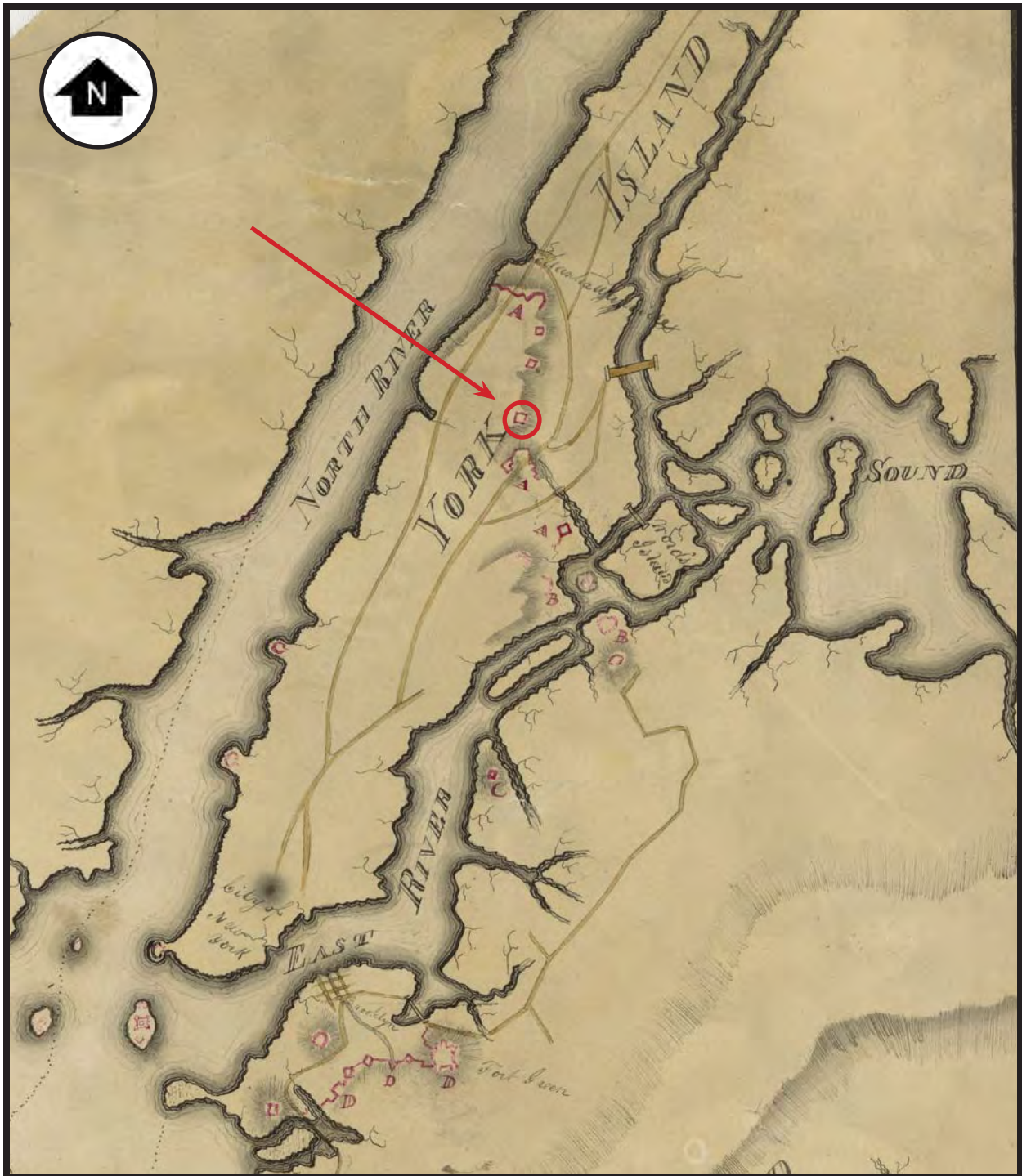


Figure 2.9. Detail of “Plan of the City, Environs and Harbour of New York.” 1814. Scale 1 inch = 8600 feet (approximately). Blockhouse No. 1 circled.

Pass (Proceedings of the Committee of Defence 1814-15; Guernsey 1895:161; Hunter Research, Inc. 1990, Volume 1:D136).

On the same day that Swift presented his plans, President Madison requisitioned 3,000 state militia for the defense of the "Atlantic frontier" of New York State and Governor Tompkins ordered out 3,000 men of Heermance's and Haight's brigades to rendezvous in New York City no later than August 18. All militia were to be supplied for three months service and equipped with a musket and bayonet, cartridge box or pouch, a knapsack, blanket and canteen. No substitutes (men serving in lieu of another) were allowed unless properly equipped and officers were instructed not to accept surgeons' certificates of inability to serve without conclusive evidence of disability (Tompkins Papers, General Order, August 4, 1814).

The City's Committee of Defence approved Swift's plans within two days and work on building the fortifications in Brooklyn appears to have begun on August 9. Beginning on that same day, British naval forces commenced a largely unsuccessful three-day bombardment of the village of Stonington in Connecticut and rumors of an imminent move on New York City caused widespread alarm, impressing on government officials the urgency of the situation. Correspondence between Governor Tompkins in Albany and Mayor Clinton in New York City on August 12 and 13 reflected real concern about inadequate supplies and the readiness of the militia. There was a shortage, in particular, of weaponry, most notably cannon (Tompkins Papers, General Orders, August 12-13, 1814).

On August 17, General Swift informed the Committee of Defence that the complex of redoubts at McGowan's Pass and other works in the Harlem area had been laid out. Work officially began the next day with construction on Fort Clinton (named for the Mayor) employing several hundred men. By this date, some 2,000 militia were stationed in the McGowan's Pass area, largely

from General Heermance's Brigade, recently arrived from Rhinebeck. On the next day, August 19, the transporting of volunteer workers by steamboat from downtown to Harlem commenced with the expectation that up to 400 construction workers would be present the following day (Proceedings of the Committee of Defence 1814-1815; Guernsey 1895:220; Hunter Research, Inc. 1990, Volume 1:D137).

On Monday, August 22, a party of 100 to 200 volunteers went by steamboat from Bergen (Jersey City) to work on Fort Clinton. A couple of days later, General Heermance remarked on the assistance he had received from Valentine Nutter, the McGowan family and others in setting up the Harlem encampments. On Saturday, August 27, Governor Tompkins ordered the militia to parade and undergo inspection on the following Tuesday, urging that every militiaman be equipped with a musket. The following day the Governor reprimanded General Heermance for the poor deportment of his troops, specifically mentioning deficient equipment and disorderly conduct. On the very next day, Governor Tompkins ordered all citizens of New York City to turn in their privately owned weapons at the state arsenal for the use of the army. Equipping the militia units and maintaining discipline were evidently a major challenge for the American commanders deployed not only in Harlem Heights but throughout the city's defenses (Tompkins Papers, Broadside, August 18, 1814 and General Order, August 29, 1814; Guernsey 1895:225-226).

Throughout the second half of the month of August, work progressed rapidly on the fortifications around McGowan's Pass, with construction apparently moving more slowly on the projected line of blockhouses extending west along the bluff rim from the pass to the Hudson River. One of the reasons for the lack of progress on this western section of the fortifications along the Harlem Line may have been a shortage of suitable building materials. On August 27, General Swift asked the Committee of Defence to supply the

stone, lime brick and timber needed for the construction of the “towers,” or blockhouses, proposed for the Harlem line, noting that he had been having difficulty acquiring the stone necessary to build the tower he had proposed at McGowan’s Pass. He announced that he planned instead to replace this latter work with alternative defenses of earth and timber. It is not entirely clear, but this latter comment may have referred to the gatehouse at the pass and the alternative fortification may have been what eventually became known as Fort Fish (named for Alderman Nicholas Fish). Progress may have picked up toward the end of the month, since local newspapers reported on August 31 that the works around the pass were taking shape and not far from completion. Among the workers on the Harlem line were “Rock blowers” (explosives experts), ten “Dock builders” (presumably constructing wharves on the Hudson and East rivers) and two blacksmiths. Construction of a barracks in Harlem was also authorized at this time for the accommodation of troops serving in the McGowan’s Pass area (Proceedings of the Committee of Defence 1814-15; Guernsey 1895:296; Hall 1905:38; Stokes 1926 IV:1575-1576).

Meanwhile, between August 19 and 25, the British invaded the Chesapeake, routing American forces at the Battle of Bladensburg in Maryland and then proceeding on to an undefended Washington, D.C., which they sacked and burned on August 24. On August 31, another British force began to move south down the Champlain Valley from Upper Canada toward New York. This advance was halted in early September at the Battle of Plattsburgh through the combined efforts of the New York State and Vermont militias and the regular troops of the U.S. Army, while a U.S. naval squadron repelled the British navy off nearby Valcour Island. But the tension was soon ratcheted up again when another British naval force bombarded Fort McHenry outside Baltimore on September 13. With these events, the urgency in defending New York City only became more acute.

In mid-September some 3,500 American militia, drawn from the brigades under the command of Generals Heermance and Curtenius, were stationed in the McGowan’s Pass/Harlem Heights area. By this time construction of the line of blockhouses extending north and west from McGowan’s Pass was more obviously under way since Valentine Nutter, on September 19, applied to the Committee of Defence for compensation for trees cut from his land to provide timber for building fortifications, a request to which the Committee acceded (Proceedings of the Committee of Defence 1814-15). Furthermore, certain militiamen, most likely individuals with particular construction skills, were being assigned to work on specific projects under the supervision of federal engineers. For example, also on September 19, Henry Van Werts of Captain Betts’ Company, Major Forbes Battalion, Abraham and Peter Prior of Captain Ferris’ Company of the 2nd Regiment of Artillery, and Tunis Talman of Captain Ricks Company, 3rd Regiment of Artillery were all detailed to work on the blockhouses at Harlem under the direction of General Swift. On the same day, Clark De Camp of Capt. Ferris’ Company was also detailed for extra duty at Harlem Heights under the direction of Lieutenant Gadsden of the Engineers. Gadsden was none other than James Gadsden, who later in his career negotiated the Gadsden Purchase of 1854, through which the United States acquired much of the states of Arizona and New Mexico from Mexico. Here, on the Harlem line, Gadsden, then in his mid-20s, was one of Swift’s most trusted aides (New York State Militia, Adjutant’s Book, 9th Regiment, September 19, 1814; Letters Received by the Office of the Adjutant General, October 10, 1815).

James Gadsden (1788-1858) was but one of several engineers and surveyors assisting General Swift in the field and it is to this group of individuals that posterity owes a debt for the fine cartographic record of the defenses erected at McGowan’s pass and on Harlem Heights. Among the many maps surveyed in the fall of 1814 is an appealing watercolor sketch

by James Renwick (1790-1863), who went on to become a renowned professor of natural philosophy at Columbia College (Figure 2.10). Renwick was also the father of the architect, James Renwick, Jr., designer of St. Patrick's Cathedral, the Smithsonian "Castle" and many other American landmarks. A pen-and-ink "military topographical" sketch map drawn by Renwick in October gives much the same detail but also includes, in the top right corner, a view of the defenses looking south across Harlem Creek (Figure 2.11). This view contains the only contemporary depiction of Blockhouse No. 1 which is shown as a square box-like structure with a simple, overhanging, hipped roof (Figure 2.12). Another of Swift's topographic engineers was William Proctor, who produced an even more detailed and elaborate watercolor of the McGowan's Pass/Harlem Heights landscape (Figure 2.13). James Gadsden himself also produced maps of the Harlem line defenses, one of which provided the basis for a copy drawn by William H. Chase in July of 1815 (Figure 2.14). Chase (1798-1870), a 16-year-old U.S. Military Academy student at the time, went on to design several military installations for the U.S. Army Corps of Engineers in the mid-19th century and played a prominent role as a Confederate general in the secession crisis. In addition to his coterie of rising engineers, General Swift also accepted the voluntary graphic services of artist and theatrical scene painter John Joseph Holland who, to avoid duty in the line of troops, produced "more than twenty sketches of various parts of the [Harlem] line of works and adjacent scenery." While several of Holland's sketches documented the defenses around McGowan's Pass, unfortunately none showed any of the blockhouses (Swift 1890:134-135).

After the war was over, a collection of some 33 maps, plans and views of the McGowan's Pass/Harlem Heights defenses, including all of Holland's watercolors and many of the U.S. Army's surveys, were presented to the City of New York. Some years later, the collection was borrowed by the historian Benson

J. Lossing, who made ample use of this material in his pictorial field book of War of 1812, published in 1868. The collection remains largely intact and is now housed at the New-York Historical Society (Lossing 1868; Stokes 1918 III:551-552).

The maps and plans produced by Swift's topographic engineers are of exceptional value as they show the entire Harlem line fortification system in great detail and with considerable accuracy, serving as an essential accompaniment to Swift's own report on the city defenses. The main focus of guarding against a British land assault from the north was McGowan's Pass where the Kingsbridge Road, the principal road heading north out of the city, ascended the bluffs on the south side of Harlem Creek. The road was straddled by a substantial timber gatehouse (also referred to as a blockhouse) raised on stone abutments, flanked by stone redoubts at Fort Clinton and Nutter's Battery and overlooked by Fort Fish, the whole complex linked by earthworks topped by timber ramparts. To the east of the pass, toward the mouth of Harlem Creek, an outpost and earthwork defended Benson's Point, while a blockhouse known as "Devil's Tower" was installed on Mill Rock at Hell Gate in the middle of the East River. At the far western end of the defenses, the Bloomingdale Road, rising up from Manhattanville, was guarded by a string of earthworks and redoubts. The bluffs extending north from McGowan's Pass to the Bloomingdale Road supported a line of four blockhouses, numbered 1 through 4 from south to north, Blockhouse No. 1 being the structure surviving today within Central Park. Serving more as fortified lookout towers than true blockhouses, the southernmost and northernmost structures (Nos. 1 and 4) were built of stone, the two intermediate structures (Nos. 2 and 3) were constructed in timber. Swift's report also provides limited further information on the blockhouses, noting that they were erected "within supporting distance of each other, and near enough for the interchange of grape shot; all of them to mount heavy cannon on their terrace" (Swift 1814).

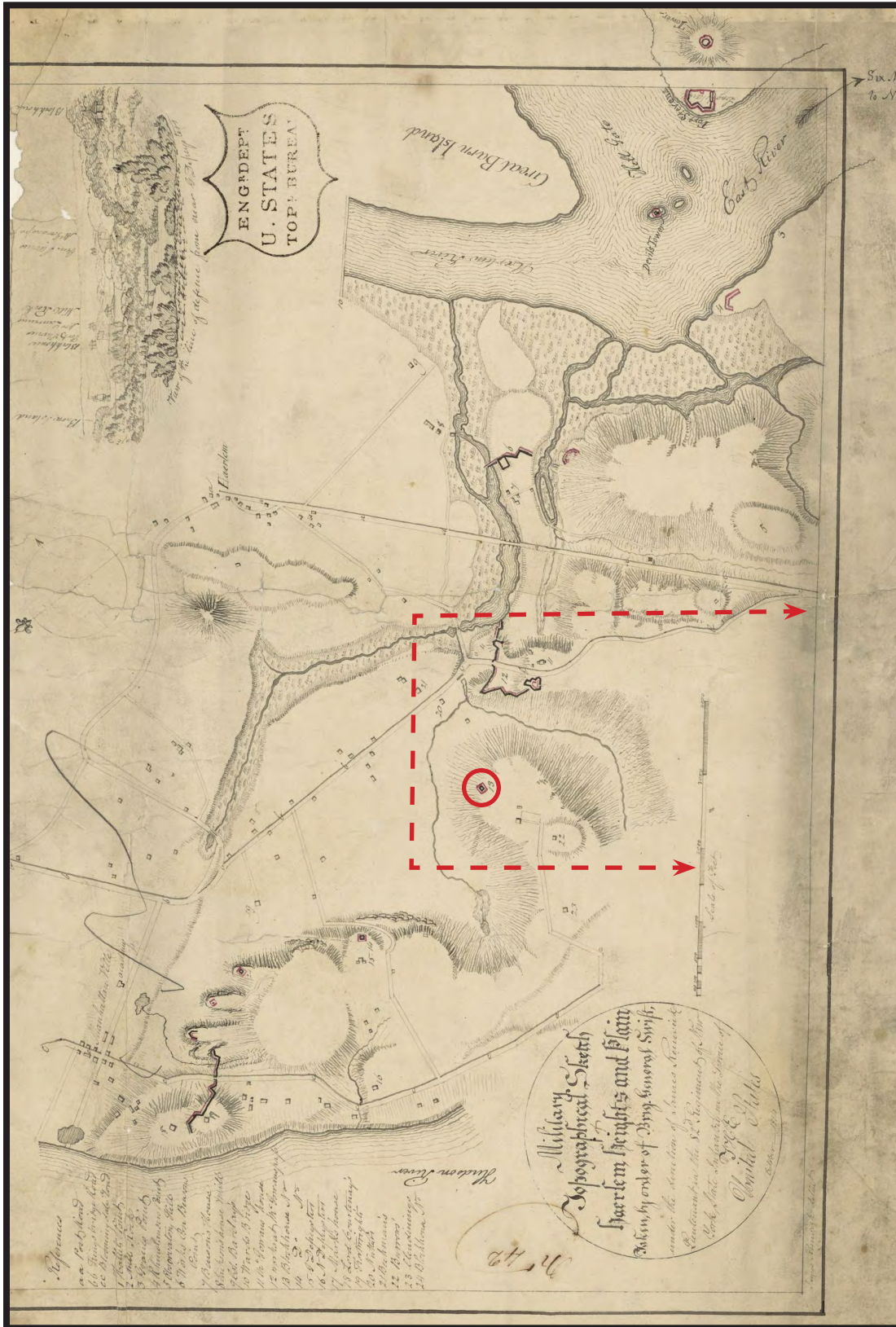


Figure 2.11. Renwick, James. "Military Topographical Sketch of Haerlem Heights and Plain." 1814. Scale 1 inch = 2080 feet (approximately). Approximate limits of Central Park outlined and Blockhouse No. 1 circled.



Figure 2.12. Renwick, James. Inset sketch "View of the line of defence from near G. Depeyesters" accompanying Military Topographical Sketch of Haerlem Heights and Plain. 1814. Blockhouse No. 1 is at the far right.

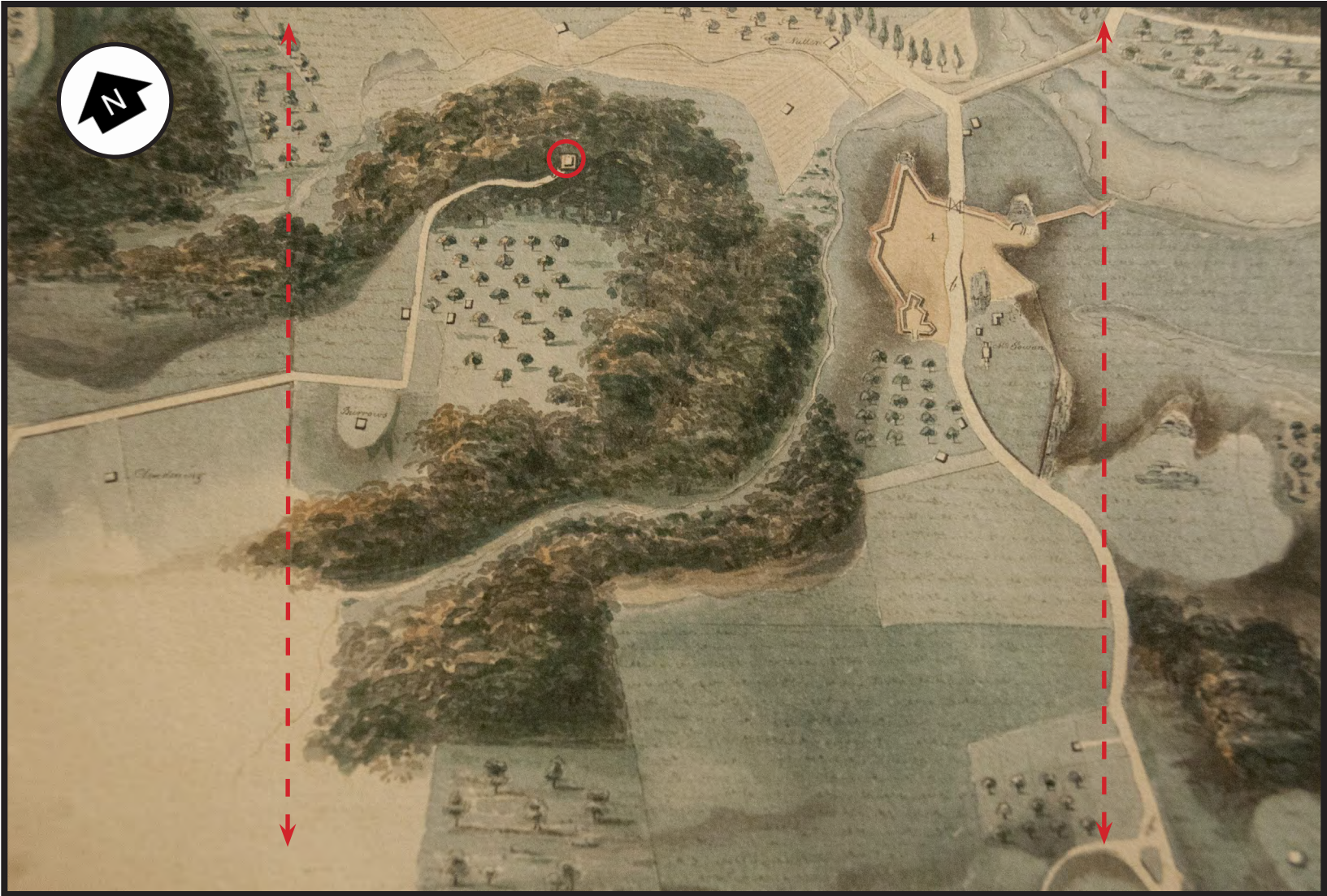


Figure 2.13. Proctor, William James. Detail of “A Military Topographic Map of Haerlem Heights and Plain.” 1814. Scale 1 inch = 680 feet (approximately). Approximate limits of Central Park outlined and Blockhouse No. 1 circled.

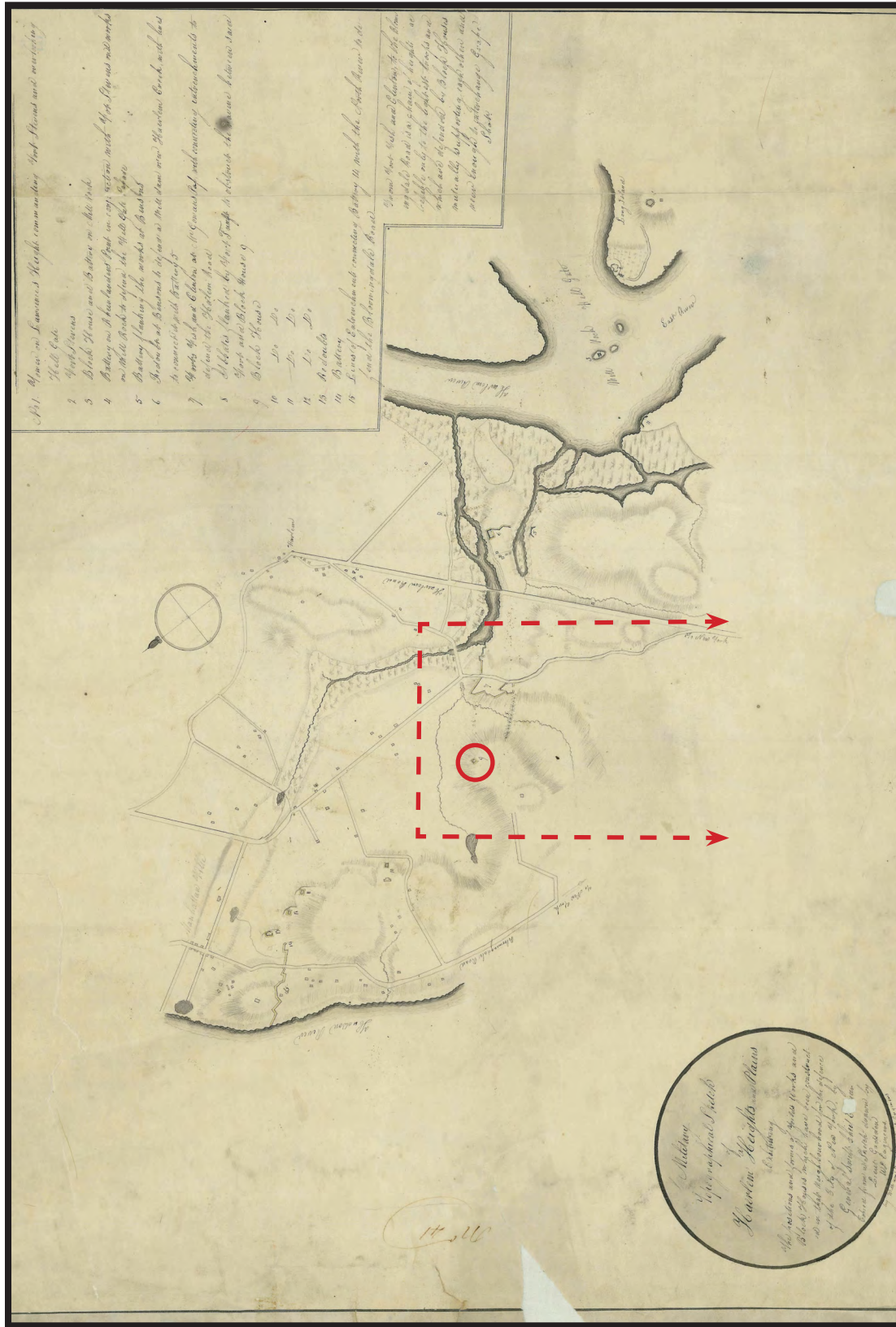


Figure 2.14. Chase, William H. Detail of "Military Topographical Sketch of Haerlem Heights and Plains." 1815. Scale 1 inch = 3100 feet (approximately). Approximate limits of Central Park outlined and Blockhouse No. 1 circled.

Construction activity on the Harlem line defenses continued throughout September and October and was not completed until late November 1814. The bulk of this construction was completed under the supervision of Major Horn with assistance from Lieutenant Gadsden. The last volunteer party of civilians finished working on the fortifications on November 12, although it appears that certain contractors, state militia and federal engineers continued their labors for another week or two beyond this date. Throughout the fall of 1814, adjutants' records and Governor Tompkins' orders continue to show that militia were being selectively detailed to work on the blockhouses and other elements of the fortifications. Beginning in late October and continuing through into mid-December, the Committee of Defence also began to receive bills and issue payments for the construction of the defenses from a variety of contractors. For example, on October 25, the Committee approved payments of \$600 to William Hoagland for building platforms and blockhouses and \$2,000 to Adam and Noah Brown for building blockhouses. Payments of \$1,500 were made to George B. Thorpe on both October 29 and November 23 for work on the blockhouses. In a final settling of accounts on December 17, Thorpe received \$5,446.89 for his efforts. The total cost to the Committee of Defence for building all of the New York City defenses was \$947,570.57 (New York State Militia, Adjutant's Book, 9th Regiment, September 30, October 21 and 28, November 4 and 15, 1814; Proceedings of the Committee of Defence, October 25 and 29, November 23 and 29, December 17, 1814).

As the construction of the fortifications proceeded, other militia units were deployed to the Harlem Heights/McGowan's Pass area and there were persistent problems over pay and supplies. On October 23, President Madison placed Governor Tompkins in command of all the troops in southern New York, including both the state militia and U.S. Army regulars. This was a position Tompkins held until April 18, 1815. An early concern for the new commander was

the quality of the troops' provisions, a matter he raised with the Secretary of War James Monroe on October 29. Noting that U.S. Quartermaster General Romaine "does not appear capable of managing the business of the department," Tompkins went on say that:

"The complaints against the subcontractors or agents are incessant & in many cases not without foundation. The bread which has been offered within a few days by some of the contractors agents is represented by the officers who were present & who are entitled to full confidence, as truly offensive & unhealthy. An inspection was held & the bread condemned & destroyed in the cases alluded to, but the commanding officers could not at a moment's notice supply the deficiency. The troops are, therefore, generally in such cases, without the supply of the kind of articles condemned for one day at least (Tompkins Papers, Correspondence, October 29, 1814).

After investigating the government's flour contract and meat supply, three weeks later Tompkins issued new rules governing the supply of provisions in an attempt to quell complaints from the troops about bad food. Finding sufficient forage for the horses used by the cavalry and artillery was another problem, while there was also a need for more and better ordnance. Perhaps most serious of all, however, was Tompkins' realization that the state paymaster was running short of funds, resulting in his making a request to the Committee of Defence on November 19 that the City of New York advance funds to pay the state militia (Tompkins Papers, General Orders, October 23 and November 19, Correspondence, November 19, 1814).

At this juncture, with the threat of British invasion now waning and in an effort to control expenses, Tompkins began to take steps to discharge the militia before winter arrived. On November 21, Heermance's Brigade and others were ordered to muster for inspection and to be paid "without a moment's delay" so that they could be discharged. The next day, soldiers

of General Curtenius's Brigade on duty on the Harlem line were ordered to rejoin their regiments, leaving a detail of 150 men from General Van Orden's Brigade to garrison the forts and protect the works at McGowan's Pass and along the Harlem Heights. An "evacuation day" for all New York City defenses was set for November 25 when all troops were ordered to assemble and parade at the Battery and then proceed to City Hall. On November 28, Tompkins formally commended the troops and ordered the militia to be discharged as soon as they could be paid and mustered out. The militia were "to return to their homes follow'd by the applause & blessings of the Country & cheered by the pleasing consciousness of having done their duty, while the City of New York will ever cherish a lively recollection of their services & a full assurance of its future safety whilst it has within its call such a host of intelligent & intrepid defenders" (Tompkins Papers, General Orders, November 21-24 and 28, 1814).

So ended the somewhat frantic, roughly four-month-long defense of New York City during the War of 1812, during which no enemy assault was endured and few shots were fired. During this time, a variety of defensive works were hastily designed by the U.S. Army Corps of Engineers, erected by volunteer citizens and hand-picked state militia under U.S. Army supervision, and then duly manned by militia troops. By early December, the fortifications on Harlem Heights were apparently being manned by a single militia company of perhaps 100 to 150 men for whom provisions were still being issued. On December 11, Captain Stevens, being the senior officer of the militia on duty in and around the City of New York, was instructed to put all the troops into winter quarters on Harlem Heights and furnish the necessary guards for the lines, barracks and arsenal. He was also to report every other day to Governor Tompkins, whose headquarters had just been relocated to Government House on State Street in lower Manhattan (Tompkins Papers, General Orders, December 2, 10 and 11, 1814).

Also, in the week or so following the official discharge of the militia on November 28 there was a flurry of courts martial proceedings at Harlem Heights relating to disciplinary infractions over the preceding three months of militia activity. On November 29, Tunis Van Vleet was charged with desertion on two occasions; James Kain was charged with mutiny and striking an officer; Benent Robinson was charged with absenting himself without leave; and Timothy Knox was charged with refusing guard duty. All were found guilty and three of the four were "drummed out of camp." Other deserters were charged on December 6, while Brigade Quartermaster William Macomb of Heermance's Brigade was discharged on December 1 for several colorful episodes of conduct unbecoming a gentleman, including expressing a wish that "the British had succeeded and blown Baltimore all to Hell" following their assault on Fort McHenry (Tompkins Papers, General Orders and Courts Martial, November 29, December 1 and 6, 1814).

Most of the financial burden of providing for the defense of New York fell upon the city government and taxpayers. The cost of construction materials and the labor for erecting and manning the fortifications was substantial and dogged the city, state and federal governments for several years. As early as December 7, 1814, Governor Tompkins approached William Bayard, President of the Bank of America, attempting unsuccessfully to negotiate a \$200,000 loan to pay the state militia. Tompkins subsequently became entangled in an audit of the military accounts, which had gotten confused with his own personal finances during the war. Due to poor recordkeeping and financial controls, he was unable to collect money owed to him from the state or federal governments, resulting in multiple law suits. Although the courts eventually ruled that Tompkins was owed a considerable sum, the emotional stress of the financial difficulties took a toll on Tompkins' health, even as he became Vice President of the United States under President James Monroe from 1817 to 1825. Tompkins died on June

11, 1825, less than four months after the end of his term as Vice President, with many observers believing that alcoholism and stress had contributed to his death at the age of 54.

The final weeks of 1814 were something of an anticlimax for New Yorkers. The War of 1812 was clearly winding down and military preparedness was no longer the priority it had been earlier in the fall. The Treaty of Ghent was concluded on Christmas Eve, but word of the cessation of hostilities did not arrive in time to prevent General Andrew Jackson's victory over the British at the Battle of New Orleans on January 8, 1815. On February 16, the U.S. Senate officially ratified and President Madison finally signed the Treaty of Ghent, finally bringing the war to a close.

C. AFTER THE WAR OF 1812

The fate of the Harlem line fortifications, and more specifically of Blockhouse No. 1, following the conclusion of the War of 1812, is not easy to establish in terms of a detailed chronology. Ultimately, over the course of the 19th century, and mostly prior to the Civil War, the physical fabric of the defenses was largely removed and the sites of the various redoubts, earthworks and encampments were swallowed up by the northward march of New York City's urban expansion. Blockhouse No. 1 has survived down to the present day in part because of its solid masonry construction, but chiefly because it was incorporated within Central Park and has thus been afforded protection from the forces of urban development.

Certainly, some of the defenses were being dismantled within a few months as there was a report of the auctioning off of planks and timber on the line of blockhouses at McGowan's Pass and Fort Clinton in the spring of 1815 (Tompkins Papers, April 6, 1815). One might expect that the two timber blockhouses (Nos. 2 and 3) were disassembled early on, along

with the timber decking from the ramparts. Timber construction will undoubtedly have lent itself more easily to disassembly than stone masonry and earthworks, so the outlines of redoubts and linear fortifications likely persisted in the landscape with greater durability. The two stone blockhouses both survived partially intact into the 20th century, with the ruins of both Blockhouses No. 1 and 4 being documented by the Historic American Buildings Survey in the mid-1930s. Blockhouse No. 4, also known as Fort Laight, was finally removed in 1967 to make way for the construction of Public School No. 36. Interestingly, the gatehouse at McGowan's Pass was still largely intact in 1823 with its stone piers causing a major obstruction to traffic on the Kingsbridge Road. The structure was the subject of a public auction on June 3 of that year with the buyer obligated to take down and remove the materials. Sold to a Mr. Tuttle for a meager \$65, the gatehouse had still not been removed by October and a lawsuit was being contemplated by the federal government on behalf of the City of New York (Records of the Office of the Quartermaster General, Letter, General Morton to General Scott, February 25, 1823; Captain Bender's Report to General Scott, April 26, 1823; Letter, Captain Bender to General Jesup, October 23, 1823).

After the war, Blockhouse No. 1 likely existed as something of a military curiosity or even "folly" on the 100-acre property of Valentine Nutter. The structure is clearly shown on John Randel's "Farm Maps," completed in 1818-20 (Figure 2.15), and one can imagine Nutter putting the building to some use, perhaps for storage of farm tools or lumber. Nutter died in 1836 and a map published in that year shows the blockhouse marked as "Tower," perhaps implying a certain level of intactness and accessibility (Figure 2.16). The outlines of the defenses at McGowan's Pass are also very clearly in evidence still, although much of the immediately surrounding bluff-top landscape is heavily wooded.



Figure 2.15. Randel, John. Detail of "Randel Farm Maps." 1818-20. Scale 1 inch = 335 feet (approximately). Limits of Central Park outlined and Blockhouse No. 1 circled.

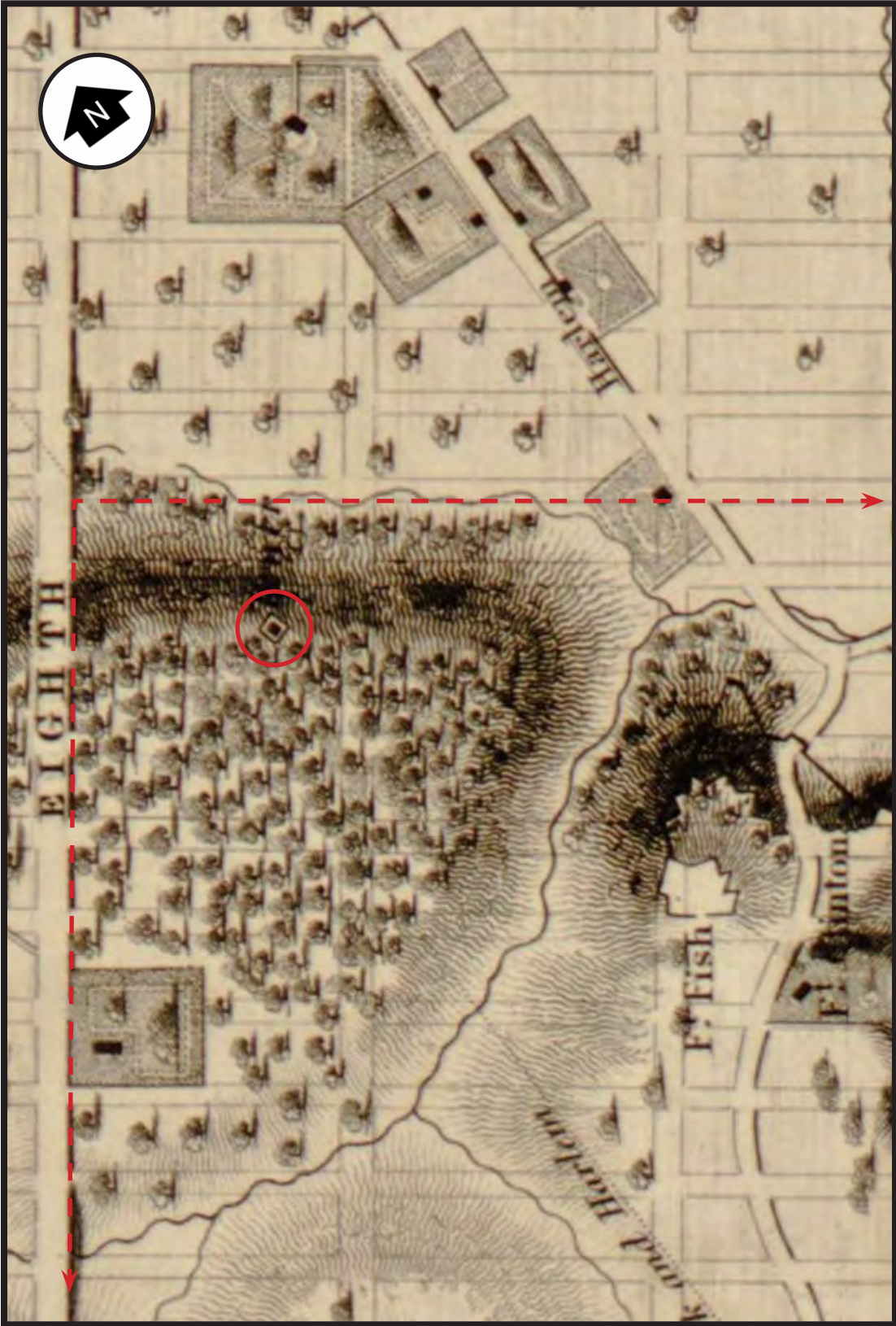


Figure 2.16. Colton, J.H. Detail of *Topographical Map of the City and County of New-York, and the Adjacent Country*. 1836. Scale 1 inch = 545 feet (approximately). Limits of Central Park outlined and Blockhouse No. 1 circled.

The condition and use of Blockhouse No. 1 remains unclear from the 1830s up until the time Central Park was created in the late 1850s and early 1860s. The structure is shown on the earliest topographic maps surveyed for the northerly extension of the park in 1860 and it is interesting to note that, prior to landscaping of this part of the park, access to the blockhouse was achieved via a winding pathway approaching from the west, terminating in a loop outside the doorway (Figure 2.17). Several other buildings of varying shapes and sizes are also depicted nearby, including one structure to the west that may be a dwelling. Most of the other structures are smaller than the blockhouse and are likely to be sheds or outbuildings.

The “damage maps” prepared by John Bagley for the northern extension of the park, also surveyed in 1860, indicate that the blockhouse was a “magazine” and that the land on which it was located was owned by Henry H. Elliott (Figure 2.18). Although not researched in depth, Elliott may be the Henry H. Elliott who served during the Civil War as Quartermaster of the Ninth New York Volunteers and/or in Company A of the 92nd Infantry of the Union Army, and was later appointed a prize commissioner for the port of New York (Henry H. Elliott 2019). The identification of the blockhouse as a magazine, also not researched in depth, is thought to mean the building was being used, perhaps by the City of New York, for storing explosives (Elliott’s role as quartermaster may be relevant here). While such explosives may have taken the form of munitions for militia use, it is perhaps more likely that this material was for blasting on public works projects such as road building or basement construction. One other reference to the blockhouse being a magazine appears in the Annual Report of the Central Park Commissioners for 1864, which notes that a “roof, added at a later date, render it serviceable as a magazine” (*Eighth Annual Report* 1865:8).

Also dating from around 1860 is the lithographic view titled “Remains of Block-house overlooking Harlem Plains in 1860” included in Benson J. Lossing’s *The Pictorial Field-Book of the War of 1812* (Figure 2.19). This view, looking northeast, is problematic for it appears to show an arched entry at ground level toward the northern end of the west wall. This entry has defied all architectural and archaeological interpretation (see below, Chapters 4 and 5), and one can only conclude that it is a loose and perhaps poorly memorized representation of the door that is visible in the west wall in the earliest surviving photographs of the blockhouse taken in the mid-1860s (Photographs 2.1 and 2.2). These photographs depict a door toward the southern end of the west wall (in the same location as, but a smaller version of the present-day door) to which access was evidently achieved through a moveable stair or ladder. Along with a third photograph from the mid-1860s (Photograph 2.3), these early views show the blockhouse with a low gabled roof and blocked gunports, both strong indications that the structure was sealed tight, consistent with its usage as a magazine. The Lossing view, in contrast, seems to show an unroofed structure, perhaps in the early stages of ruination, which in conjunction with the arched entry, suggests that some artistic license has been taken in the name of “picturesqueness” (Lossing 1868).

The mid-1860s photographs reveal that the rock outcrop on which the blockhouse was situated was largely devoid of vegetation. One wonders how much vegetation may have been stripped away to facilitate landscaping when the park was created, while there is, in one of the photographs (Photograph 2.2), a curious linear pile of stone rubble that may reflect demolition or impending construction of some sort. Early maps of the drives and paths in this portion of the park show some rather optimistic, projected path alignments around the blockhouse, notably to the north and northwest of the building, that would have been challenged by the natural topography (Figures 2.20 and 2.21).



Figure 2.17. Detail of "Topographical Map of Central Park Extension from 106th to 110th Streets & from V to VIII Ave." 1860. Scale 1 inch = 220 feet (approximately). Limits of Central Park outlined and Blockhouse No. 1 circled.

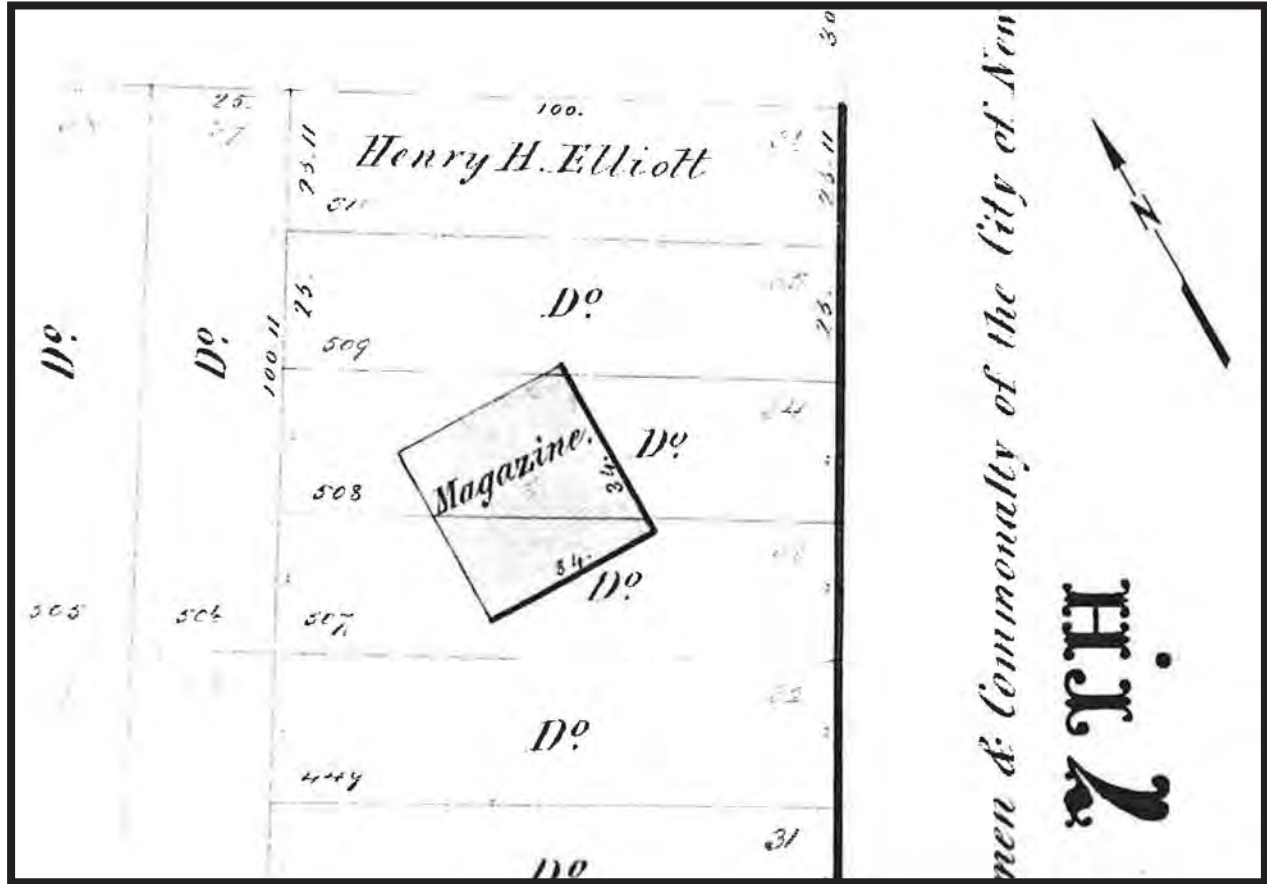


Figure 2.18. Bagley, John. Detail of "Damage Maps – Central Park Extension." 1860. Scale 1 inch = 35 feet (approximately). Note the use of Blockhouse No. 1 as a magazine at this time.

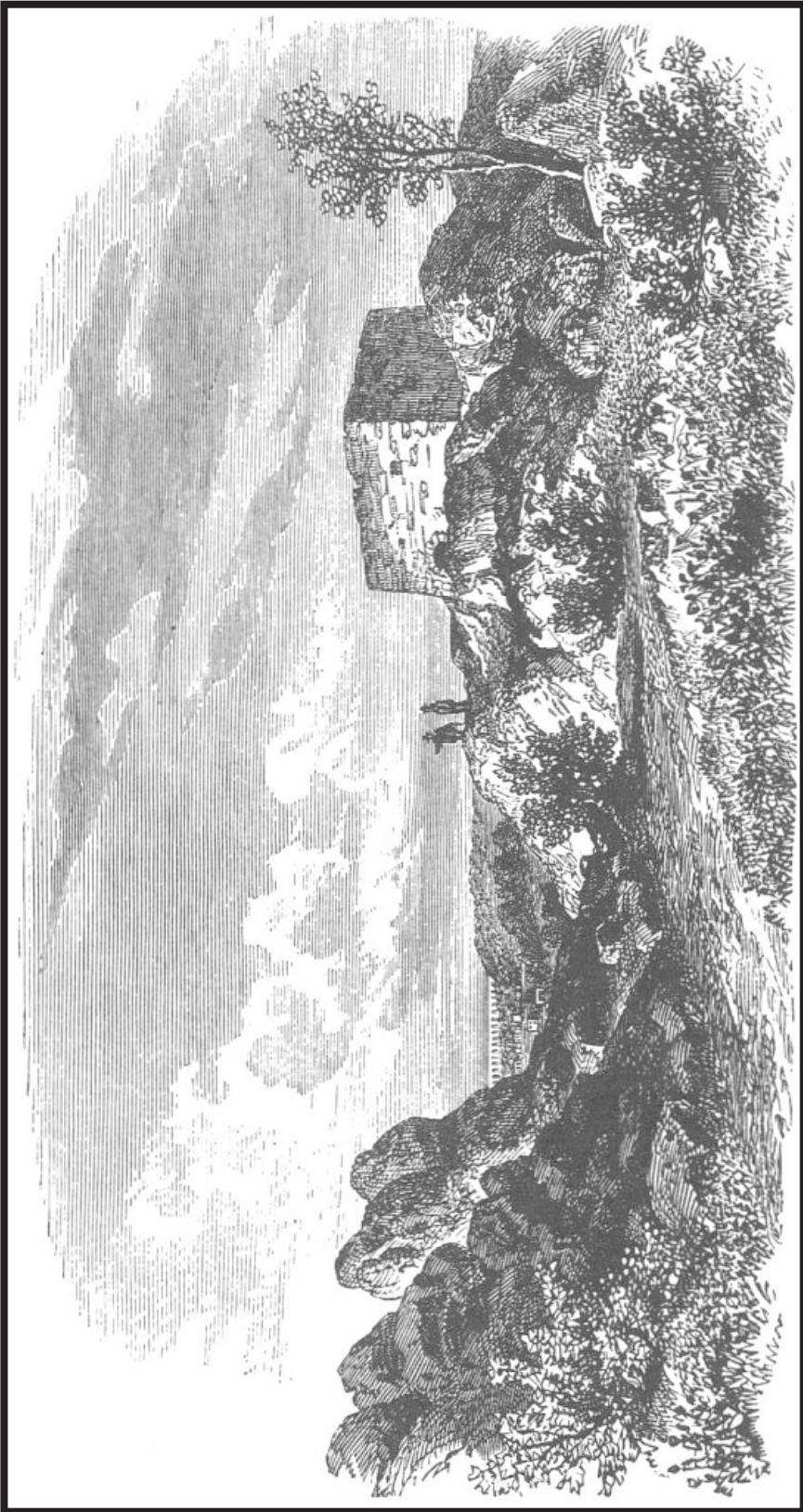
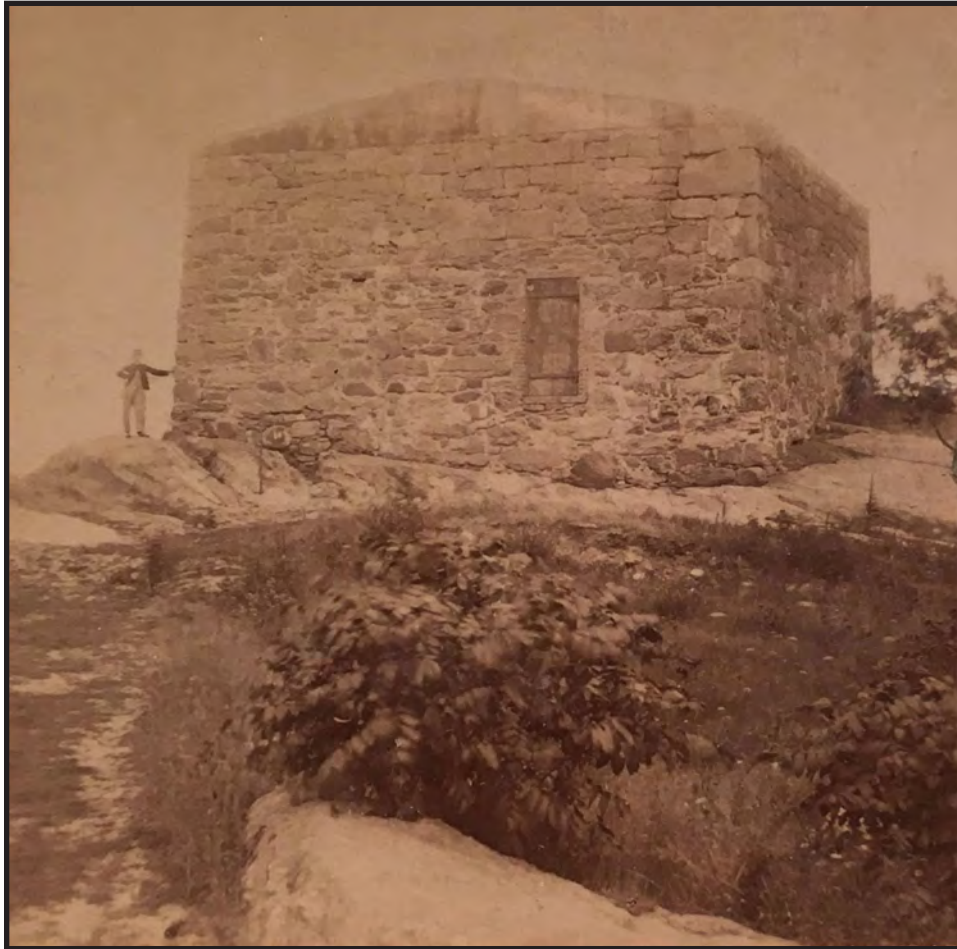


Figure 2.19. Lossing, Benson J. Remains of Block-House Overlooking Harlem Plains in 1860. 1868. This view is looking northeast; note the arch shown toward the northern end of the west wall, a feature for which no clear architectural or archaeological evidence has been found.



Photograph 2.1. Historic view looking east, *circa* 1865. Note shallow pedimented roof, blocked embrasures, iron door and absence of stair. The blockhouse at this time may still have been in use as a magazine for storing gunpowder. Source: E. and H.T. Anthony and Company, Stereographic View No. 1899 (Metropolitan Museum of Art, Herbert Mitchell Collection 2007.457.68).



Photograph 2.2. Historic view looking northeast, *circa* 1865. Note shallow pedimented roof, blocked embrasures, iron door and absence of stair. The blockhouse at this time may still have been in use as a magazine for storing gunpowder. Source: E. and H.T. Anthony and Company, Stereographic View No. 1898 (Metropolitan Museum of Art, Herbert Mitchell Collection 2007.457.71).



Photograph 2.3. Historic view looking southwest, *circa* 1865. Note shallow pedimented roof and blocked embrasures. The blockhouse at this time may still have been in use as a magazine for storing gunpowder. Source: Unknown Photographer, Stereographic View (Metropolitan Museum of Art, Herbert Mitchell Collection 2007.457.67).

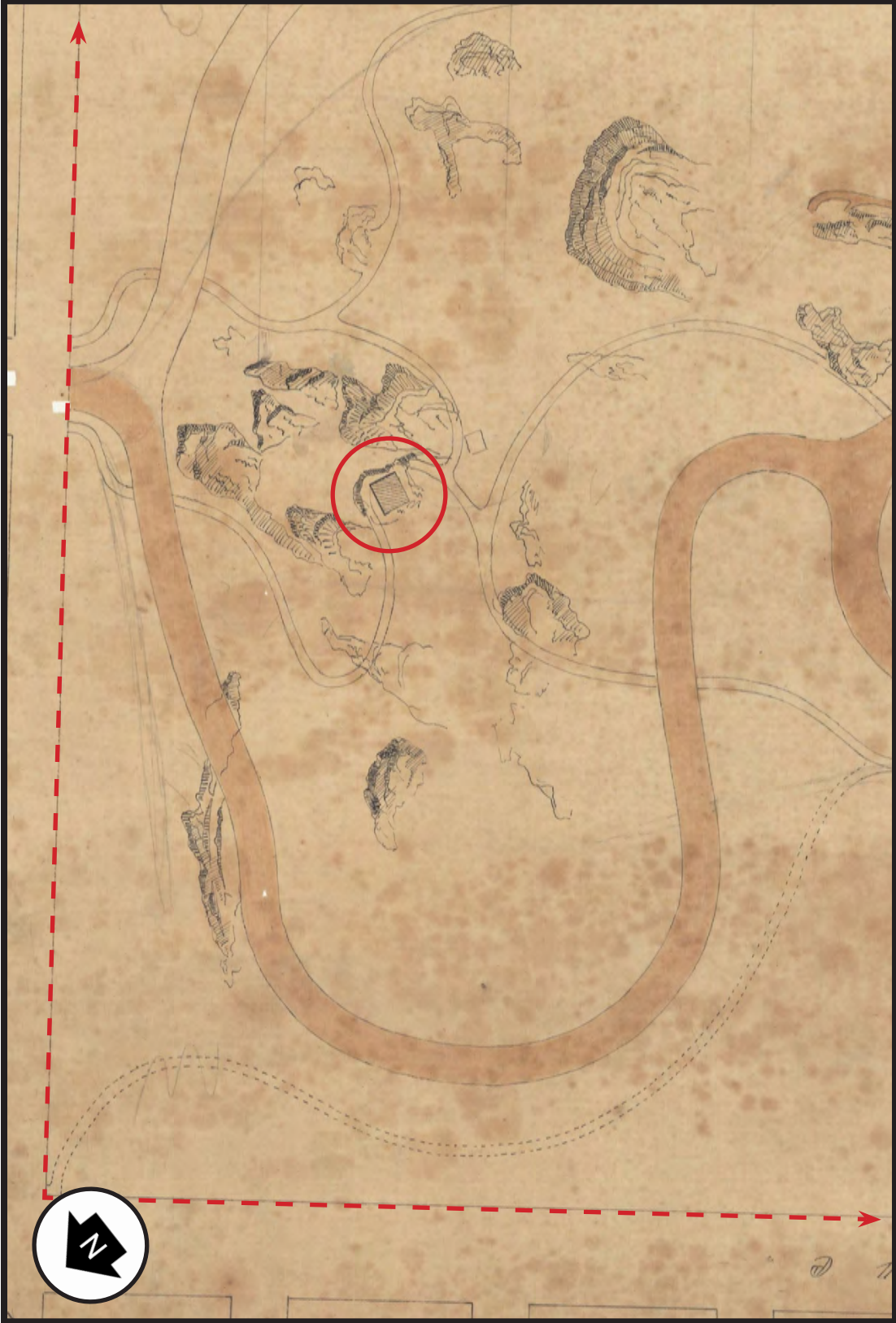


Figure 2.20. Detail of "Plan of Drives." 1863. Scale 1 inch = 200 feet (approximately). Limits of Central Park outlined and Blockhouse No. 1 circled.



Figure 2.21. Detail from "Map of the Central Park." 1864. Scale 1 inch = 275 feet (approximately). Limits of Central Park outlined and Blockhouse No. 1 circled.

By the 1870s, Blockhouse No. 1 had evidently ceased its role as a magazine and was being welcomed into the park landscape as a quaint and sturdy ruin (Figure 2.22; Photograph 2.4). Coniferous plantings had been installed to the southwest of the building; a flagpole had been erected; and the doorway was accessible by a permanent exterior stair and open to visitors. However, the structure was also open to the elements and overrun with vines, most likely ivy, and no effort appears to have been directed toward its preservation or maintenance. As photographs and sketches betray, the blockhouse was a charming picnic spot with a hint of history.

By the late 1890s the blockhouse was described as being much neglected, filled with trash and closed up, but a move was afoot in the City led by the Society for the Preservation of Scenic and Historic Places and Objects to rehabilitate the building. To that end, plans were drawn up to repair and partially reconstruct the walls, rebuild the exterior steps, and install an enclosed stairway and observation platform in the interior (Figure 2.23). By late 1899, the New York City Department of Parks had restored the blockhouse and a photograph taken in that year shows the radical extent of this make-over (Photograph 2.5). As seen in this view, the tops of the walls had been reconstructed and finished off with capstones, the flagpole had been moved to the northeast corner and the exterior had been largely cleared of vegetation. Visitors could enter through what appears to be a new iron door, climb the interior stair and view the surrounding landscape from the platform set roughly five feet below the top of the wall parapet. Other views of the blockhouse photographed over the following decade show the structure in a well-maintained state within a lightly landscaped rustic setting (Photographs 2.6 and 2.7) (*Annual Report of the Society for the Preservation of Scenic and Historic Places and Objects* 1899:10; Women's Auxiliary to the American

Scenic and Historic Preservation Society 1904; *Tenth Annual Report, 1905, of the American Scenic and Historic Preservation Society* 1905:34).

Historian Edward Hagaman Hall, writing in 1905 and again in 1911, provides an instructive description of the blockhouse at this time, also explaining that in his interpretation the building was originally designed to mount a single traversing gun on its recessed roof, which would have corresponded to the reconstructed observation platform. However, he went on to note that no cannon were ever mounted on any of the four War of 1812 blockhouses (Hall 1905:34-35; 1911:423-424). Also, in 1905, the Women's Auxiliary to the American Scenic and Historic Preservation Society placed a memorial plaque on the exterior of the west wall above the doorway, which read:

This Blockhouse was part of a Line of Fortifications extending from the Hudson to the Harlem River, built for the defence of New York by its Patriotic Citizens during the War of 1812-1815. This Tablet is Erected by The Women's Auxiliary to the American Scenic and Historic Preservation Society A.D. 1905 (Hall 1905:34; *Eleventh Annual Report, 1906, of the American Scenic and Historic Preservation Society* 1906:120; Hall 1911:424).

This tablet was still present in 1936 when both Blockhouses Nos. 1 and 4 were documented by the Historic American Buildings Survey (Figure 2.24; Photographs 2.8 and 2.9). Blockhouse No. 1 still appears to have been good repair in the mid-1930s, although the plan view recorded at this time shows no indication of the interior modifications made in the late 1890s. It is not known when the stair and observation platform were removed. Deterioration of the blockhouse, due principally to lack of maintenance, appears to have become a problem from World War II onward, persisting through much of the second half of the 20th century. Photographs from the early 1960s, however, show the basic shell of the blockhouse struc-



Figure 2.22. Farrer, Henry. Powder Magazine in C.P. 1877.



Photograph 2.4. Historic view looking northeast, *circa* 1875. Note flagpole in northeast corner of the building, stair leading up to doorway and apparent removal of pedimented roof. The blockhouse is clearly no longer in use as a magazine for storing gunpowder by this date. Source: Unknown Photographer, Stereographic View (Metropolitan Museum of Art, Herbert Mitchell Collection 2007.457.69).

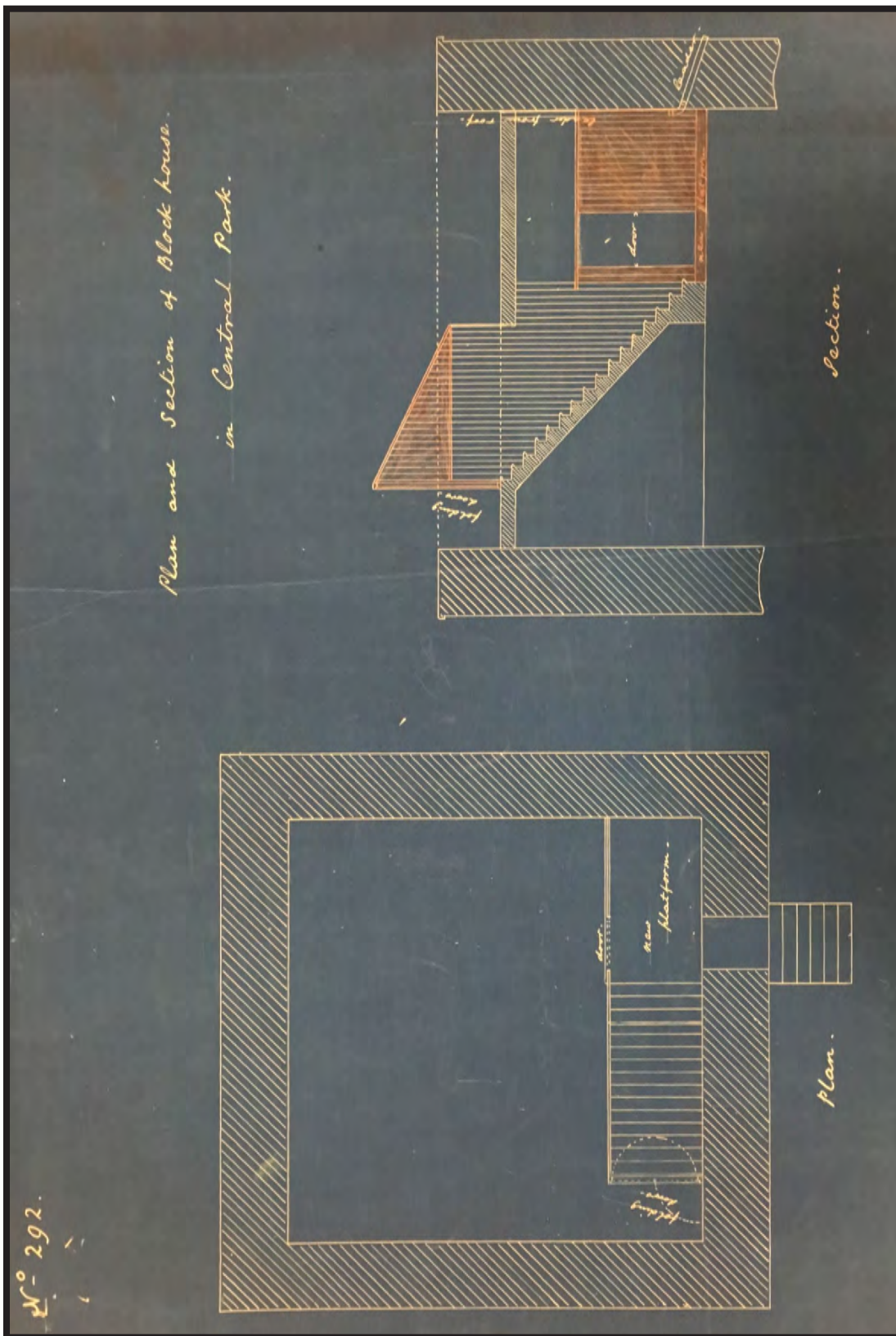


Figure 2.23. Plan and Section of Block house in Central Park. Circa 1899.



Photograph 2.5. Historic view looking southeast, 1899. Note flagpole in northeast corner of the building, interior stairway hood along west wall, restored masonry, embrasures and parapet, and wooden exterior stair leading up to iron door. Source: George E. Stonebridge (New-York Historical Society, George E. Stonebridge Collection 63861-4868).

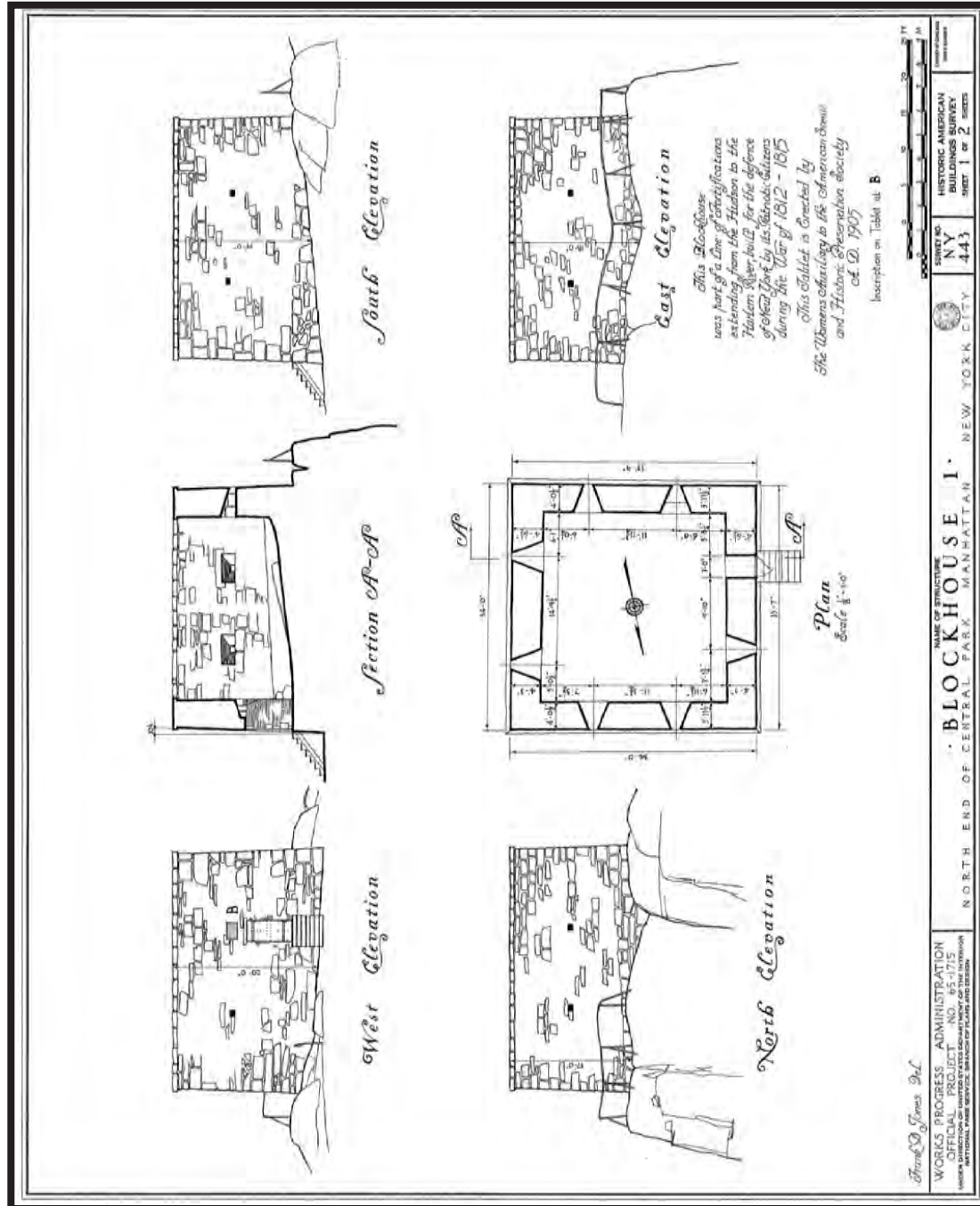


Figure 2.24. Historic American Buildings Survey. Blockhouse 1. Plan, Section and Elevations. 1936.



Photograph 2.6. Historic view looking east northeast, 1904. Note flagpole in northeast corner of the building, interior stairway hood along west wall, restored masonry, embrasures and parapet, and wooden exterior stair leading up to iron door. Source: Unknown Photographer (New-York Historical Society, R.S. Guernsey Lecture 20592).



Photograph 2.7. Historic view looking northwest, 1909. Note flagpole in north-east corner of the building, restored masonry, embrasures and parapet. Source: Unknown Photographer, Stereographic View (Metropolitan Museum of Art, Herbert Mitchell Collection 2007.457.70).



Photograph 2.8. Historic view looking northeast, February 16, 1936. Note flagpole in northeast corner of the building, absence of interior stairway hood along west wall, restored masonry, embrasures and parapet, and wooden exterior stair leading up to iron door. Source: Wakefield Worcester (Historic American Buildings Survey NY 443).



Photograph 2.9. Historic view looking east, May 12, 1936. Note flagpole in northeast corner of the building, restored masonry, embrasures and parapet, and wooden exterior stair leading up to iron door. Source: Arnold Moses (Historic American Buildings Survey NY 443).



Photograph 2.10. Historic view looking southwest, May 1962. Note flagpole in northeast corner of the building, restored masonry, embrasures and parapet, iron railing and ladder. Source: New York City Parks Department (Central Park Conservancy 31592).



Photograph 2.11. Historic view looking northeast, May 1962. Note flagpole in northeast corner of the building, restored masonry, embrasures and parapet, iron ladder, and brick and stone exterior stair. Source: New York City Parks Department (Central Park Conservancy 31593).

ture to be in reasonable condition (Photographs 2.10 and 2.11). Again, it is not known when the entrance and door in the west wall were modified to take on their present-day appearance, although this occurred subsequent to 1936. The heightening of the doorway, removal of the door and installation of an iron grille evidently resulted in the removal of the Women's Auxiliary plaque, which is presumed to still be held in storage somewhere by the Department of Parks.

Chapter 3

DIGITAL SCANNING AND DOCUMENTATION

Hunter Research oversaw a program of three-dimensional laser scanning of Blockhouse No. 1 and the immediately surrounding area (approximately 0.15 acres) undertaken by subconsultant ESP Associates, Inc. (Photographs 3.1 and 3.2). The goal of this activity was to produce detailed and accurate documentation of the blockhouse in a digital format that could be used in the development of a preservation plan for the structure. This activity was conducted in a single day of fieldwork and involved documenting the interior, exterior and top faces of all four blockhouse walls.

ESP Associates conducted the three-dimensional laser scanning of the blockhouse on March 30, 2017 using a Leica P40 scanner (Photograph 3.3). A Virtual Reference Station Global Positioning System (VRS GPS) was used to assign New York State Plane Coordinates (Long Island Zone – 3104) and NAVD 88 (Geoid 12B) to establish the horizontal and vertical locations of the datums used during scanning (Photograph 3.4). Imagery was also collected from the scanner's internal cameras to colorize the resulting point cloud.

Once the data were collected they were processed by ESP Associates with the use of Leica Cyclone three-dimensional point cloud processing software, 3DReshaper texture mapping software and AutoCAD mapping software. The resulting products included digital copies of a topographic map depicting the blockhouse and the immediate surrounding rock outcrops, a plan section of the blockhouse at 120.18 feet above sea level, colorized point data elevations of the exterior of the blockhouse and a 3D mesh textured with images and site video fly-through using

3DReshaper (Figures 3.1-3.6). In addition to the AutoCAD .DWG files the raw data were provided in .LAS and .JSV formats.

Hunter Research opened and manipulated the .LAS files using Autodesk ReCap to create colorized points (using RGB information) and generate intensity map three-dimensional files of the blockhouse. The intensity map images show the reflective quality of the material being scanned and help to accentuate the differences in the masonry (Figure 3.7). These three-dimensional images were then exported as rectified images for tracing in Adobe Illustrator. Tracing of each of the exterior and interior elevations was done manually and annotated (Figures 3.8-3.15). Digital versions of these files are also available upon request.



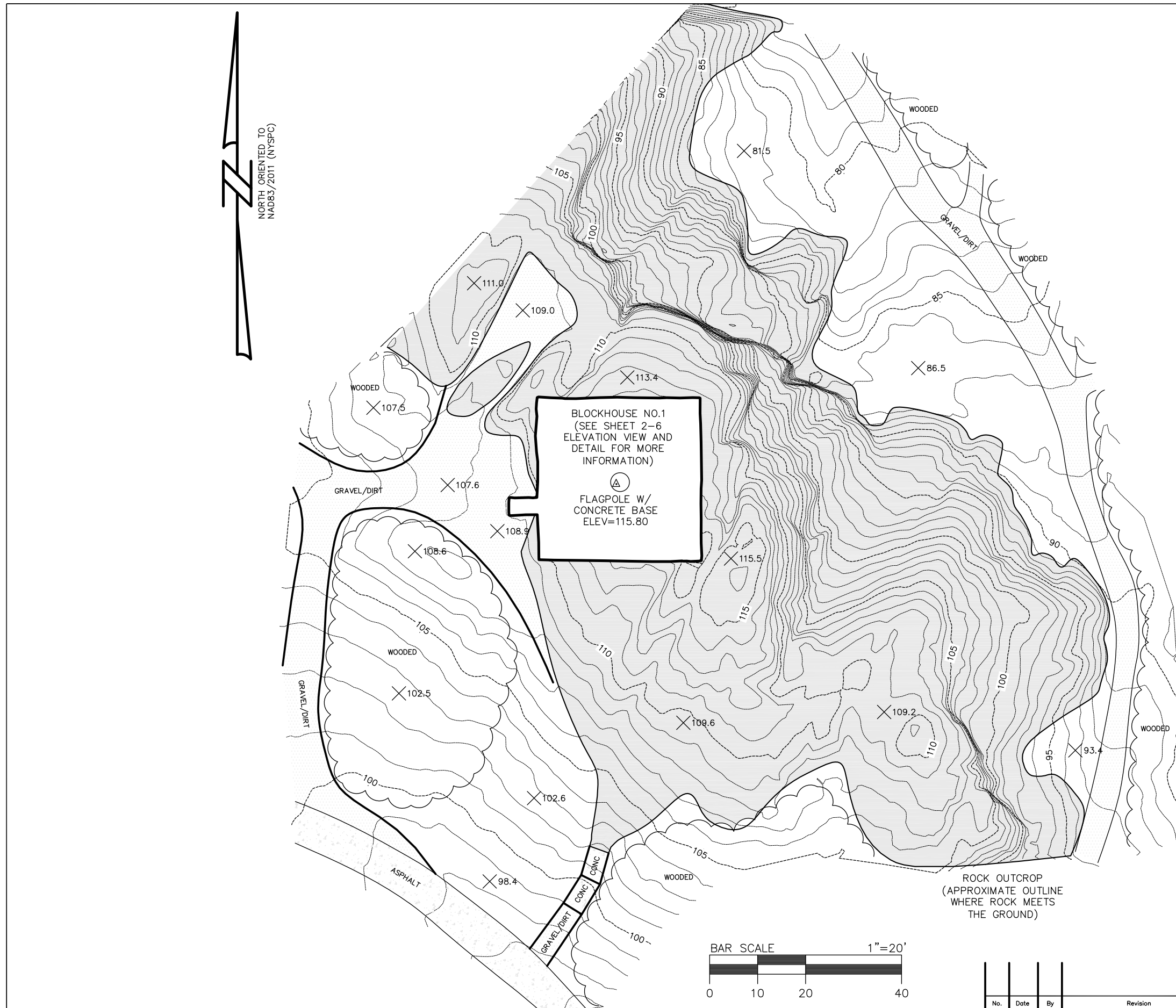
Photograph 3.1. View facing northeast showing digital laser scanning equipment being set up southwest of the blockhouse to scan the western and southern facades (Photographer: James Lee, March 2017 [HRI Neg.#17013/D1:002]).



Photograph 3.2. View facing southwest showing the view up towards the blockhouse from one of the scanning locations (Photographer: James Lee, March 2017 [HRI Neg.#17013/D1:011]).



Photograph 3.3. View facing southeast showing digital laser scanning equipment being set up on top of the southern wall of the block-house to scan the top and interior (Photographer: James Lee, March 2017 [HRI Neg.#17013/D1:017]).

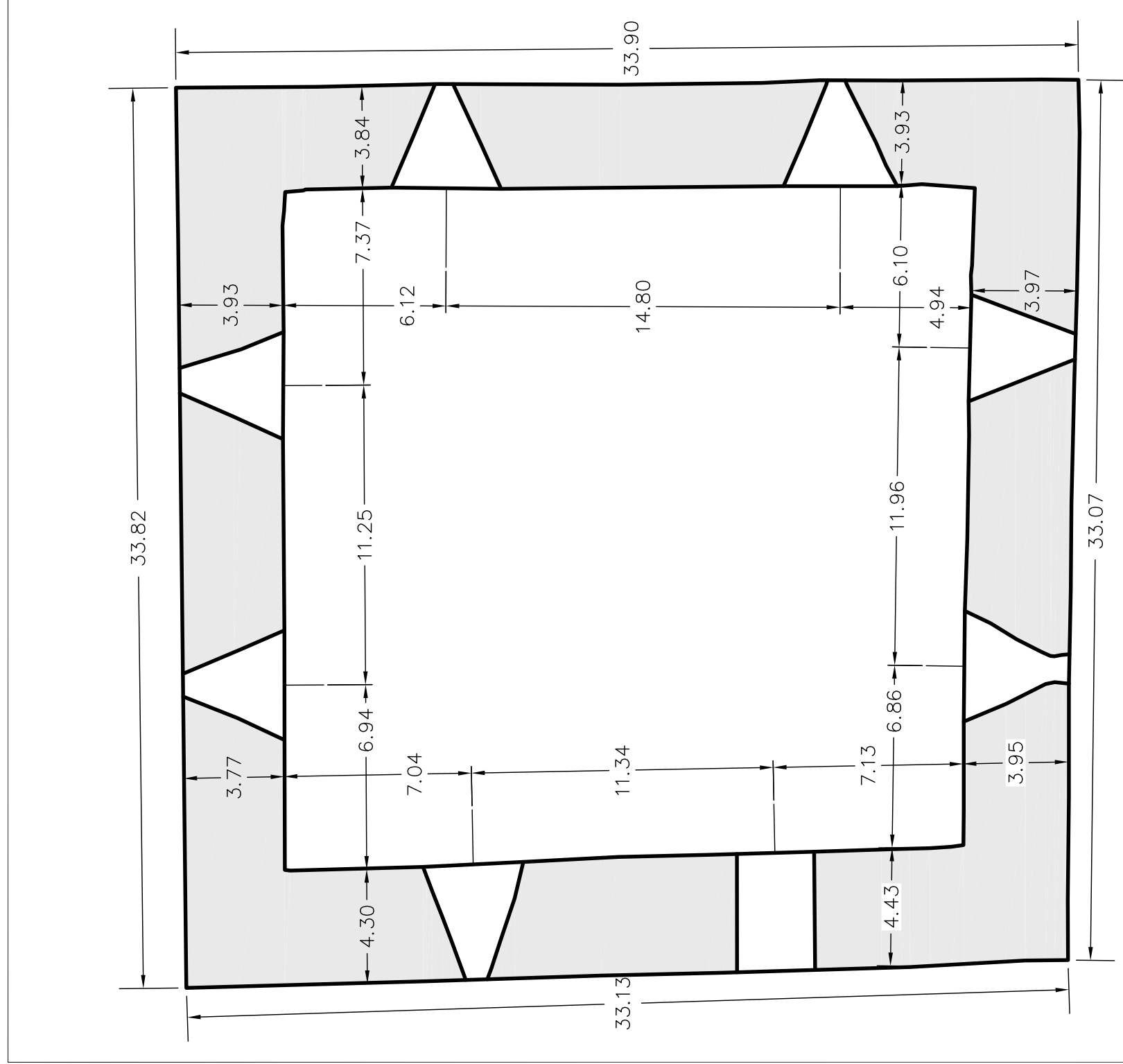


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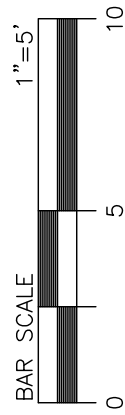
ESP Associates. P.A. P.O. Box 7030 3475 Lakemont Blvd. Charlotte, NC 28241 Fort Mill, SC 29708 704-583-4949 (NC) 803-802-2440 (SC) www.espassociates.com		Scale: 1"=20'	
		Date: 05/12/2017	
TOPOGRAPHIC SURVEY OF BLOCKHOUSE NO.1 NORTH END OF CENTRAL PARK		Drawing No. NYC_Block..dwg	
CITY OF NEW YORK STATE OF NEW YORK		Job No. FO45.800	
FO45.800	NA	WJD	RD
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			Sheet 1 of 6

Figure 3.1. Blockhouse No. 1, Site Topographic Survey.



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www.espassociates.com

**PLAN VIEW AT ELEVATION 120.18
 OF BLOCKHOUSE NO.1
 NORTH END OF CENTRAL PARK
 NEW YORK, NEW YORK**

SCALE: 1"=5' DATE: MAY 12, 2017
 CLIENT: HUNTER RESEARCH DRAWN BY: J. DIXON
 CHECKED BY: R. DAWBER
 ESP PROJ#: FO45.800.000 PAGE: 6 OF 6

Figure 3.2. Blockhouse No. 1, Plan View at Elevation 120.18.



Photograph 3.4. View facing north showing GPS surveying of the datum for the topographic scan (Photographer: James Lee, March 2017 [HRI Neg.#17013/D1:024]).

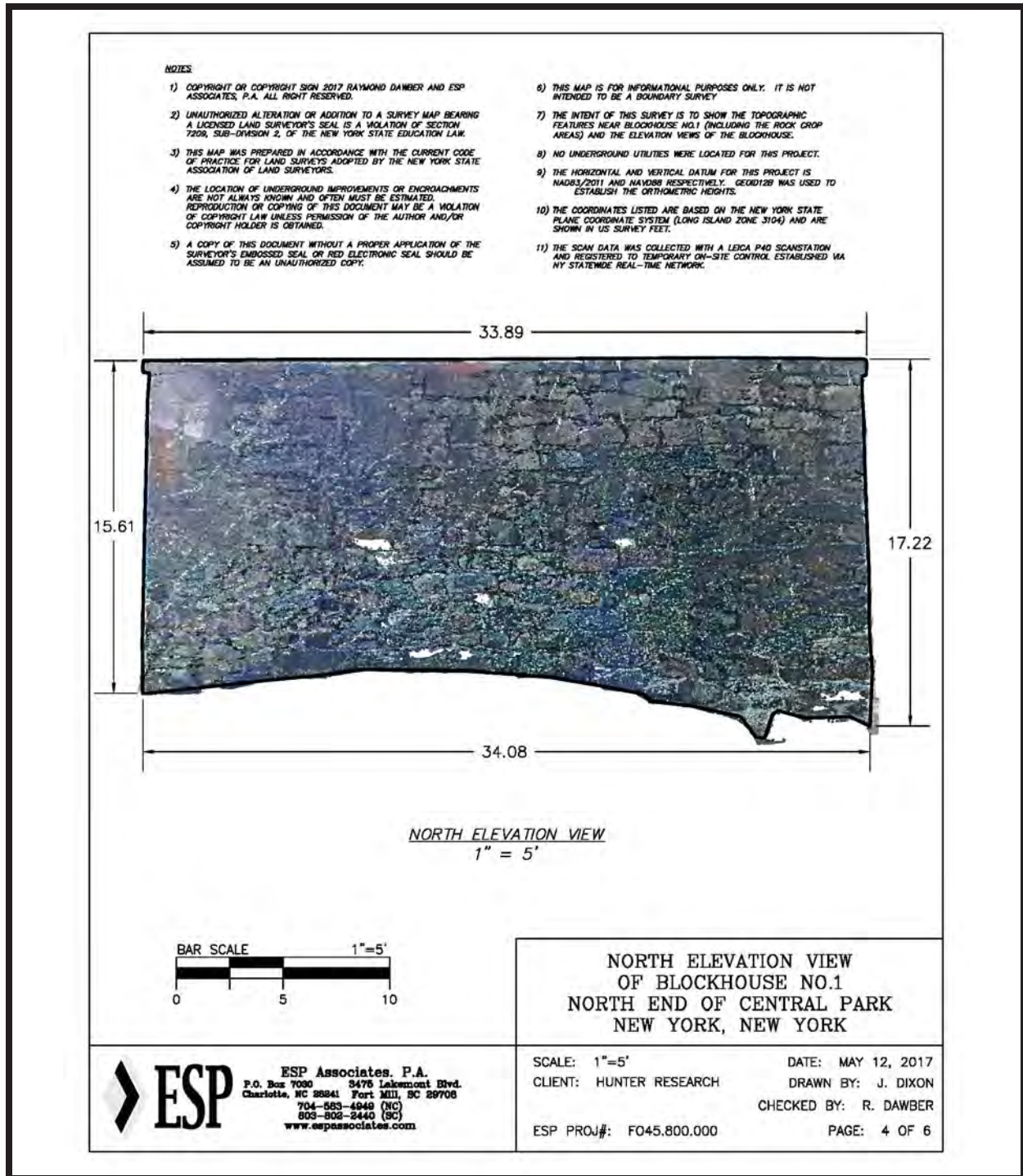


Figure 3.3. Blockhouse No. 1, North Exterior Elevation, Laser Scan.

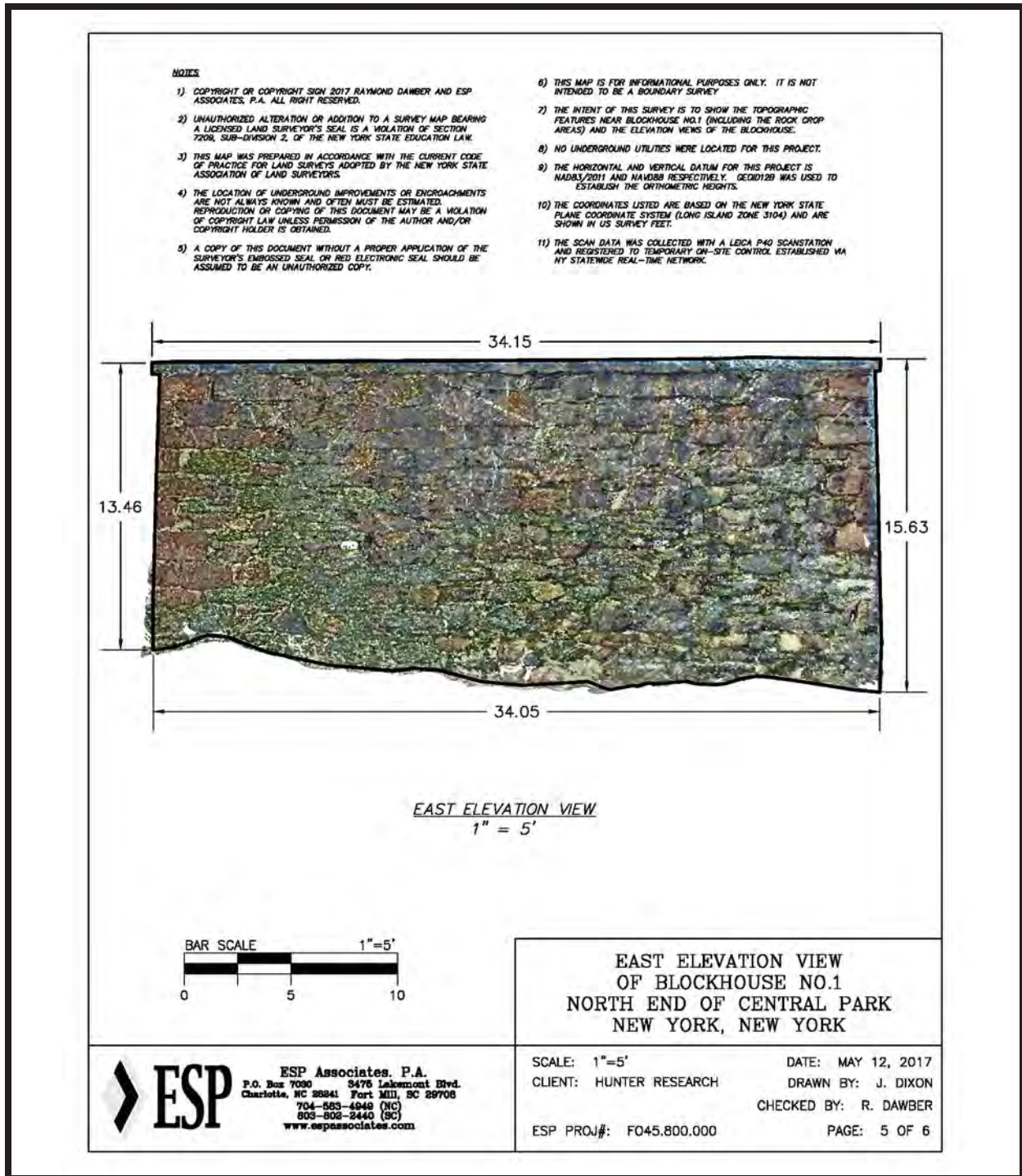


Figure 3.4. Blockhouse No. 1, East Elevation View, Laser Scan.

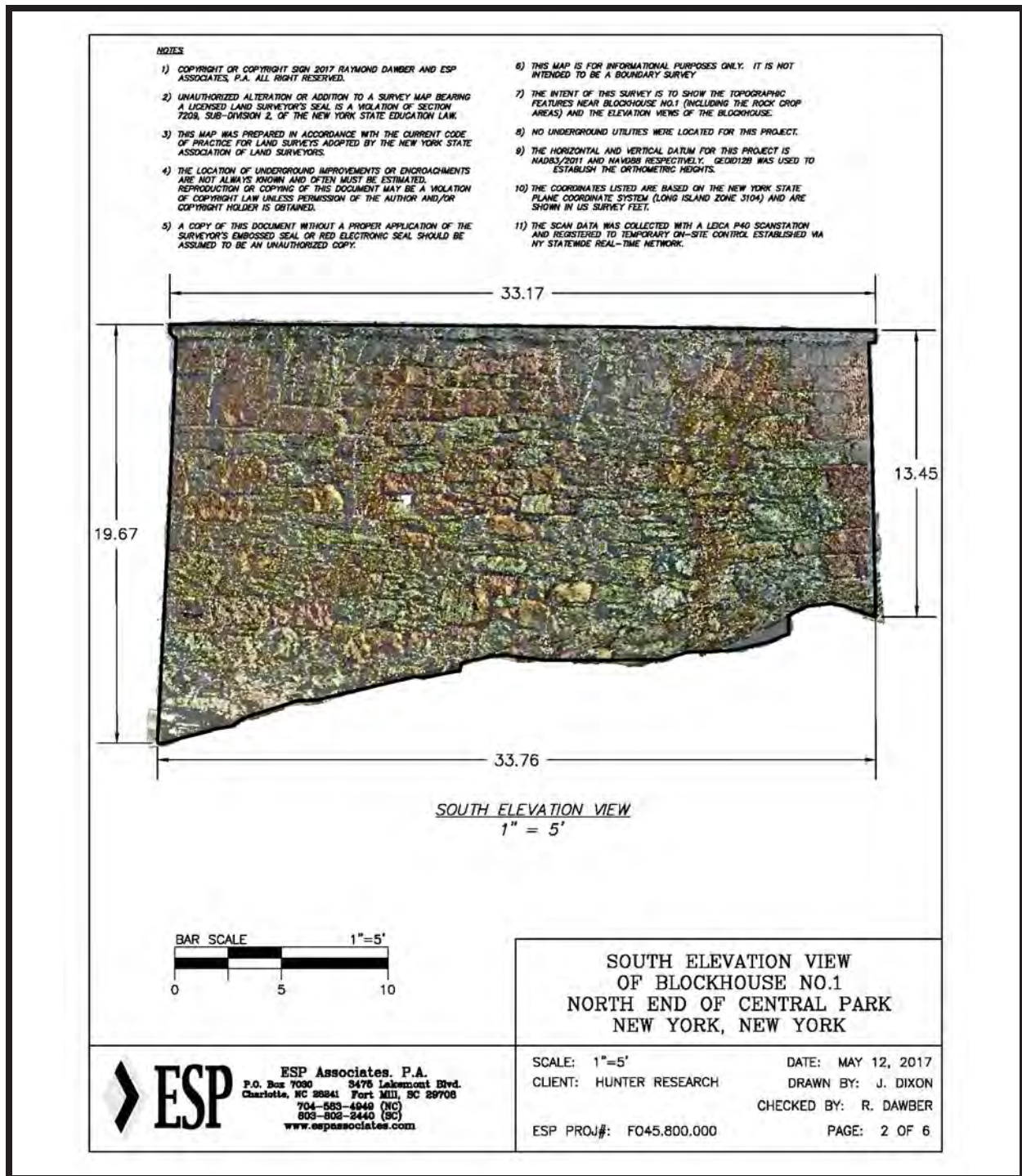


Figure 3.5. Blockhouse No. 1, South Elevation View, Laser Scan.

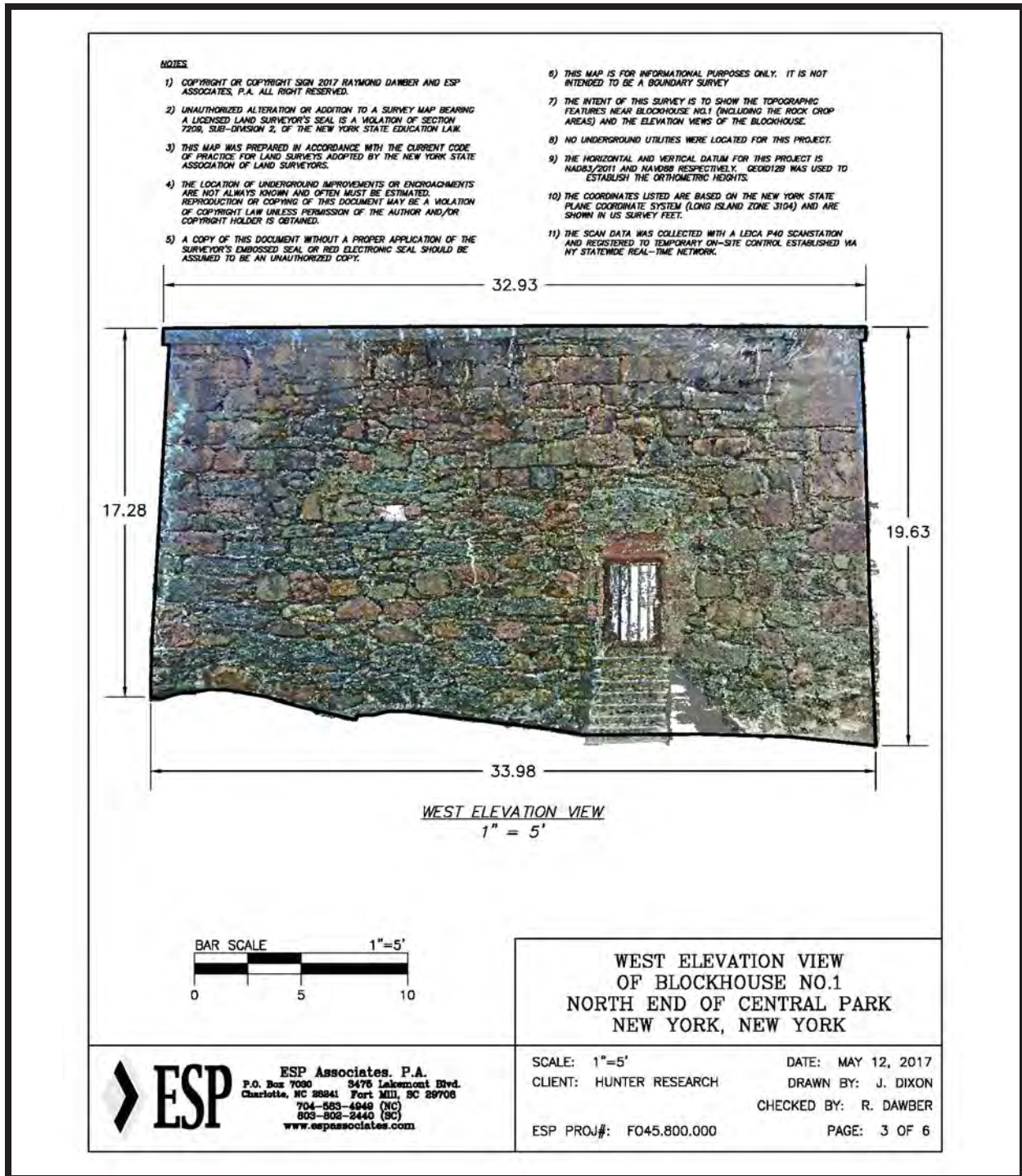


Figure 3.6. Blockhouse No. 1, West Elevation View, Laser Scan.

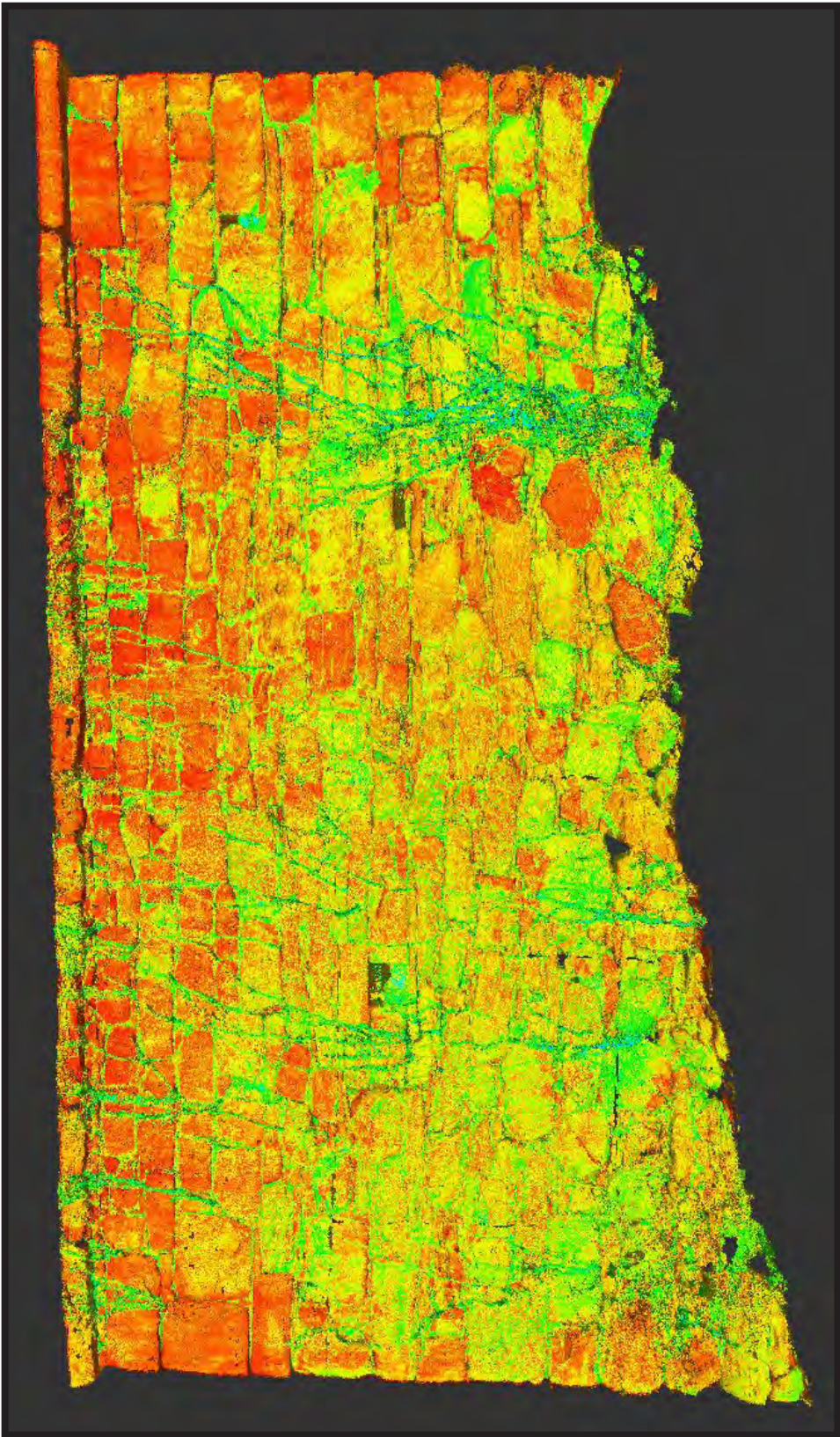


Figure 3.7. Blockhouse No. 1, Intensity Map.

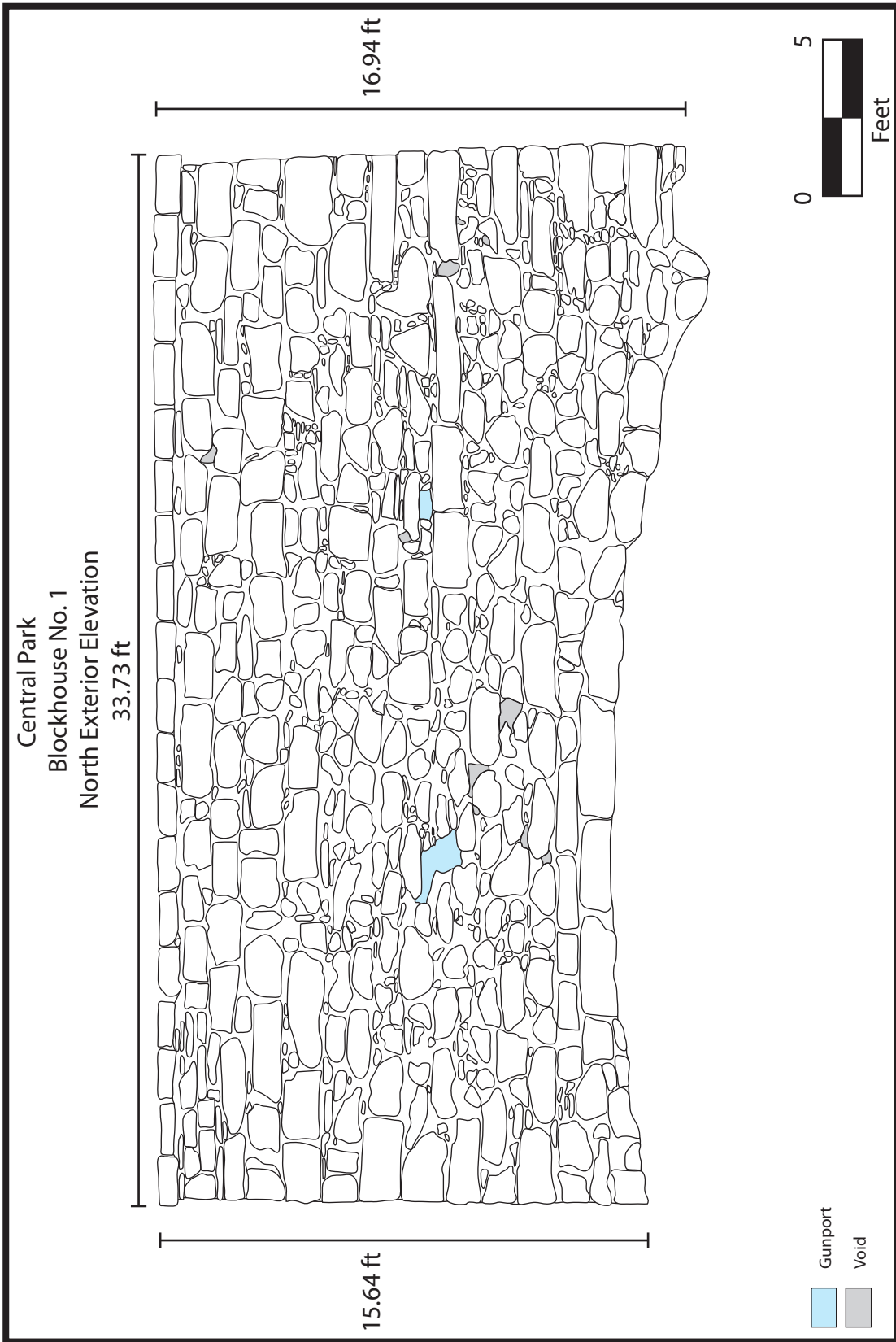


Figure 3.8. Blockhouse No. 1, North Exterior Elevation, Line Drawing.

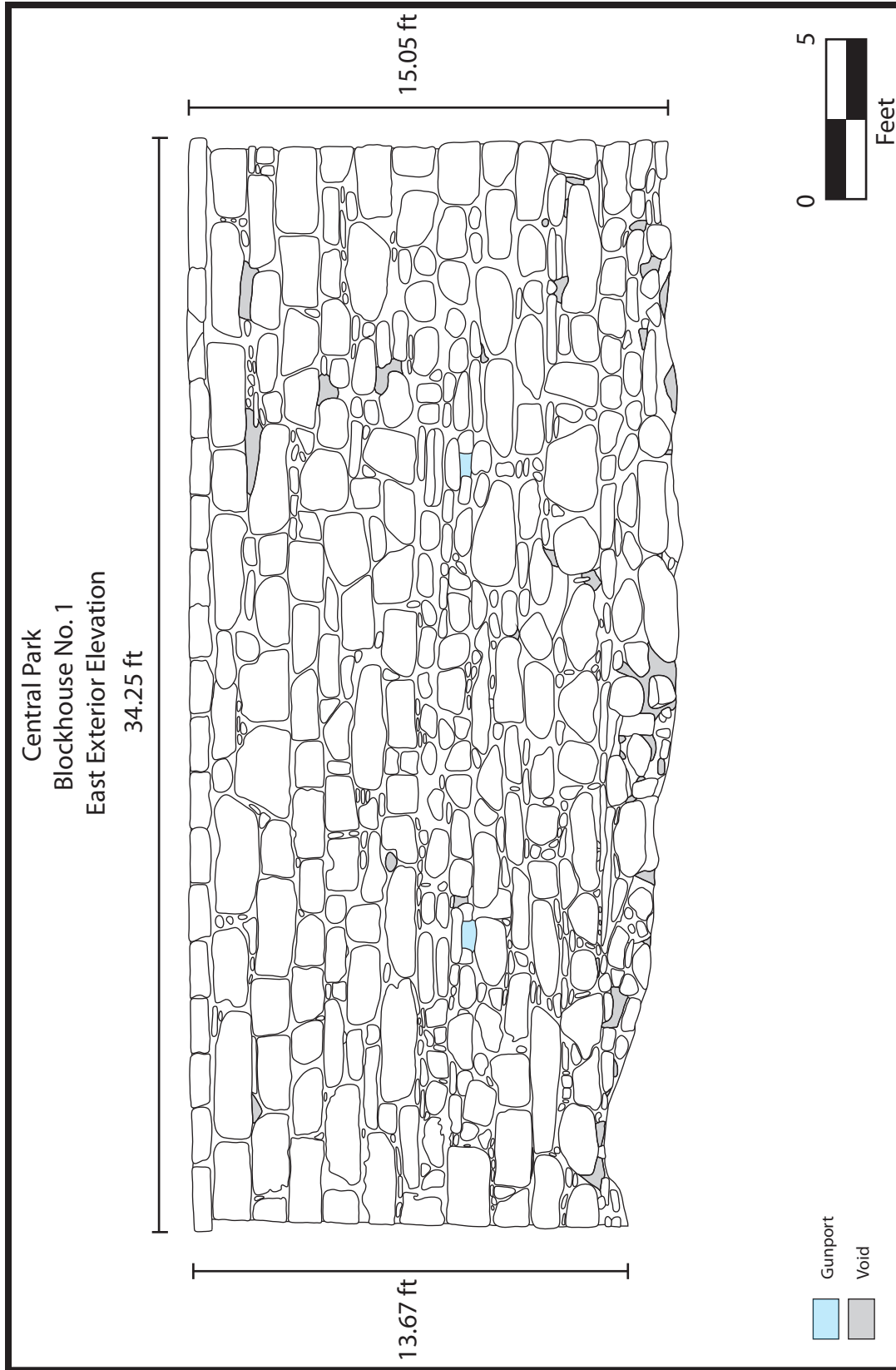


Figure 3.9. Blockhouse No. 1, East Exterior Elevation, Line Drawing.

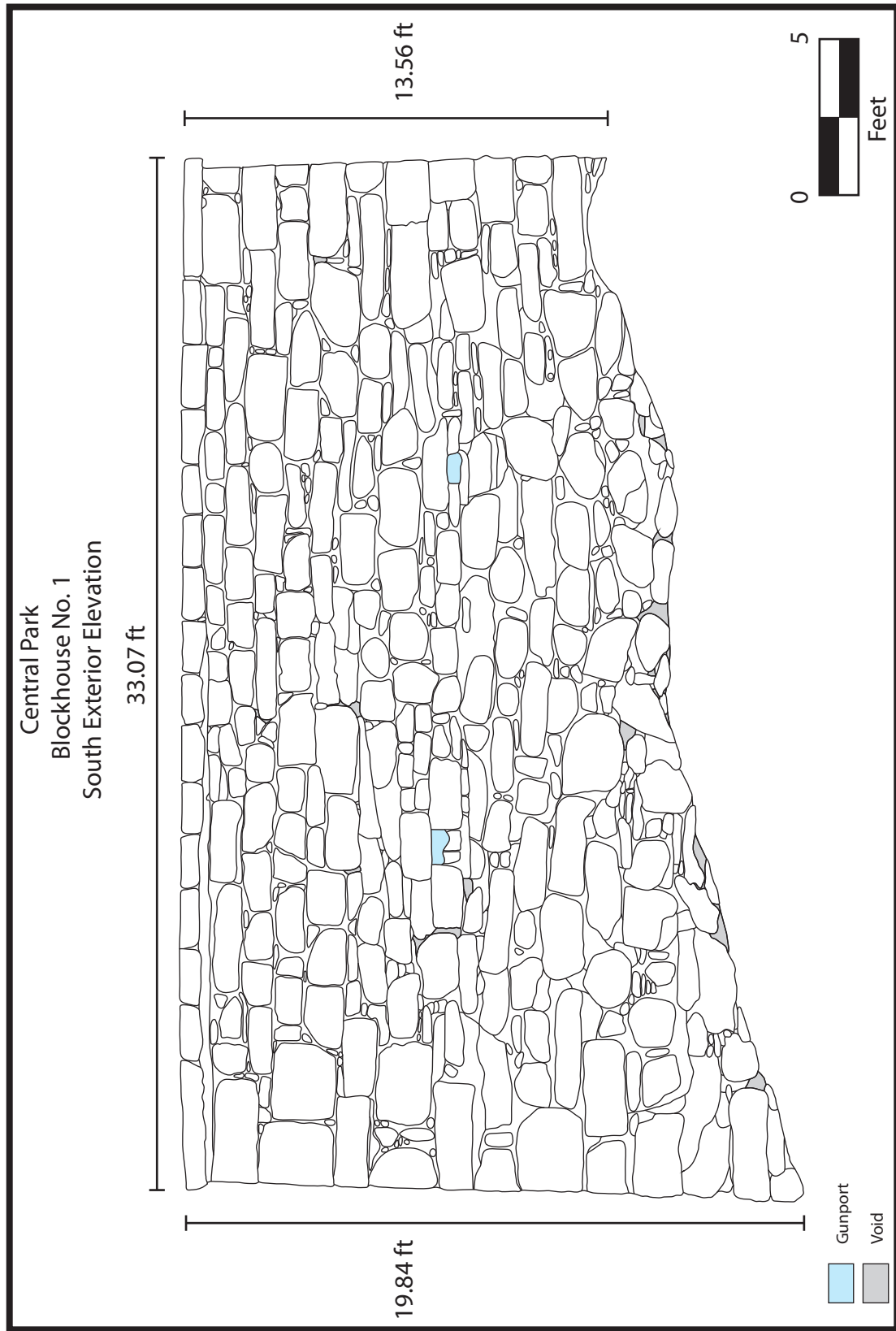


Figure 3.10. Blockhouse No. 1, South Exterior Elevation, Line Drawing.

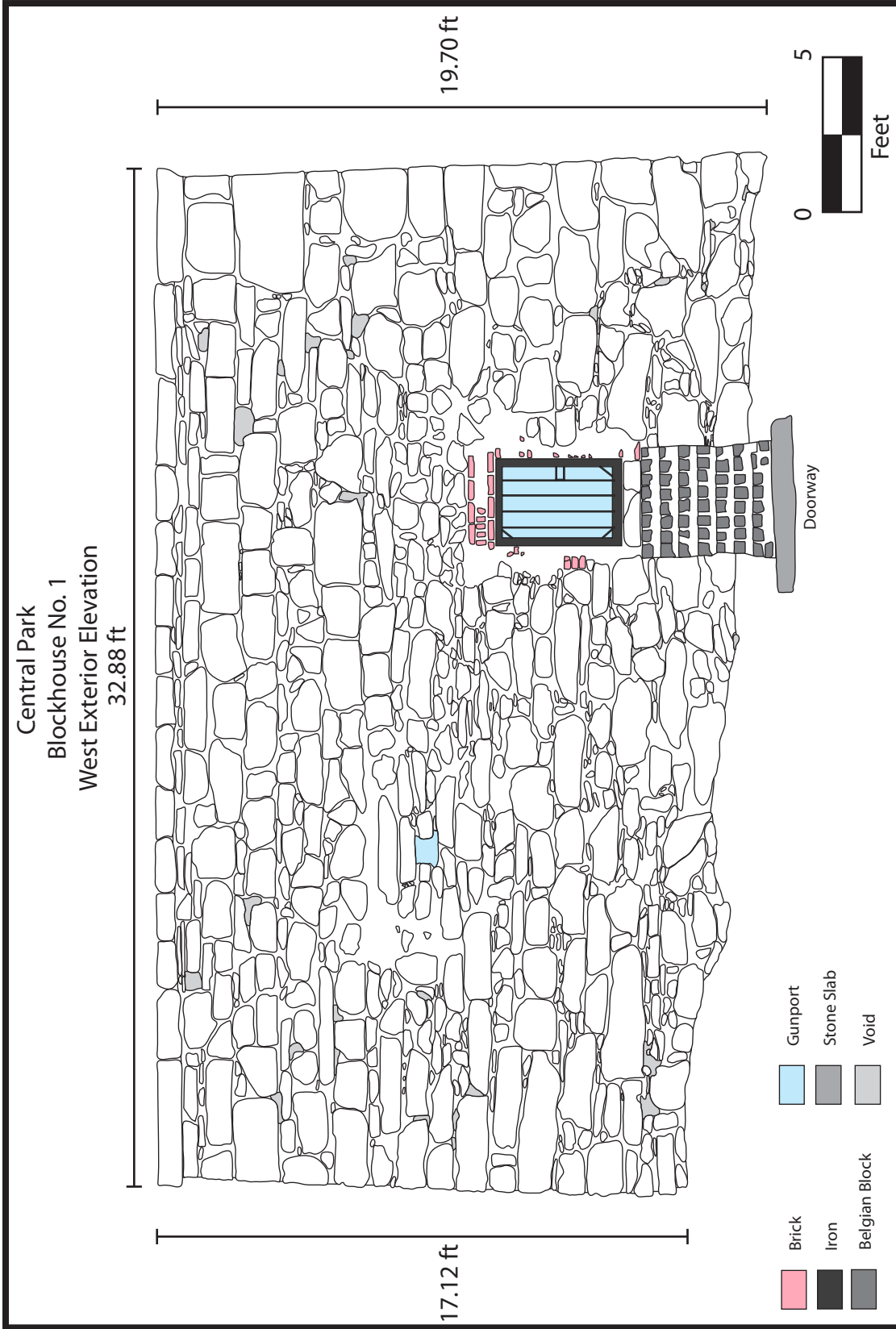


Figure 3.11. Blockhouse No. 1, West Exterior Elevation, Line Drawing.

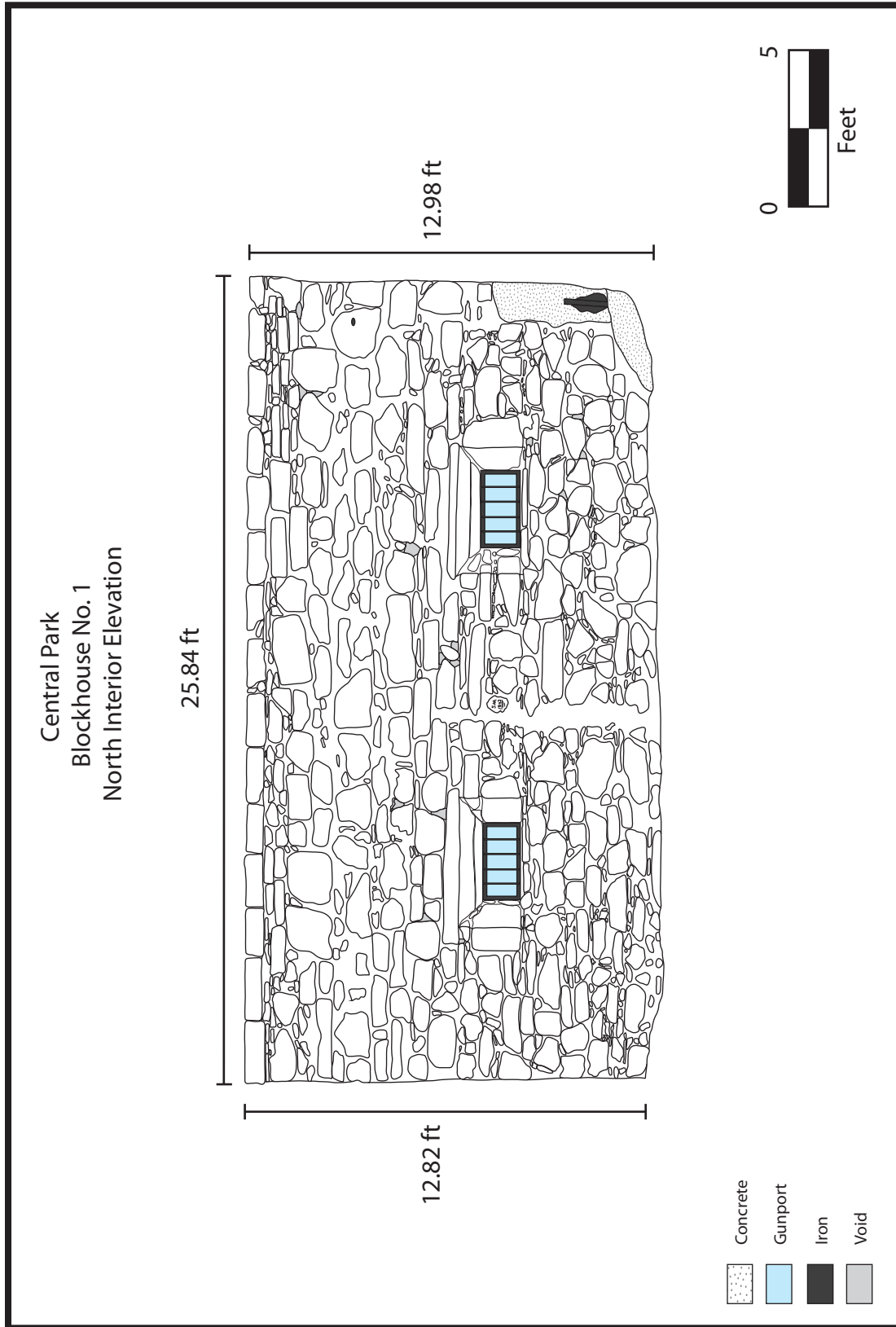


Figure 3.12. Blockhouse No. 1, North Interior Elevation, Line Drawing.

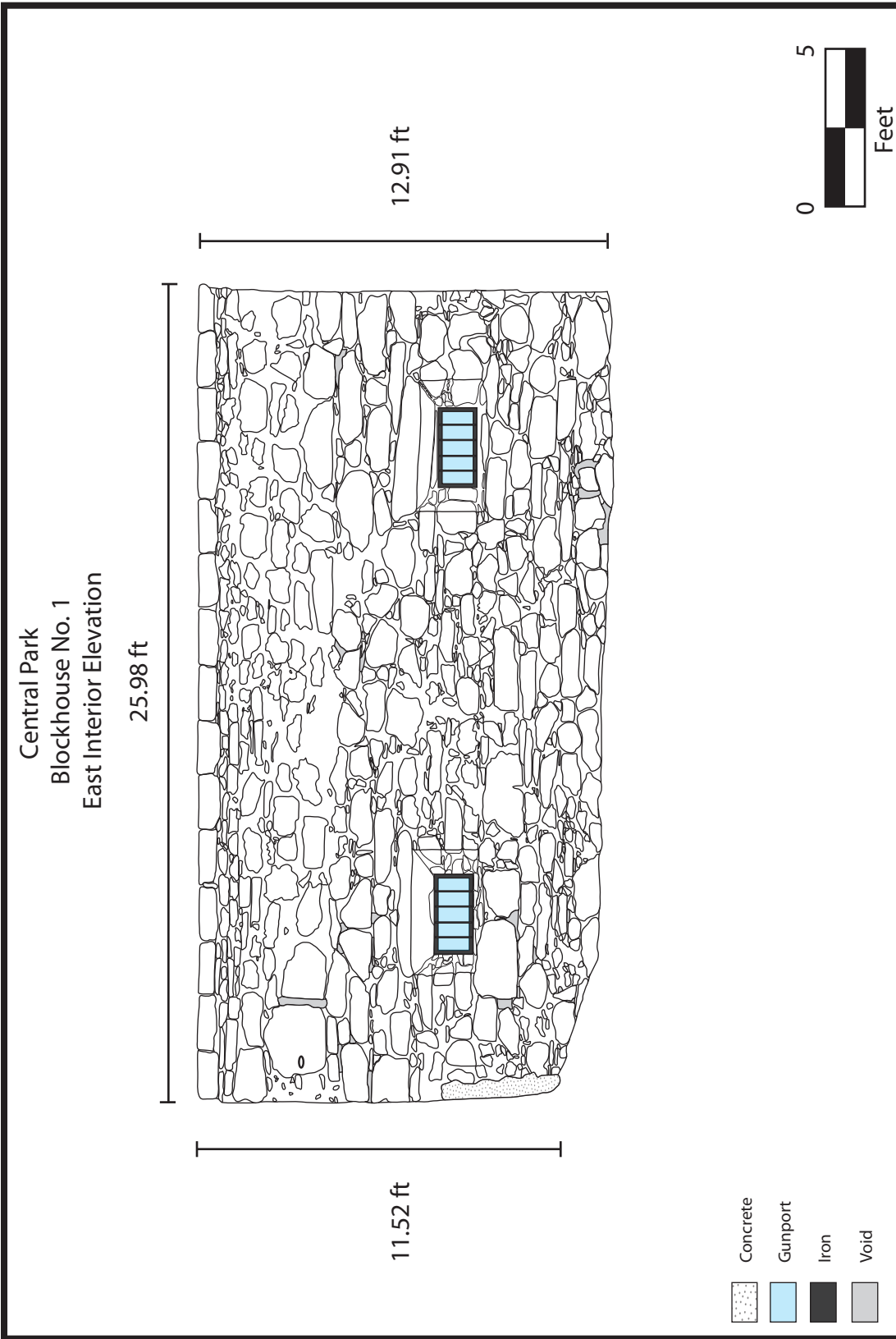


Figure 3.13. Blockhouse No. 1, East Interior Elevation, Line Drawing.

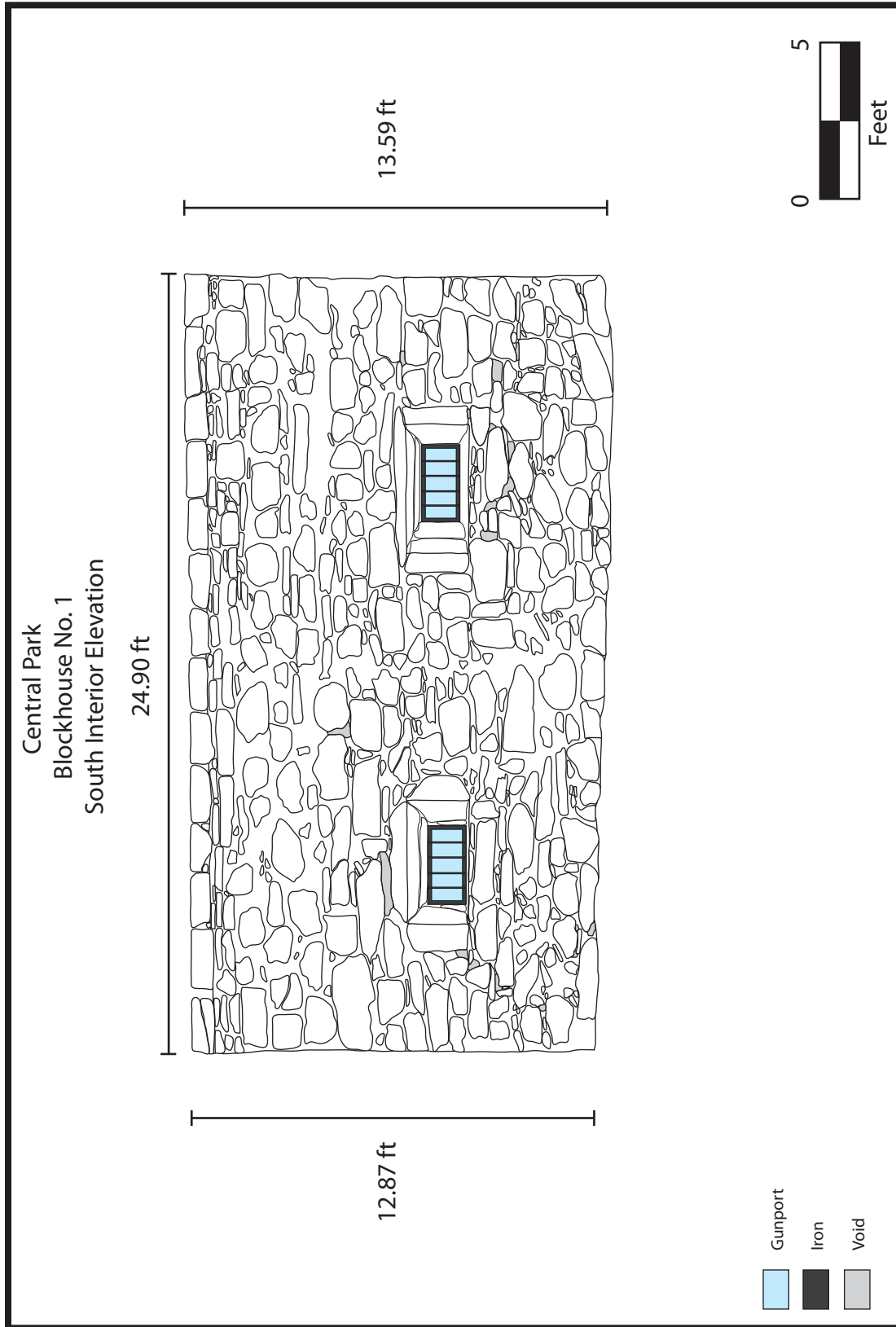


Figure 3.14. Blockhouse No. 1, South Interior Elevation, Line Drawing.

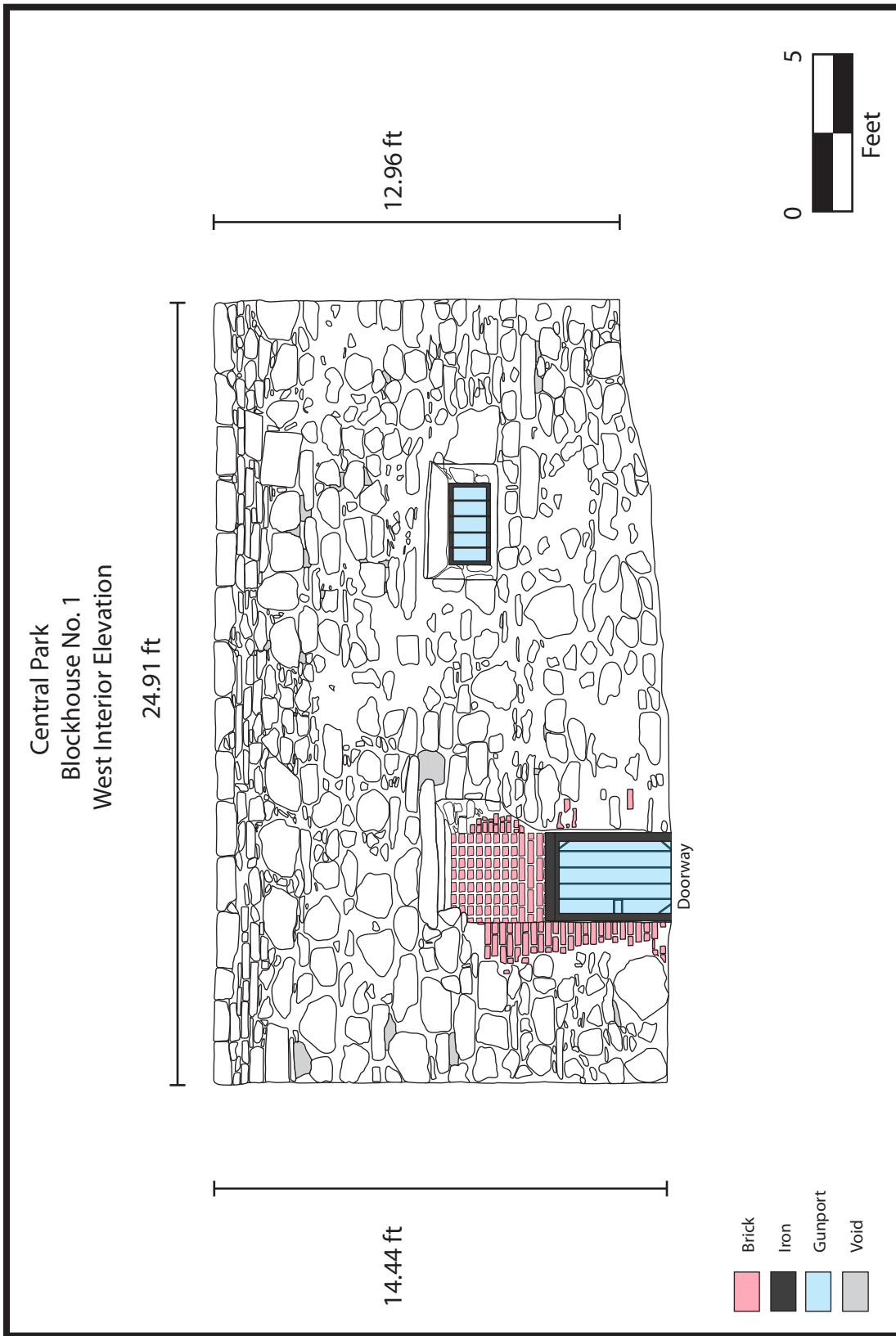


Figure 3.15. Blockhouse No. 1, West Interior Elevation, Line Drawing.

Chapter 4

ARCHEOLOGICAL FIELDWORK

A. METHODOLOGY

Archaeological field investigations were conducted from December 4 to 20, 2018 within the interior of Blockhouse No. 1 (Photograph 4.1). These investigations involved excavations in the southwest, southeast and northwest corners and midway along the north wall of the building (Figure 4.1; Photograph 4.2). In the case of the southwest and southeast corners, work commenced with the rapid re-excavation of the 6 x 3-foot units dug in 1995 (originally designated respectively as Trenches A and B). This work allowed for re-examination and additional recording of the soil profiles and below-ground masonry exposed in the earlier excavations. It also prevented mixing of backfill from these earlier excavations with contexts newly identified as part of the current investigation.

The earlier 1995 excavations were constrained by the blockhouse foundations, which immediately below the surface stepped out into the planned location of the trenches leaving only a small area of soil available for excavation. The 2018 excavations (Excavation Units 1 and 2) expanded both of the earlier trenches by 3 feet into larger units measuring 9 feet east-west by 6 feet north-south. This allowed for the recovery of additional artifacts and a fresh re-examination of the cultural stratigraphy.

Excavation Unit 3 was located in an area not previously investigated roughly midway along the north wall and was centered on a vertical seam in the masonry which it was thought might indicate the location of an interior north-south partition. It was also considered possible that evidence might be found for a subfloor support for the postulated partition.

Excavation Unit 4 was located in the northwest corner of the blockhouse interior where, because of the slope of the bedrock, there appeared to be relatively deep stratigraphy, a site condition that had not been previously sampled by archaeologists. This unit was also placed to identify traces of supports for a late 19th-century interior staircase (documented in photographs and drawings), and to identify evidence of a potential arched entrance depicted in a historic view sketched in 1860 (see above, Figure 2.19).

All excavation units were aligned as much as possible to be square with the interior walls of the blockhouse. Excavations were documented using the “context” system, whereby each recognizable stratigraphic component, be it an accumulated cultural layer, a structural element such as a foundation, or a cut or fill deposit, is assigned its own discrete context number. A summary of stratigraphic data is presented in Appendix C. Artifacts were recovered and recorded according to their stratigraphic provenience, with modern items (mid-/late 20th- or 21st-century) being sampled and discarded. A catalog of artifacts recovered is provided in Appendix D, as is a full inventory of the artifacts recovered from the excavations in 1995 (accompanied by an explanation of the in-field recording system used by the Columbia University archaeological team). The locations of excavation units were plotted on to a detailed site plan of the blockhouse. At the conclusion of the excavations, all excavation units were backfilled and the ground returned as closely as possible to its pre-excavation condition.



Photograph 4.1. View facing southeast showing the southeast corner of the interior of the blockhouse prior to the start of archaeological excavations (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:011]).

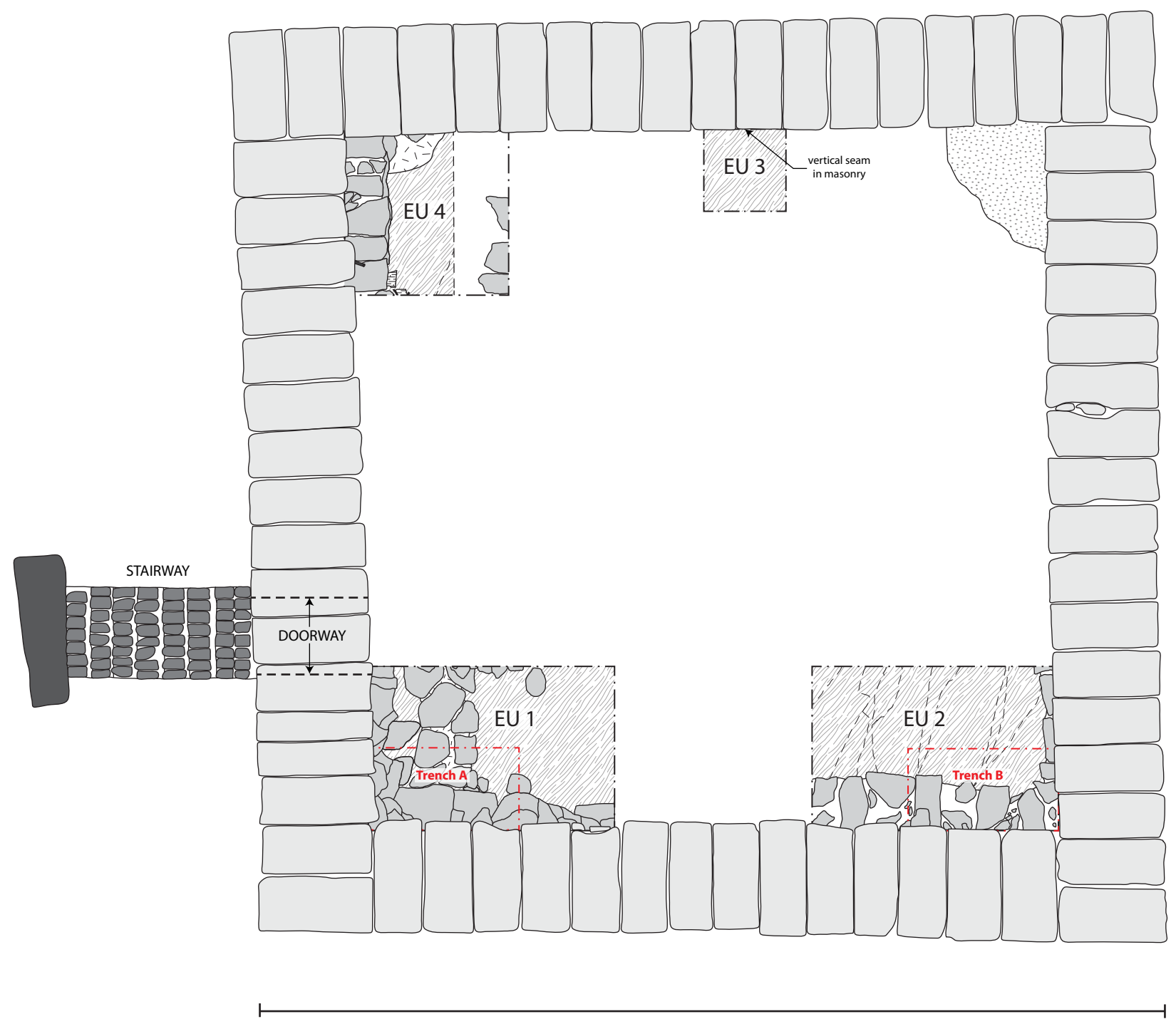
Blockhouse No. 1
Site Plan

33.73 ft

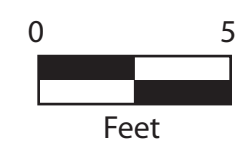


32.88 ft

34.25 ft



- - - Limit of Excavation (Hunter Research, Inc. 2017)
- - - Limit of Excavation (Columbia University 1995)
- Belgian Block (steps)
- Brick
- Concrete
- Iron
- Mortar
- Schist (bedrock)
- Stone Slab (steps)
- Capstones (top of Blockhouse)
- Stone (within excavation units)



33.07 ft

Figure 4.1. Overall Plan of the Blockhouse Showing the Location of Archaeological Units.



Photograph 4.2. View facing east showing Excavation Unit 2 in progress in the southeast corner of the blockhouse (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:048]).

B. ARCHAEOLOGICAL EXCAVATIONS

1. Excavation Unit 1

This nine-by-six-foot unit was positioned in the southwest interior corner of the blockhouse, incorporating the earlier Trench A, in order to investigate the interior of the foundation and search for evidence related to a staircase shown in this location on a late 19th-century plan and in late 19th/early 20th-century photographs (see above, Figure 2.23; Photographs 2.5 and 2.6). After clearing loose stones, vegetation and other debris from the ground surface, the dark brown to black silty loam A horizon was removed as a single context [1] (Photograph 4.3). This revealed a stone ledge or offset extending out from the western and southern walls of the blockhouse. The faint limits [3] of Trench A were also discernible in the southwest corner of the unit filled with a dark silty loam [4] (Photograph 4.3). This trench was excavated into a slightly lighter sandy loam mixed with mortar and small stones [6]. A shallow lens of soil with mortar and small stones [5] was identified between Contexts 1 and 6 in the northwest corner of the unit, near the existing doorway (Figure 4.2). An orangey brown silty clay context [2] was exposed in the eastern third of the unit and a split spoon through this context indicated it was set immediately on top of bedrock (Photograph 4.4).

The fill of the earlier Trench A [4] was excavated first, in order to remove the mixed backfill soils that were known to have been deposited in 1995. After the Columbia University trench was empty and cleaned Context 6 was removed and found to partially overlie Context 2, which sloped down on top of the bedrock to the west, and a series of large stones [104] set on bedrock. These stones, some of which had decomposing mortar between them, were set in a roughly level plane against the western wall of the excavation unit (Figure 4.3; Photographs 4.5 and 4.6). They are interpreted as a footing for the stairway landing that was installed in the late 1890s. The stratigraphy of

this unit suggests that the relatively clean silty clay fill present in Context 2 may have once covered all of the bedrock in this location and was removed when the footing [104] was put in place. It is thought that, when the stairs were removed, the resulting hole was backfilled with Context 6. When the entryway was made smaller and bricks were added a lens of mortar and soil [5] accumulated.

2. Excavation Unit 2

This nine-by-six-foot unit was excavated in the southeastern interior corner of the blockhouse and encompassed Trench B excavated in 1995. After the debris, loose stones and vegetation were removed, the previously excavated Trench B was observed in plan set against the southern [100] and eastern [101] foundations of the blockhouse (Figure 4.1; Photograph 4.7). The backfill of this earlier excavation was removed as a cut [2] and fill [3] deposit. This context yielded 527 artifacts, mostly modern refuse; however, oyster shell fragments, corroded iron cut nails, bottle glass (including a thick dark olive green glass fragment) and a bone button were also retrieved.

After the removal of the topsoil [1] and excavation of the previously excavated trench, three additional contexts were identified in plan: a silty clay [4] was present across much of the unit; an area of rocky debris in a silty loam matrix [7] was identified in the northwest corner; and a pit [5/6/7] was identified in the center of the northeastern quadrant. Suspecting that the latter feature was a modern intrusion, this pit was bisected, excavated and sampled separately from the soils that surrounded it. The fill context [5] was a dark silty loam containing charcoal that appeared to be a modern firepit, possibly reused as a trash pit. At the very base of this context, which cut partially into Context 7 below, there was a plastic shopping bag. The feature yielded other modern artifacts, including beer bottle fragments and a piece of concrete. Although this fea-



Photograph 4.3. View facing southwest showing Excavation Unit 1 after the removal of the topsoil; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:230]).

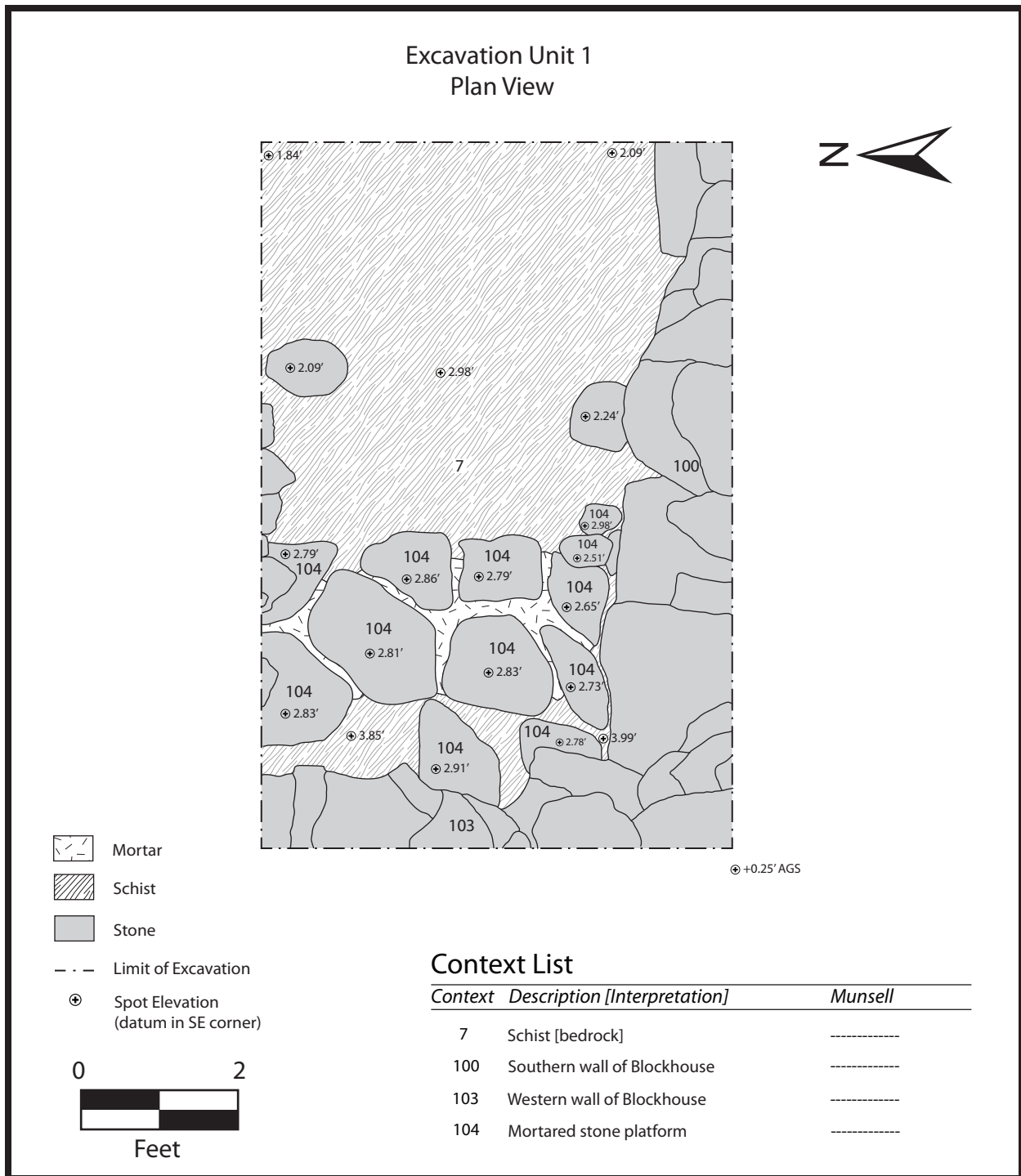


Figure 4.2. Excavation Unit 1, Plan View.



Photograph 4.4. View facing east showing the east profile of Excavation Unit 1 with clay directly overlying bedrock; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:252]).

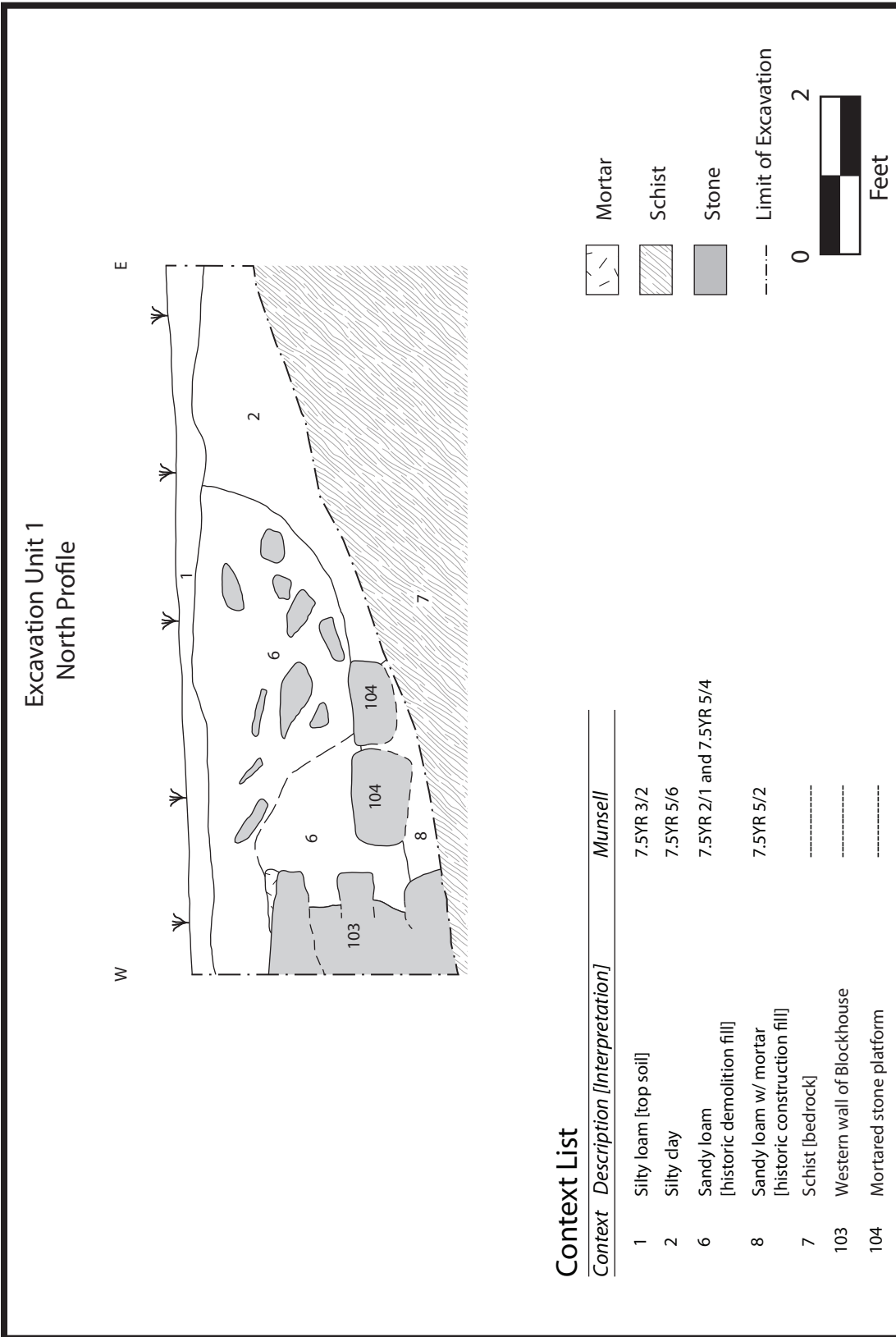


Figure 4.3. Excavation Unit 1, North Wall Profile



Photograph 4.5. View facing south showing Excavation Unit 1. Note the level stone pad set on bedrock at the western end of the unit; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:245]).



Photograph 4.6. View facing north showing the western portion of the north profile of Excavation Unit 1. Note the stone fill above the stone pad; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:253]).



Photograph 4.7. View facing east showing Excavation Unit 2 after the removal of topsoil. Note the rectangular outline of Trench 8 and the circular modern firepit feature just west of the north arrow; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:036]).

ture is of no consequence to the interpretation of the 19th-century history of the site, it was important to isolate this modern intrusion from the other, older contexts to avoid contamination.

As Context 4 was removed, it exposed Context 7 across much of the unit. This context, which contained numerous chipped stone fragments interpreted as masonry debris, extended under the stone shelf projecting out from the southern foundation wall [100], suggesting it was in place when the wall was built. Another lens of clay loam [9] lay beneath Context 7 in the western portion of the unit. A possible historic ground surface made up of a sandy clay loam [10] was identified in the eastern portion of the unit and along its southern edges which also extended under the shelf of the southern foundation wall [100] (Photograph 4.8). This context overlay either bedrock or a clayey silt loam [11] identified within the crevices between the bedrock outcrops that is interpreted as natural subsoil (Figures 4.4 and 4.5; Photographs 4.9 and 4.10). At the very eastern end of the unit at approximately one foot below the ground surface a lens of sandy loam and mortar [8] appears to have eroded out of the eastern wall and sits on top of Context 10 and below Context 9 (Photograph 4.11).

3. Excavation Unit 3

This three-foot-square excavation unit was placed in the center of the northern interior wall where a vertical seam filled with mortar is visible in the masonry (Figure 4.1). It was considered possible that this seam might represent an internal partition of the building and that evidence to support this might be present below the ground surface. The silty loam topsoil [1] overlay a silty clay loam in the western half of the unit and bedrock [3] in the unit's eastern half (Figure 4.6; Photograph 4.12). The bedrock was exposed at 0.5 feet below the ground surface in the eastern profile and sloped down to a depth of 1.05 feet in

the western profile (Photograph 4.13). The silty clay loam [2] context abutted the northern wall [102] of the blockhouse and directly overlaid a lens of mortar that extended out slightly from under the wall on top of the bedrock (Photograph 4.14), suggesting it was deposited soon after this bedding mortar and the wall were put in place. Also worthy of note are two stones extending out of the southern profile. These appeared to have been roughly trimmed square and sit on the top of Context 2, within Context 1. They are situated roughly centered opposite the mortared seam and may have served as supports for a floor joist within the building.

4. Excavation Unit 4

This 6-foot-square unit was excavated in the northwest corner of the blockhouse interior in an area that had not been previously explored by archaeologists (Figure 4.1). This location was selected specifically because of the depiction of an apparent entry in the west wall of the blockhouse in a lithograph created in 1860 (see above, Figure 2.19). This image depicts an arched opening at ground-level at the northern end of the western wall of the building. A small pile of stones was present on the surface in the northwest corner of the unit. After these were removed the stone ledge along the western wall [103] of the blockhouse was exposed. The almost black, silty loam topsoil was removed as one context [1] across the unit exposing modern trash. Three stones were identified set partially within Context 1 and on top of the silty clay Context 2. This silty clay context appears to be the same as that identified in Excavation Units 1 and 3 right on top of bedrock (Figure 4.7; Photograph 4.15). The three stones exposed were trimmed roughly square, similar to the stones identified on top of Context 2 in Excavation Unit 3 and may also be related to a no-longer-extant floor structure.



Photograph 4.8. View facing north showing the north profile of Excavation Unit 2; scales in feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:168]).

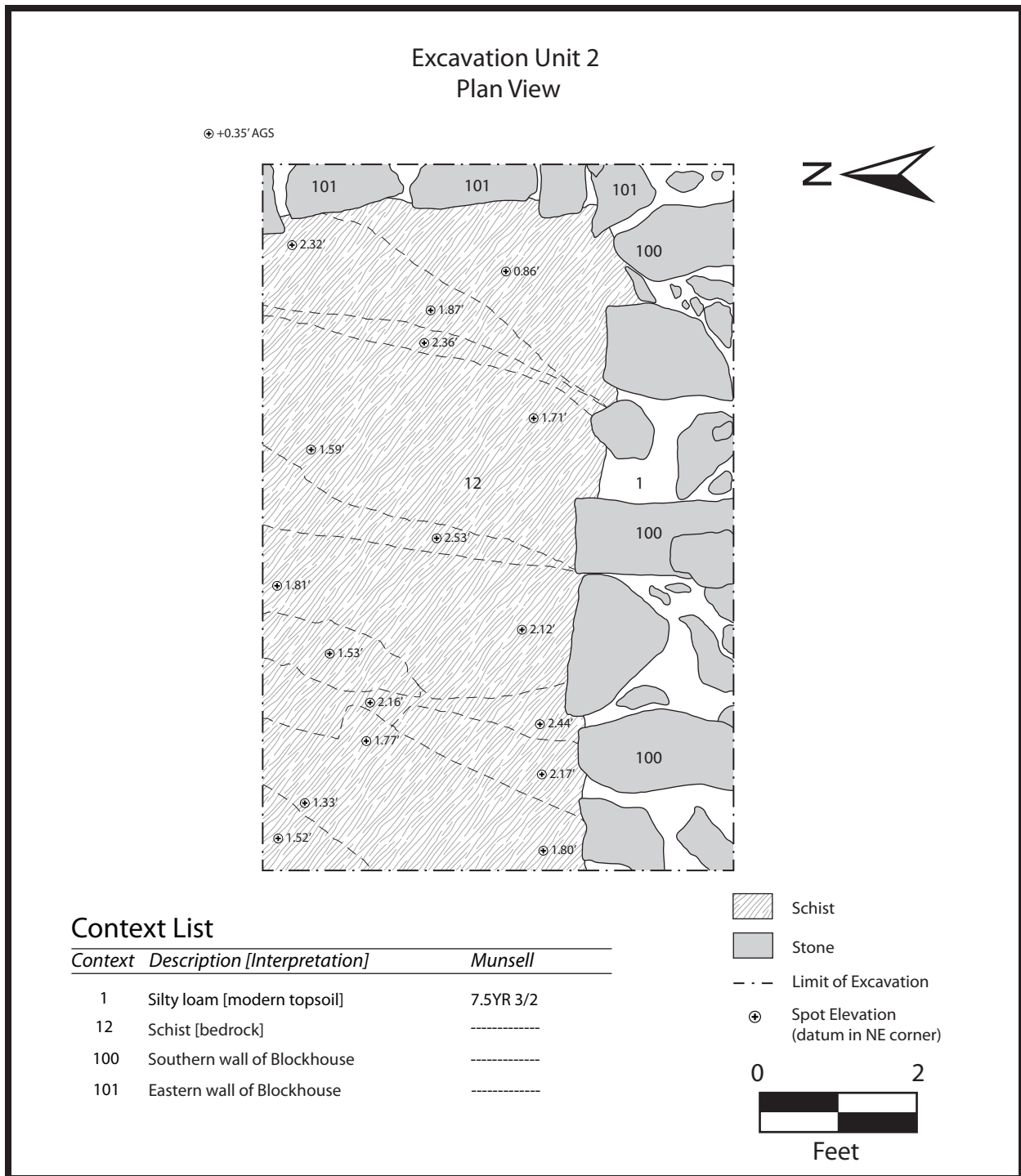


Figure 4.4. Excavation Unit 2, Plan View.

Excavation Unit 2
North Profile



Context List

Context	Description [Interpretation]	Munsell
1	Silty loam [modern topsoil]	7.5YR 3/2
4	Silty clay	10YR 4/4
7	Silty loam	10YR 3/2
8	Mortar and sandy loam [mortar eroding out of the wall]	7.5YR 6/1
9	Clay loam	7.5YR 6/4
10	Sandy clay loam	7.5YR 3/2
11	Clayey silt loam [natural subsoil on the bedrock]	7.5YR 4/4
12	Schist [bedrock]	-----
101	Eastern foundation of Blockhouse	-----

Figure 4.5. Excavation Unit 2, North Wall Profile.



Photograph 4.9. View facing south showing the western portion of the southern profile of Excavation Unit 2. Note the stratigraphy present below the foundation shelf; scale in tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:063]).



Photograph 4.10. View facing southeast showing Excavation Unit 2 fully excavated; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:059]).



Photograph 4.11. View facing east showing the lens of decayed mortar in Excavation Unit 2; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:055]).

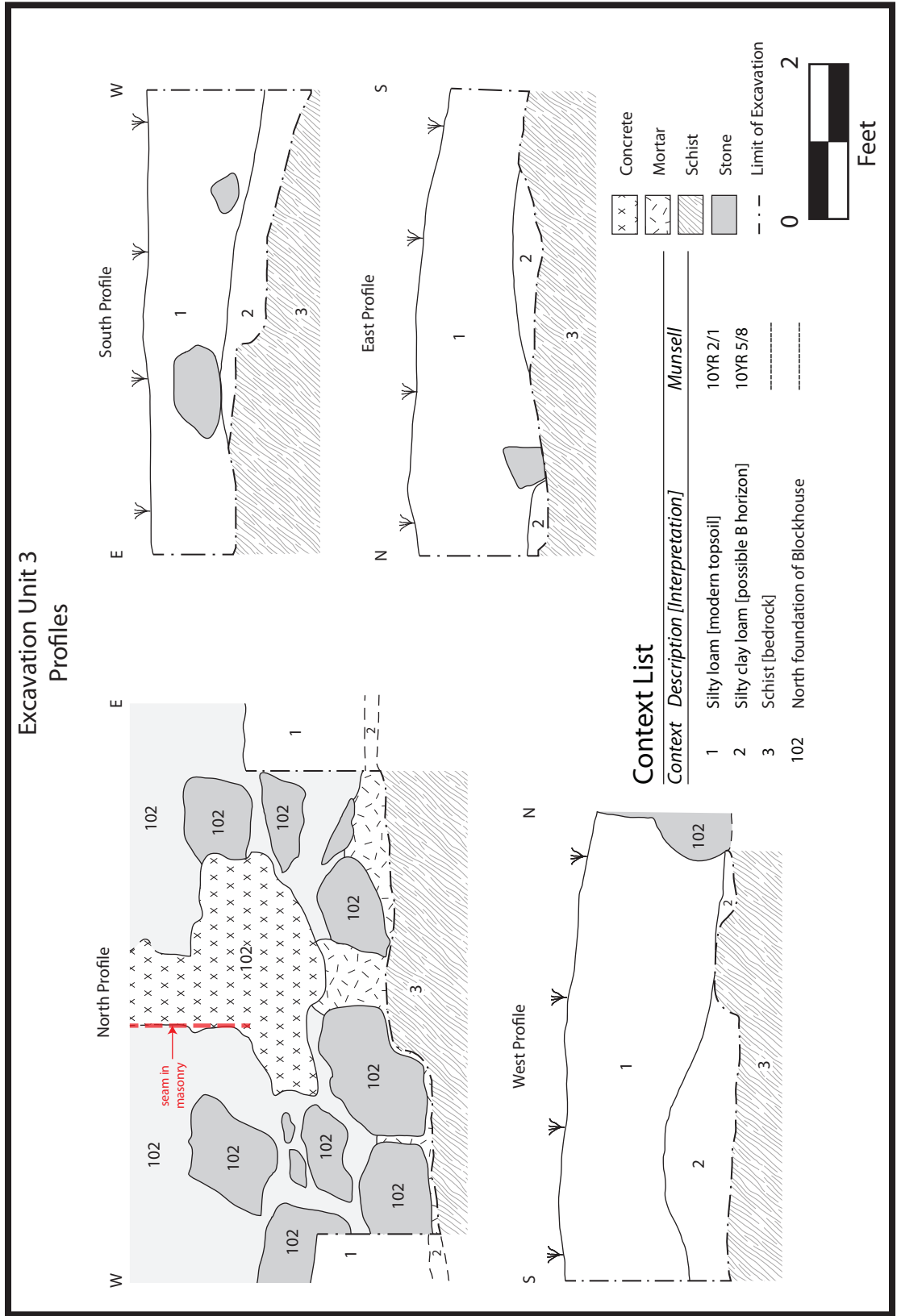


Figure 4.6. Excavation Unit 3, Wall Profiles.



Photograph 4.12. View facing north showing Excavation Unit 3 and a clay layer directly on top of bed-rock. Also note the relationship between the mortared seam in the north wall of the blockhouse and the square stone projecting from the southern profile; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:170]).



Photograph 4.13. View facing west showing Excavation Unit 3 fully excavated; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:175]).



Photograph 4.14. View facing north showing Excavation Unit 3 and the bedding mortar observed between the bedrock and the bottom of the blockhouse foundation; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:183]).

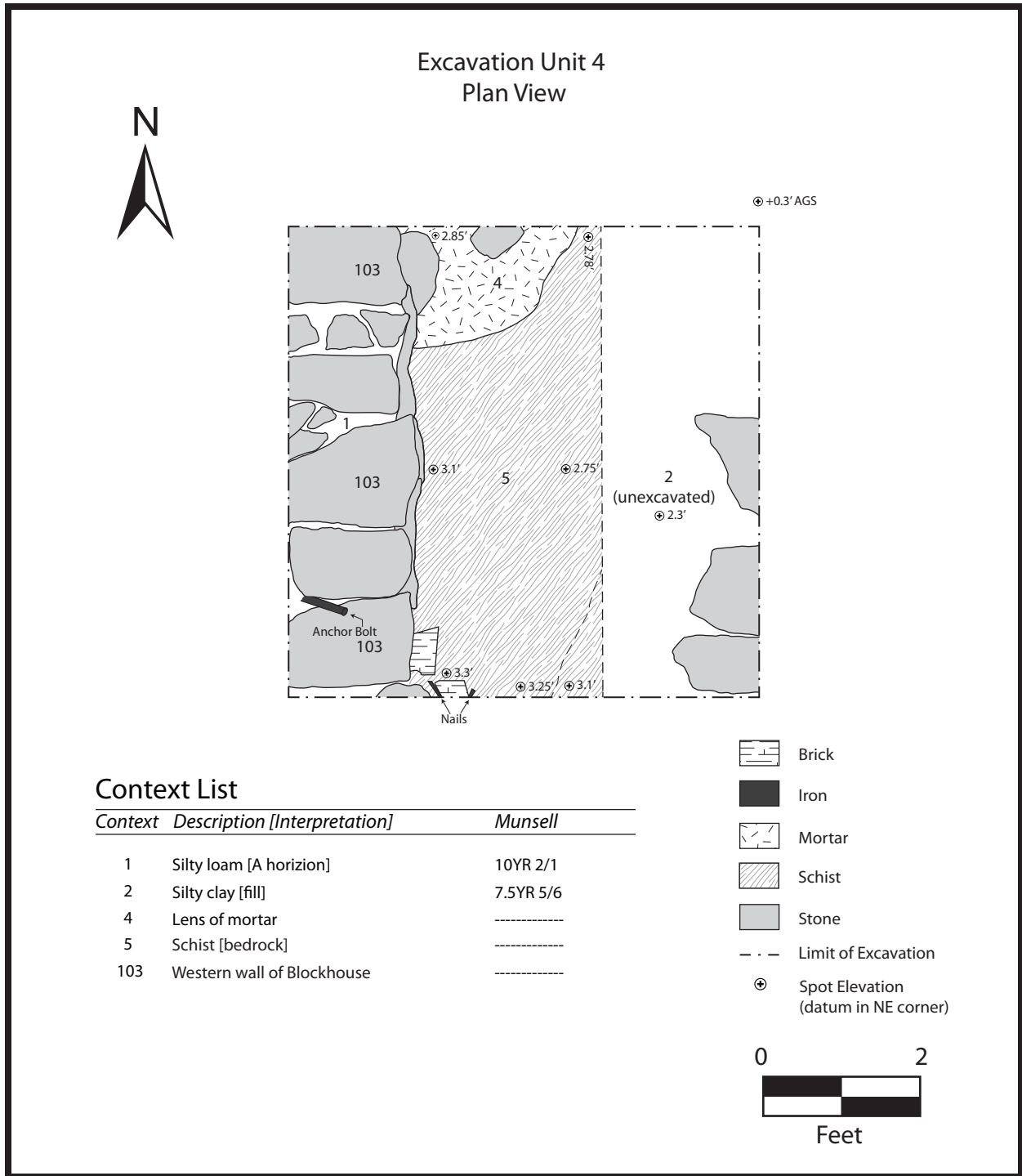


Figure 4.7. Excavation Unit 4, Plan View.



Photograph 4.15. View facing northwest showing Excavation Unit 4 with the topsoil context [1] removed, revealing the clay layer [2] below. Note the three stones in a row in the foreground within the eastern wall of the unit; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:190]).

The compacted Context 2 was bisected north-south and the western half of this context was excavated to bedrock [5] (Figure 4.8; Photograph 4.16). A rodent disturbance [3] was observed cutting into Context 2 at the southern end of this unit and in the southern profile. At the northern end of the unit Context 2 overlay a thick lens of decayed mortar that lay immediately on top of bedrock and extended under both the northern wall of the blockhouse [102] and the stone ledge of the western wall [103]. This lens is interpreted as a bedding mortar (Photograph 4.17). Context 2 also extended under the northern wall [102] just below the interior ground surface. This soil was not excavated in order not to undermine the wall's masonry, but probing suggested it extended for several inches under the northern wall.

The stone ledge or shelf extended out generally 1.8 feet from the base of the western wall. The top of the ledge was lower in the southwestern corner of the unit where several courses of stone are missing. Within the shelf a bent iron rod was documented (Figure 4.7; Photograph 4.18). This rod was round in profile and extended up between mortared stones before bending over on top of the surrounding stones. It is interpreted as an anchor bolt, likely driven into the bedrock below and mortared into the basal courses of the blockhouse foundation.

C. MATERIAL CULTURE

Archaeological investigations of the blockhouse interior have recovered 5,845 artifacts: 1,064 items from the two trenches excavated in 1995 and 4,781 from the excavation units dug in 2017 (Table 4.1). The artifacts recovered in 1995 were re-analyzed as part of the current project and the catalog at the end of this document includes these artifacts (Appendix D). Of the artifacts recovered the vast majority (4,482 objects) are considered modern. These include items such as batteries, bottle caps, fragments of wire, spray cans, bird and

rodent bones, a pencil, a pen, film canister, safety pins, screws, a toy gun part, etc. Approximately 279 items characterized as drug paraphernalia are also included within this group. These were largely plastic vials and vial caps. By far the most dominant modern artifact type is beer and soda bottle glass, represented by clear, brown, white and green fragments (3,849). Although these items have limited value, other than indicating that an archaeological context is recent or disturbed, it was decided to collect them so that they would not be reintroduced into the ground as backfill. A total of 53 objects of unknown date were also collected. Most of these are probably historic artifacts and include oyster shell, stone masonry chippings and a corroded, illegible coin. A single precontact (Native American) artifact was also recovered, a single thermally altered "jasper" (brown chert) flake. It is identifiable as a precontact artifact because of the characteristic bulb of percussion visible on its ventral side.

The remaining 1,310 artifacts are considered "historic," largely on the basis of their likely dating to before World War I. Surprisingly for a historic archaeological site, only nine sherds of historic pottery were recovered. Ceramics, along with glass, are normally one of the most frequent artifact types recovered. The lack of ceramics in this instance is almost certainly a result of the short period of occupation and the intended use of the blockhouse structure. It was not built to be lived in, only periodically manned. The ceramics that were recovered were manufactured throughout the 19th century and consist of buff-bodied earthenware (1 sherd), pearlware (1), porcelain (1), stoneware (1), ironstone (1), whiteware (3) and three sherds of an indeterminate refined earthenware (on which no glaze was present).

The most common historic artifact type was nails (572), with cut or wrought nails (507), predominating over wire nails (31), although at least 33 were too corroded to allow this distinction. Most of these nails were likely used on the interior framing of the

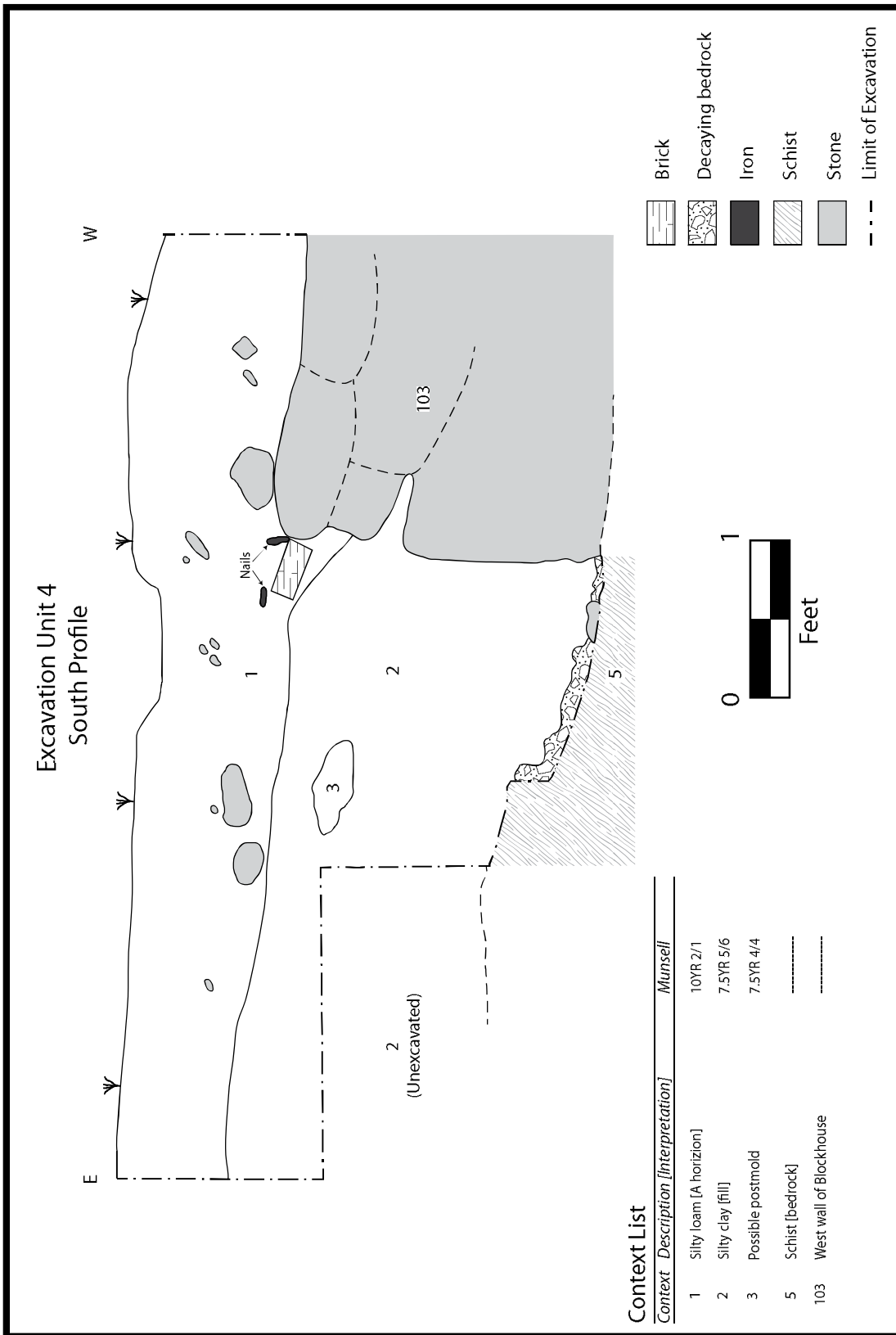


Figure 4.8. Excavation Unit 4, South Wall Profile.



Photograph 4.16. View facing northwest showing Excavation Unit 4 fully excavated (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:205]).



Photograph 4.17. View facing north showing the north profile of Excavation Unit 4. Note the mortar between the bedrock and clay fill; scales in feet and tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:210]).



Photograph 4.18. View facing north showing an anchor bolt within the western blockhouse wall exposed in Excavation Unit 4; scales in tenths of feet (Photographer: James Lee, December 2017 [HRI Neg.#17070/D1:227]).

blockhouse. One would expect wrought nails to be used during its initial construction in 1814, while the cut and even wire nails would have been used in later alterations to the interior and the construction of the stairway and the roof that once topped the structure. A large wrought iron spike was recovered in Excavation Unit 4 that is likely related to the larger framing members supporting the floor[s] within the blockhouse. Other metal items included bolts (3), a hinge part, a hook, a piece of wire, a nut and a washer. Three cartridge cases – one .22 caliber (embossed with a “W” for the Western Cartridge Company) and the others indeterminate – were recovered. These are likely late 19th- or early 20th-century artifacts. The .22 cartridge was introduced in the 1880s.

A significant number of bottle glass fragments (222) were identified that were considered historic (i.e., pre-World War I). These include: 39 olive green fragments (given the degree of patination these likely date to the early 19th century); 126 light aqua or aqua fragments (normally dated to the 1850s-1880s); seven light olive green fragments (second half of the 19th century); 31 citron fragments (very late 19th or very early 20th century); and seven violet fragments (early 20th century) with blue, brown, olive and amber glass also represented by a few fragments. Only four clear bottle fragments (post-1870) were recovered that were not considered modern (because of their thick cross-section and the presence of air bubbles). One light olive green soda bottle fragment embossed “R. ROBINSON 376 BOWERY, N.Y.” appears to be from an 1870s soda bottle. Only three fragments of light aqua flat or window glass were identified.

Overall, the bottle glass recovered does not appear to be a good chronological indicator. Several fragments of patinated olive green glass that likely date to the early 19th century were found in more recent contexts, especially in Excavation Unit 2, as well as in older contexts. These artifacts may have been displaced when the blockhouse was modified, in par-

ticular when the stairs were added in the early 20th century. Clear glass was found largely in the younger topsoil contexts but also in Context 2 in Excavation Units 3 and 4, where this relatively clean clay layer is interpreted as part of the original construction of the blockhouse. In these cases the clear glass fragments were normally found at the interface with the topsoil or along the wall edge of the unit where they could easily have been introduced into earlier soil deposits through rodent activity. The remainder of the bottle glass likely represents the blockhouse being a destination within the North Woods for picnicking or partying throughout the later 19th and 20th centuries.

The faunal remains were limited to 12 oyster shells and three large mammal bones. The mammal bones all show cut marks indicating butchering. Oyster shell fragments are a common occurrence on historic sites throughout the region. These were likely brought to the site as food, not as an agricultural soil fertilizer, as is often the case on agricultural sites.

Several personal items were found. A single-eyed wood button blank was recovered that was probably the backing for a metal or cloth button. A shank would be passed through the single hole. This dates to the 18th or early 19th century. A simple bone, four-eyed button (probably classifiable as “South Type 22” and dating to the early 19th century) was recovered, as well as a common four-holed white (or “milk”) glass button. Milk glass buttons are popular from the 1840s onwards.

Six marbles were identified. A single stone (possibly limestone) marble was recovered during the investigation in 1995, a specimen that could range in date from the 18th through the mid-20th century. Five glass marbles of various colors (aqua, blue, clear, light blue and light olive green) are probably 20th-century machine-made examples given the lack of removal scars. Two small white clay pipe stem fragments were

Table 4.1. Blockhouse No. 1, Summary of Material Culture Items.

	Excavation Unit	Trench	Grand Total
Prehistoric	1		1
Jasper flake	1		1
Historic	906	404	1310
Pottery	8	1	9
Buff-bodied earthenware	1		1
Indeterminate type	1		1
Ironstone	1		1
Pearlware		1	1
Porcelain	1		1
Stoneware	1		1
Whiteware	3		3
Metal	650	206	856
bolt	3	3	6
finishing nail	1		1
grommet, copper alloy	1		1
hinge	1		1
hook	1		1
nail	528	43	571
nail, copper alloy	1		1
nut		1	1
spike	1		1
washer	1	1	2
wire	1		1
indeterminate type	108	158	266
cartridge case	1		1
cartridge case, copper alloy	2		2

Glass	168	64	232
Bottle	162	60	222
aqua	18		18
blue	1		1
brown	4		4
citron	3	28	31
clear/uncolored		4	4
dark aqua	1		1
light aqua	93	15	108
light olive green	6		6
medium blue-green	2		2
medium olive amber	1		1
olive green	26	13	39
violet	7		7
Button, white	1		1
Indeterminate type		1	1
Marble	2	3	5
aqua	1		1
blue		1	1
clear/uncolored		1	1
light blue		1	1
light olive green	1		1
Flat, light aqua	3		3
Fired clay	5	3	8
Brick sample	2	3	5
Terracotta pipe	1		1
White clay pipe stem	2		2
Fauna	13	5	18
Bone button		1	1
Mammal bone	3		3
Oyster Shell	10	2	12
Stone	5	40	45
Gunflint(?)	1		1
Mortar samples	48	38	86
Wood samples	2	31	33
Mineral samples	7	16	23
Modern	3838	644	4482
Indeterminate	36	16	52
Grand Total	4781	1064	5845

found. These are likely of 19th-century origin, but lacking maker's marks or ornamentation, obtaining a more refined date is not possible.

A single piece of European dark gray flint with brown cortex was found in Excavation Unit 4, Context 2 (the packed silty clay fill that sits atop the bedrock). It has been knapped uniaxially to expose the flinty interior. This object is thought to be a discarded gun flint. Even though it is not shaped perfectly for this use, it does seem to exhibit some impact fracturing along one of the exposed flint edges. Given its non-standard form, it may have been made locally. This may have been stored or discarded in the blockhouse during its initial period of use.

In addition to these above-described artifacts several samples of brick, mortar, sewer pipe and building stone were retained, as were 23 fragments of charcoal.

D. ARCHAEOLOGICAL SYNTHESIS

Archaeological evidence suggests that the blockhouse was built on a partially exposed bedrock outcrop. Excavation units along the western (EUs 1 and 4) and northern (EU 3) foundation walls show that a thin bedding mortar and then masonry were placed immediately on bedrock, after which clay was packed into the interior of the structure, possibly as a leveling fill. In the southeast corner, where the bedrock has narrower crevices, a silty subsoil (with no organic component) was observed within the crevices and thin B and potential historic A horizons were observed above this natural matrix. It appears as though the natural soils may have been left within these crevices instead of removing them and replacing them with a clay fill in this corner of the structure. The mortar from the eastern wall also rests on top of the A horizon in the southeastern unit (Trench 2).

Decayed lime and sand mortar was observed in Excavation Units 3 and 4 immediately on top of bedrock and was overlain by a relatively clean clay fill. This mortar was likely used as a bedding mortar to lay the foundation onto the bedrock. No evidence of timbers was observed within the foundation that might suggest the presence of a timber platform or frame beneath the blockhouse.

An iron rod was observed in Excavation Unit 4 projecting up between the stones of the foundation. The top of this rod had been bent over and subsequently covered with mortar and masonry. The rod probably extends down into the bedrock and was being used to anchor the masonry to the outcrop. Evidence of a similar construction technique has been noted elsewhere along the nearby bedrock outcrops at McGowan's Pass and at Nutter's Battery.

Sometime after the foundation was put in place, the western interior of the blockhouse was filled and leveled with an orangey clay fill. This clay fill is deepest along the western foundation wall and becomes progressively shallower as the bedrock rises to the east, until the bedrock is present at the ground surface. In the southeast corner of the blockhouse this clay fill is interspersed with a layer of masonry debris, suggesting that the clay was being put in as the blockhouse was being built. The absence of any soil below this fill in Excavation Units 1, 3 and 4 also suggests it was put in at the same time or immediately after the structure was built. This fill also directly abuts the foundation walls where present (and runs under the northern foundation wall). The fill was likely put in place to level and damp-proof the structure, a measure necessary when potentially storing materials such as gunpowder.

In Excavations Units 3 and 4 square stones were set immediately on top of the orangey clay fill at distances of six and 12 feet from the western wall (above the shelf) within a roughly 24-foot-square interior space.

These stones are interpreted as supports for no-longer-extant timber floor joists. In Excavation Unit 3 one of these stones lines up with a mortar-filled seam in the masonry that may conceal a joist pocket or interior partition line but, on the whole, evidence for an interior partition is very limited.

Finally, the western and southern foundations, and the southern half of the eastern foundation all have ledges or offsets of stone masonry that extend out into the interior approximately two feet from the walls' interior faces, or between a half and one foot from the eastern wall. Although the masonry for these ledges is fragmentary above ground they appear to have all at one time been at the same elevation, evidently providing support for joists in a timber floor frame (which would explain the absence of joist pockets in the masonry). In the northern and northeastern corners the bedrock was high enough to serve the same purpose as the stone ledges and may, in fact, have set the height of the floor within the structure.

No evidence for an original ground-level or first-floor-level doorway into the blockhouse was identified. Despite the illustration of 1860 that appears to show an arched opening in the northwest corner, no evidence for this feature was encountered, nor was there any evidence that the masonry in this area had been modified since its original construction. The re-use of the blockhouse as a magazine in the mid-19th-century is thought to have necessitated the creation of the more formal and practical doorway which survives today, although this opening was enlarged and modified at the end of the 19th century when the blockhouse was rehabilitated. In this last phase of alteration of the blockhouse in the late 1890s, a stairway and landing were installed to access an observation deck and a flagpole was set into the bedrock in the northeast interior corner. The stairway construction required excavating into the original clay fill leveling deposit put down in 1814 and preparing a level stone pad under the timber landing just inside the doorway.

Evidence of these latter modifications was identified in Excavation Unit 1, as was later evidence of the bricking up of the entrance after the interior stairway was removed.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

A. SYNTHESIS AND DISCUSSION

This report presents the results of extensive historical and archival research, a program of laser scanning and drafting, and some carefully targeted archaeological investigation, all directed at Blockhouse No. 1, a key component in the McGowan's Pass/Harlem Heights fortification system designed and built for the defense of New York City toward the end of the War of 1812. Chapter 2 traces the history of the blockhouse, erected in the fall of 1814, down to the present day and offers a detailed commentary on the building's origins, its use and modifications over the course of its more than two-century existence. Chapter 3 presents scanned imagery and scale drawings of the exterior and interior elevations of the building in its present condition, along with an accurate plan view, while Chapter 4 summarizes the results of archaeological investigations conducted within the blockhouse interior in 1995 and 2017.

Blockhouse No. 1 was erected between early September and mid-November of 1814 at a time when New York City was under direct threat of British assault by both land and sea. The Harlem line of fortifications was intended to protect the city from land attacks from the north. These defenses were designed by Brigadier-General Joseph Gardner Swift, Chief of the U.S. Army Corps of Engineers, with the assistance of several staff engineers and surveyors, amongst whom were Lieutenant James Gadsden, James Renwick, Sr., and William Proctor. While the names of many of the paid militia and civilian volunteers working on the four blockhouses in the Harlem line defenses can be gleaned from the historical record, it is not possible to determine precisely which individuals assisted with the construction of Blockhouse No. 1. A number of

different masons, carpenters and blacksmiths were likely employed, working under the overall supervision of Major Horn and Alderman Nicholas Fish, Chairman of the City's Committee of Defence.

Only one contemporary illustration of Blockhouse No. 1, drawn by James Renwick, survives from when the structure was built in the fall of 1814. Providing a distant view of the Harlem line defenses looking south across Harlem Creek, this sketch depicts the structure in somewhat stylized fashion as a simple square tower with an overhanging hipped roof, a type of building also shown on Mill Rock in Hell Gate and on the hill above Fort Stevens on the east side of the East River (see above, Figure 2.12). It is presumed that Blockhouses 2, 3 and 4, lying to the north of Blockhouse No. 1 and beyond the limit of Renwick's view, would have been depicted in the same manner as these towers, had he drawn them. No formal drawings, plans or specifications have been found for any of these structures and it is possible they may have been only minimally "designed."

As originally built, Blockhouse No. 1 was roughly 34 feet square in plan on the exterior with stone walls extending at least 20 and perhaps up to 25 feet in height. It is unclear if the walls were extended to a greater height through some form of timber superstructure, although the Renwick sketch would seem to argue against this. Inside, a ground floor of wood planks nailed to a frame of timber joists set on an offset from the stone foundations would have supported soldiers firing muskets through the two gunports inserted at chest level on each of the blockhouse's four sides. An upper floor or "terrace" is thought to have been supported by timber joists spanning the interior some five feet below the tops of the walls, although

no evidence of joist pockets survives in the masonry today owing to later modifications. The terrace was supposedly intended to support artillery *en barbette*, although secondary sources state that no cannon were ever mounted in the blockhouses, presumably because hostilities ended before such weaponry could be installed. An interior stair likely provided access between the terrace and the ground floor, while the Renwick sketch suggests that a frame hipped roof capped the entire structure, projecting out beyond the walls (although it is unclear from this drawing how the roof would have allowed the firing of cannon).

Despite close examination of the blockhouse masonry, coupled with archaeological investigation, no evidence has been found for an original exterior doorway giving access into the structure on any of its four sides. The arched entry depicted in the view published by Benson J. Lossing in 1868, and shown toward the northern end of the west wall, has no basis in architectural or archaeological fact (indeed, this opening may be an inaccurate representation of the later doorway inserted further to the south along this wall). It is speculated that, for defensive reasons, access into the blockhouse was originally achieved through a moveable staircase or using ladders.

Much effort has been expended searching for comparable structures of similar age. Most blockhouses designed and built by the U.S. Army Corps of Engineers in the War of 1812 era (and in subsequent conflicts up to and including the Civil War) were larger and more elaborate affairs, as for example at Goat Island and Tomany Hill, both in Rhode Island. No precise parallels for the Harlem line and other New York City blockhouses have been found. Perhaps the most instructive comparable building is the West Blockhouse at Fort Mackinac in Michigan (Photographs 5.1 and 5.2). Although larger, more sophisticated in design, modified and with a chimney and many more gunports, this structure is fairly typical of a standard blockhouse of the period. Such build-

ings have their roots in British colonial blockhouses of the mid- to late 18th century, a fine restored example of which may be seen at Fort Halifax in Waterville, Maine (Photograph 5.3). Blockhouse No. 1 is best viewed as a much simpler and hastily constructed relative of the Fort Mackinac/Fort Halifax model.

Following the conclusion of the war in early 1815, Blockhouse No. 1 likely fell under the control of local landowner Valentine Nutter, a downtown bookseller and stationer, who perhaps used the structure for storage purposes on his 100-acre farm property. By the time Central Park came into being in the late 1850s and early 1860s, the blockhouse was being used as a magazine, most likely by the City and for storing gunpowder needed for public works projects. It is not known when the structure began to be used for this purpose, although, based on map evidence, it may have been after the mid-1830s. To function as a magazine, the blockhouse needed to be sealed tight and was modified through the addition of a low gable roof and an exterior door on the west wall.

Incorporation of the building within the northern extension of the park in the early 1860s led to its abandonment as a magazine and transition into a landmark ruin. At first, the ruin was allowed to gradually deteriorate over the course of 1870s and 1880s, but a move to preserve and rehabilitate the structure gained traction in the 1890s through the efforts of the Society for the Preservation of Scenic and Historic Places and Objects, later supported by the Women's Auxiliary to the American Scenic and Historic Preservation Society. By 1899, the City Department of Parks repaired the masonry, reconstructed the tops of the walls, restored the exterior doorway and built an observation platform and staircase in the interior. The modified blockhouse ruin has been maintained with varying degrees of success ever since.



Photograph 5.1. Blockhouse [Fort Mackinac], Mackinac Island, Michigan 1890-1901.



Photograph 5.2. Recent view of the West Blockhouse, Mackinac Island, 2016. Source: <https://www.wadinginbigshoes.com/2016/05/Fort-Mackinac-Explore-Unwind-And-Enjoy-Breathtaking-Views.html>



Photograph 5.3. The restored French and Indian War-era British-built blockhouse at Fort Halifax in Waterville, Maine, 2017. Source: <https://www.hmdb.org/marker.asp?marker=116133>

The scanned and drafted elevations compiled in the spring of 2017 provide an extremely detailed and accurately scaled record of the blockhouse's masonry fabric down to the level of individual stones and bricks with mortar bonding and pointing. This record will facilitate analysis of the original construction and alteration of the building and can inform its future architectural restoration. The two episodes of archaeological exploration have been helpful in showing how the original construction included a foundation offset for supporting the ground floor interior framing. The more recent phase of archaeological investigation has further demonstrated how the original construction made use of a packed clay leveling deposit, perhaps in an effort to damp proof the structure, and included iron rods or anchor bolts set into the underlying schist to help secure the masonry to the rock outcrop. Archaeological excavation in the southwest corner of the interior also produced evidence of the late 19th-century modifications involving installation of the staircase leading up to the observation platform.

B. FURTHER RESEARCH

As is so often the case when concluding a program of historically-based research, there are always avenues still worth pursuing to flesh out a greater truth. With regard to researching archival sources from the War of 1812 period, the National Archives collections have been thoroughly consulted to little avail, but it is not impossible that diaries or correspondence exist from individuals serving on the Harlem line defenses that may contain information on the blockhouses. Much more historical research could certainly be directed at the period between the War of 1812 and the creation of Central Park. City-held records (perhaps in the Manhattan Borough President's Office or the Department of Parks) may shed light on the use of the blockhouse as a magazine, while development of a clear chain of title for the land on which the structure is located may throw up references to its existence and

use. Records relating to the Nutter and Elliott families, two of the principal owners during this period, may also make mention of the blockhouse. Finally, a more thorough consultation of the annual reports and records of the Central Park Board of Commissioners and of the Department of Parks archive would likely inform a clearer understanding of the maintenance and alteration of the blockhouse over the past century and a half.

The architecture of the blockhouse has been well documented, although specialized analyses of mortar and lithology might help to further clarify areas of original vs. later modified building fabric. Archaeological investigation has now examined, documented and destroyed much of the subsurface character of the blockhouse interior. Unexcavated portions of the interior are best held in reserve for future archaeologists in the hope that more sophisticated techniques of inquiry may present themselves. For example, it is not impossible that some form of remote sensing may one day be able to establish the locations of anchor bolts at the interface of the blockhouse foundations and the bedrock outcrop. The ground surrounding the exterior of the blockhouse may yet hold some limited potential for yielding useful information, notably to the west and south of the structure.

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Appendix A

REVOLUTIONARY WAR TIMELINE

REVOLUTIONARY WAR TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>1775</p> <p>April 19, 1775 – American actions at the Battles of Lexington and Concord force the British back in retreat to Boston.</p> <p>June 17, 1775 – British win the Battle of Bunker Hill, but at severe cost.</p> <p>July 3, 1775 – George Washington assumes command of the Continental Army in Massachusetts.</p> <p>1776</p> <p>March 17, 1776 – American siege forces British to evacuate Boston.</p> <p>July 4, 1776 – Continental Congress formally adopts the Declaration of Independence.</p>	<p>June-July, 1776 – British armada arrives in New York (Staten Island) carrying more than 30,000 British and Hessian troops.</p> <p>August 27-29, 1776 – British forces under William Howe defeat the Americans at the Battle of Long Island. American forces evacuate to Manhattan.</p> <p>September 12, 1776 – Washington begins evacuation of New York City.</p> <p>September 15, 1776 – British invade Manhattan. That night they occupy positions stretching west from McGowan's Pass to the Hudson River. This commences the military occupation of the Harlem area, a presence that lasts for the duration of the war (Hall 1905:17-8; Diary of Frederick Mackenzie 1930:46-9).</p> <p>September 16, 1776 – Americans hold off the British at the Battle of Harlem Heights. Hessian troops under Von Donop's command (including Block's and Minnegrode's battalions) occupy positions within the present northern end of Central Park during the battle (Hall 1905:19-20; Hall 1911:412; Stokes 1916 I:323).</p>

REVOLUTIONARY WAR TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
	<p>September 20, 1776 – Musgrave's command is stationed at McGowan's Pass. A British order book entry details the preparations being made for the construction of a line of fortifications designed to protect New York City from an American land offensive from the north. All available fascines (cylindrical bundles of sticks bound together for use in constructing fortifications) are ordered to be taken to "McGowan's House" (Hall 1905:21; Hall 1911:413).</p> <p>September 21, 1776 – British order book notes that the First Light Infantry is stationed at McGowan's Pass and that a working party of 400 men is to report to "McGowan's House" the next day (Hall 1905:21; Hall 1911:413; Stokes 1926 V:1024). A letter of this date reports that the main body of the British army is encamped between the 7th and 8th milestones - the 7th milestone is sited very near the Waldron House, while the 8th milestone is sited just to the north of the Kortwright house (Stokes 1926 V:1024).</p> <p>September 22, 1776 – Capt. Archibald Robertson, a military engineer involved in the construction of the defensive line, records in his diary that a chain of redoubts is to be built from the Hudson River across the heights at Harlem to the East River. Each redoubt is to be protected by an abatis. It is also recorded that the 400-man work party had reported as ordered and commenced work (Stokes 1926 V:1024; Diary of Frederick Mackenzie 1930:61; Cohn 1962).</p> <p>September 24, 1776 – Robertson notes that there are to be a total of five redoubts and three single gun batteries, along with some supporting earthworks, within the Harlem line. Work is continuing despite the fact that the work force has been reduced to 200 men. A letter notes that the British advance post is sited "at the Black Horse tavern" (probably a reference to the Benson/Leggett Tavern) (Hall 1905:21; Hall 1911:413; Stokes 1926 V:1026-7; Diary of Frederick Mackenzie 1930:64; Cohn 1962).</p> <p>September 25, 1776 – the work party is further reduced to 100 men (Hall 1905:22; Hall 1911:413; Stokes 1926 V:1027).</p>

REVOLUTIONARY WAR TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>October 13, 1776 – British forces occupy Crown Point</p>	<p>September, 1776 – there is a strong Hessian presence in the troops that are encamped on the heights near Harlem in 1776 (Hall 1905:23; Stokes 1926 V:1036).</p> <p>October 1, 1776 – Robertson records that the redoubts are to be outfitted for larger guns (they had originally been built to house only regular troops, with no facilities for artillery). "The Rock Redoubt" is established to hold three large guns (this may refer to one of the redoubts on the rocky brow of the Great Hill). Two new "fleches" are ordered to be built near McGowan's on the right line (one of these works is finished that same day and armed with two large guns). Robertson also notes that two of the redoubts on the left of the line and the entire line of abatis had been completed (Stokes 1926 V:994, 1027; Cohn 1962).</p> <p>October 2, 1776 – the second fleche at McGowan's is completed (Stokes 1926 V:1027; Cohn 1962).</p> <p>October 4, 1776 – Robertson notes that a single gun has been added to the left of "the Rock Redt" (Stokes 1926 V:1027).</p> <p>October 5, 1776 – Robertson describes a portion of the Harlem line in some detail, noting that it has an 8-foot-thick parapet that is connected to a 40-foot-square redoubt which has a front wall that is 8 feet thick and side and rear walls that are 6 feet thick (Cohn 1962).</p> <p>October 13, 1776 – Frederick Mackenzie, another British army officer, notes in his diary that the defensive works are largely complete (Diary of Frederick Mackenzie 1930:79-80).</p> <p>October 28, 1776 – British achieve a costly victory over the Americans at the Battle of White Plains.</p> <p>November 16, 1776 – British capture Fort Washington (soon to be renamed Fort Mifflin).</p> <p>Mid-November, 1776 – Earl Percy's brigade is encamped in the McGowan's Pass vicinity. This force left this position to participate in the attack on Fort Washington (Hall 1905:22; Hall 1911:414).</p>

REVOLUTIONARY WAR TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>December 25, 1776 – Washington begins the crossing of the Delaware.</p> <p>December 26, 1776 – American troops defeat the Hessians at the Battle of Trenton.</p> <p>1777</p> <p>January 3, 1777 – American forces defeat the British at the Battle of Princeton.</p> <p>January 6, 1777 – Continental Army encamps for the winter at Morristown.</p> <p>May 28, 1777 – Continental Army decamps from Morristown and moves into central New Jersey to counter a potential American advance on Philadelphia.</p> <p>September 19, 1777 – American riflemen inflict a surprise defeat on the British at the first Battle of Saratoga.</p> <p>September 22-27, 1777 – British forces outmaneuver the Continental Army and capture Philadelphia.</p> <p>October 7, 1777 – American troops under Benedict Arnold force the British into retreat at the second Battle of Saratoga.</p> <p>October 17, 1777 – British army under General Burgoyne surrenders to General Horatio Gates.</p> <p>December 19, 1777 – Continental Army encamps at Valley Forge for the winter.</p>	<p>November 20, 1776 – American forces abandon Fort Lee and begin their retreat south through New Jersey into Pennsylvania.</p> <p>November 22, 1776 – The British 6th Brigade and one battalion of the 2nd Brigade are ordered to encamp near the former American lines in Harlem Heights in order to dismantle the fortifications. The soldiers are ordered to collect the fascines and palisades to be sent to New York, and detach parties to Harlem and McGowan's Pass to prepare houses for their winter quarters (Howe's Orders).</p> <p>November 11, 1777 – Kemble reports that the British army has 6,200 "rank and file" for the defense of Kings Bridge, McGowan's Pass, New York, Paulus Hook, Long and Staten Islands. Of that number 4,970, exclusive of artillery and a detachment of light horse, are on duty in New York, McGowan's Pass and Kings Bridge (Kemble's Journal).</p>

REVOLUTIONARY WAR TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
	1779
	<p>January 1, 1779 – “McGowan’s Pass & Fort Knyphausen” are manned by the following German Corps: Du Corps, Mirbach, Losberg, Knyphausen, Trumbach, Donop and artillery (Mackenzie Papers).</p> <p>August 19, 1779 – Henry “Light Horse Harry” Lee carries out a successful offensive against the British stronghold at Paulus Hook.</p>
December 1, 1779 – Continental Army encamps at Morristown for the winter.	1780
March 29-May 12, 1780 – British General Henry Clinton lays siege to Charleston, South Carolina, forcing the surrender of its garrison.	<p>January-November, 1780 – the Mirbach Corps are stationed at McGowan’s Pass with a force of between 450 and 500 troops (Mackenzie Papers).</p>
June 23, 1780 – American troops under Nathanael Greene repel the British at the Battle of Springfield, New Jersey.	
August 16, 1780 – British forces defeat American troops at the Battle of Camden, South Carolina.	
December, 1780 – Continental Army encamps at Morristown for the winter.	
1781	
March 1, 1781 – the States formally ratify the Articles of Confederation.	
	<p>June 12, 1781 – British order book notes that the Regiment du Corps is to encamp to the left of McGowan's Pass, and the Regiment of Prince Charles to the right (Hall 1911:416).</p>

REVOLUTIONARY WAR TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>August 21, 1781 – the French and American forces under Washington and Rochambeau slip away from New York and march south to confront Cornwallis in Yorktown.</p>	<p>July 18, 1781 – George Washington plans a possible attack on Manhattan. He and several leading French generals scout the island from the Hudson River, with Washington recording what he sees in his journal. On “McGowans heights” he notes the “Tents” of what he estimated to be two battalions of British (or Hessian) troops; to the southwest, “a number of Huts”, but he is unable to tell whether or not these are inhabited (Stokes 1926 V:1032-3).</p> <p>August 19, 1781- John Von Krafft, an officer in Von Bose's Hessian regiment, keeps a diary during the time he is stationed at McGowan's Pass. He reports that English grenadiers and Loyalist light infantry are encamped at the pass (Hall 1905:25; Hall 1911:417).</p>
<p>October 19, 1781 – British troops under Cornwallis surrender at Yorktown.</p>	<p>September 1, 1781 – Von Krafft reports that the British 37th Regiment is encamped on the east side of McGowan's Pass within the encampment formerly occupied by Prince Karl's regiment (Hall 1905:25; Hall 1911:417).</p> <p>October 2, 1781 – Von Krafft's regiment is ordered to occupy the former Prince Karl's regiment encampment area (Hall 1905:25; Hall 1911:417).</p>
<p>1782</p> <p>January, 1782 – As the British begin to withdraw troops, loyalists flee the United States in great numbers. Over the course of the war, more than 100,000 Tories depart.</p>	<p>December 8, 1781 – Abraham D’Aubant, Commanding Engineer, and Alexander Mercer, late Commanding Engineer, report that “McGowans Pass To be occupied by a chain of strong flanking Redouts, with intermediate Batteries – Also advanced Batteries, in front of the Left, for the purpose of Commanding the Plains of Harlem, in case the Enemy should attempt a Descent in that Quarter – Note – The advanced Batteries to be Volants” (Clinton Papers).</p> <p>December 19, 1781 – D’Aubant reports “McGown’s Pass The Barracks erecting here, will be finished at the close of this month” (Clinton Papers).</p>

REVOLUTIONARY WAR TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>April 12, 1782 – Peace talks between Britain and the United States begin in Paris.</p>	<p>February 15, 1782 – at McGowan's Pass 453 men of the Du Corps are responsible for making 2,200 fascines and 468 men of the Prince Charles Corps for making 2,280 fascines (Mackenzie Papers).</p> <p>May 1, 1782 – the Du Corps (468 men) and the Prince Charles Corps (507 men) are stationed at McGowan's Pass (Mackenzie Papers).</p> <p>June 15, 1782 – the Hesse Hanau Regiment are ordered to "march to McGowans pass and occupy the Barracks there" (Mackenzie Papers).</p> <p>June 24, 1782 – memorial of Lt. Col. Janecke requests money for subsistence of Hesse Hanau troops (Billias 1906:533) (Carleton Papers).</p> <p>July 10, 1782 – troops at McGowan's Pass are placed under the command of Major General Kospoth (Mackenzie Papers).</p> <p>September 2, 1782 – "The Quarter Masters and Camp colour Men of the British Grenadiers 7th, 37th, 38th, 40th, 42nd, 54th, Hessian Grenadiers, Regiments of Du Corps, Prince Charles, Knyphausen, Buneau, of the 17th Dragoons, Jagers and Hesse Hanau Corps, to be at McGowans Pass at 9 o'clock tomorrow morning where the Deputy Q Master General will give them further orders" (Mackenzie Papers).</p> <p>September 3, 1782 – "A sufficient Party to be at 6 o'clock tomorrow morning on the ground marked out for those Regiments, whose Camp colour Men were directed to attend McGowns pass this Morning in order to dig wells as contiguous as possible to their respective Encampments. The Chief Engineer will direct them to be supplied with Tools on the Spot – And they will report to the Adjutant General the number of Wells they have found necessary for each Battalion" (Mackenzie Papers).</p> <p>September 3, 1782 – memorial of Lt. Col. Janecke requests money for subsistence of Hesse Hanau troops (Billias 1907:103) (Carleton Papers).</p> <p>September 5, 1782 – "The British Grenadiers, 38th and 54th Regiments to cross to Horn's Hook tomorrow morning at 5 o'clock from whence they will march and</p>

REVOLUTIONARY WAR TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
	<p>Encamp on the Ground marked out for them yesterday near McGowans pass.</p> <p style="padding-left: 40px;">The 37th, 40th, and 42nd Regiments Regiment Du Corps and Prince Charles the Jagers, 17th Dragoons and Hanau Corps to march tomorrow morning at 5 o'clock and Encamp on the ground Marked out for them.</p> <p style="padding-left: 40px;">The 7th Regiment to Cross from Brooklyn to New York tomorrow Evening, and to take up the Quarters of the 42nd Regt. As soon as the Regiments arrive on their ground, they will immediately clear it, and make good Communications between each Corps, upon application to the Commissary at Marston's Wharf they will be supplied with provisions Straw etc.</p> <p style="padding-left: 40px;">The following arrangement to take place 'till further orders. the 7th, 37th, and 42nd Regiments to be Brigaded under the command of Brigadier General Clarke. The 40th and 54th Regts. to form a Brigade under the command of Brigadier General Bruce. The British Grenadiers and 38th Regiment to be inspected by Lieut. Colonel Fox. These Brigades to report to Lieut. General Campbell, the reserve consisting of 17th Dragoons, Jagers and Hanau Corps to be commanded by Colonel Wurml.</p> <p style="padding-left: 40px;">The British Grenadiers and 38th Regiment to take the duty at Snake hill, and send a sufficient Guard to preserve the Barracks at McGowans pass 'till further orders" (Mackenzie Papers).</p> <p>September 1782 – "Order of battle of the corps encamped at McGowan's Pass 1782" provides a sketch of troop positions in the event of an attack, identifying corps/regiments and commanding officers (Simcoe Papers).</p> <p>September 5, 1782 – Von Krafft records that a large Hessian force has been scheduled to encamp at McGowan's Pass, but this move is delayed due to a lack of water at the proposed camp (Hall 1905:26; Hall 1911:417).</p> <p>September 29, 1782 – British troops march from the encampments through McGowan's Pass to Kingsbridge (Mackenzie Papers).</p> <p>October 5, 1782 – Guy Carleton, British commander, is "out with the army at McGowan's Pass ..." (Billias 1907:152) (Carleton Papers).</p>

REVOLUTIONARY WAR TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>November, 1782 – Continental Army encamps at New Windsor in the Hudson Highlands.</p>	<p>October 11, 1782 – Lt. General Lossberg provides an "Opinion" concerning the defense of Manhattan from the north and the advantages of McGowan's Pass as a defensive position (Billias 1907:162-163) (Carleton Papers).</p> <p>October 13, 1782 – "Weekly State of the Troops Encamped near McGowans Pass" records a combined British and German force of 19 corps and 9,316 rank and file (Billias 1907:166) (Carleton Papers).</p> <p>October 25, 1782 – Von Krafft notes that the Yagers are stationed in the "Barracks" at McGowan's Pass and that they are soon to be joined by Elate's battalion (Hall 1905:26-7; Hall 1911:417).</p> <p>November 27, 1782 – "The 54th Regt. is quartered in the Barracks on each side the Road at McGowen's Pass – five Companies of the 57th Regt. ly in the West Barracks (so Called) between McGowen's Pass & the North River .." (George Washington Papers, Tallmadge correspondence).</p> <p>December 12, 1782 – 54th and 57th Regiments are stationed at McGowan's Pass under the overall command of Major General Kospoth (Mackenzie Papers).</p>
<p>April 19, 1783 – Washington declares an end to the fighting eight years to the day after war began.</p>	<p style="text-align: right;">1783</p> <p>January 1, 1783 – the 54th Regiment (515 men) and the 57th Regiment (503 men) are stationed at McGowan's pass (Mackenzie Papers).</p> <p>May 25, 1783 – "The Jagers, & Hanau Free Corps under the command of Colonel Wurml" are dispatched to McGowan's Pass to occupy the Barracks (Mackenzie Papers).</p> <p>July 1, 1783 – two groups of Chasseurs are stationed at McGowan's Pass: Hessian (707 men) and Anspach (513 men) (Mackenzie Papers).</p>

REVOLUTIONARY WAR TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>August 17, 1783 – instructions are received from the Crown for redeployment of all British forces remaining in North America (Mackenzie Papers).</p> <p>September 3, 1783 – final peace treaty signed between Britain and the United States in Paris.</p> <p>November 2, 1783 – Washington issues “farewell orders” to the “Armies of the United States.”</p>	<p>October 20, 1783 – troops at McGowan's Pass are placed under the command of Colonel Wurml of the Jagers (Mackenzie Papers).</p> <p>October 25, 1783 – Hessian Grenadier Battalion of Platt are ordered to march on Monday morning to McGowan's Pass where it is to be quartered until further orders (Mackenzie Papers).</p> <p>November 19, 1783 – the 80th Regiment ordered to join with the Jagers at McGowan's Pass on November 21 and then “march to New-York, and embark on board the Transports allotted them. A Barrack Master is to be left at the Posts to deliver up the Keys” (Mackenzie Papers).</p> <p>November 21, 1783 – “the barracks at McGowan's” were evacuated on the morning of November 21. All barracks being evacuated were to be left with their furnishings intact. Several old cannon were also to be left within some of the fortifications. (Hall 1905:28-29; Hall 1911:418-9; Stokes 1916 1:330).</p> <p>November 25, 1783 – British evacuate New York City, beginning with the withdrawal of troops from advance positions at Kingsbridge and McGowan's Pass. American troops occupy the former British positions and encampments for several days in late November.</p> <p>December 4, 1783 – Washington bids farewell to his officers at Fraunces Tavern in New York City.</p>

Appendix B

WAR OF 1812 TIMELINE

WAR OF 1812 TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>1803</p> <p>1803 – British begin to impress American sailors.</p> <p>1807</p> <p>1807 – President Jefferson imposes an embargo on Great Britain that results in unanticipated economic hardship for American merchants. The unpopular embargo is discontinued in 1809.</p> <p>1811</p> <p>November 1811 – The Battle of Tippecanoe takes place near Lafayette, Indiana, between American forces led by Gen. William Henry Harrison and Native American warriors associated with Tecumseh. The battle is technically an American victory but it leads to an increase in violence on the frontier between British-backed Native American groups and American settlers aggressively pushing westward. American public opinion blames the violence on Great Britain.</p> <p>1812</p> <p>June 1812 – The United States declares war on Great Britain. At nearly the same time, Napoleon invades Russia, rekindling the Napoleonic Wars in Europe.</p> <p>July 1812 – U.S. military forces invade Canada, the first of three failed attempts to break Canada away from British control.</p> <p>1813</p> <p>1813 to June 1814 – A series of battles take place across the Great Lakes Region in western New York, Ohio, Michigan and Canada with neither side gaining a superior strategic advantage.</p>	<p>December 1813 – The City of New York's Common Council establishes a Committee of Defence [sic] to prepare the city against possible British attack. Alderman Nicholas Fish, lawyer, is appointed chairman (Proceedings of the Committee of Defence 1814-15).</p>

WAR OF 1812 TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>1814</p> <p>April 1814 – British allies defeat Napoleon in Europe, driving him into exile on Elba. This frees resources and allows Britain to adopt a more aggressive military strategy in North America. Three invasion armies are sent to attack the United States: one army to invade southward from Canada down Lake Champlain and into upstate New York, a second army to seize New Orleans to control the Mississippi, and a third army to raid the East Coast to draw American forces away from Canada.</p>	<p>July 1814 – Fear that New York City will be attacked by the British reaches a fever pitch in the city. The Committee of Defence is led by Mayor DeWitt Clinton and Nicholas Fish and aided by American Brig. Gen. Joseph G. Swift who is engaged to draw up plans to improve the city's fortifications. The emphasis is on harbor fortifications to defend against an enemy navy, although among Fish's recommendations is also a line of defense to extend across the northern part of Manhattan to resist a possible land-based attack from the north (Proceedings of the Committee of Defence 1814-15; Lossing 1868: 969-971; The Memoirs of Gen. Joseph Gardner Swift 1890: 130-5).</p> <p>[Joseph G. Swift -born on Nantucket in 1783 - joined the United States Army in 1800 – worked in the construction of fortifications from the beginning of his time in the military - in 1801 he was sent to the newly opened military school at West Point- in 1802 he was assigned to the army's newly formed Corps of Engineers - later that same year Swift and another cadet constituted the first graduating class at West Point - Swift returned to assume command at West Point in 1807 - in 1812 he was promoted to Colonel and made Chief Engineer of the United States Army - in the spring of 1813 he was given command of the several defensive installations on Staten Island (while continuing his responsibilities at West Point) - this brought him to New York and made him available to assist the City in the establishment of their fortification systems (The Memoirs of Gen. Joseph Gardner Swift 1890)]</p> <p>July 20, 1814 – New York State's Governor Daniel Tompkins orders state militia units to mobilize for the defense of New York City against British attack (Tompkins Papers).</p> <p>August 4, 1814 – President Madison orders state militia to join regular U.S. Army forces in the defense</p>

WAR OF 1812 TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>August 19-25, 1814 – British invade the Chesapeake, routing American forces at the Battle of Bladensburg, Maryland. Washington, D.C. is left undefended; the British burn the U.S. Capitol and White House.</p>	<p>delivered from the arsenal in Albany and from other locations (West Point, Navy Yard at Wallabout) to the defense of New York City where they are in short supply. Tompkins indicates a deficiency of cannon and the need for the state to establish a foundry near West Point (Tompkins Papers).</p> <p>August 14, 1814. Commanding officers of militia are ordered to report to Governor Tompkins at New York City Hall on August 18. The militia are to procure water transportation to New York City from contractors “upon the most reasonable and economical terms.” (Tompkins Papers).</p> <p>August 17, 1814 – Brig. Gen. Swift informs Committee of Defence that the complex of redoubts at McGowan's Pass and other works in the Harlem area have been laid out (Proceedings of the Committee of Defence 1814-15).</p> <p>August 18, 1814 – Brig. Gen. Martin Heermance's militia brigade arrives from Rhinebeck and encamps near the McGowan's Pass area. Work officially begins on the construction of Fort Clinton (named for the mayor) and the defensive line at McGowan's Pass (Proceedings of the Committee of Defence 1814-15; Guernsey 1895: 220).</p> <p>August 19, 1814 -- on August 19th steamboat transportation was arranged between New York City and Harlem for those volunteering to work on the fortifications – 400 men were expected to be working on the Harlem line the following day (Proceedings of the Committee of Defence 1814-15)</p> <p>August 19-31, 1814 – Work progresses rapidly on the fortifications around McGowan's Pass, but properly equipping and supplying the militia units throughout the city and the surrounding area proves to be a major challenge (Tompkins Papers).</p> <p>August 22, 1814. A party of 100-200 gone to work on Fort Clinton via steamboat from Bergen, N.J. (Newspaper, <i>Columbian</i>, GenealogyBank.com).</p> <p>August 24, 1814 -- Brig. Gen. Martin Heermance was acknowledges the assistance of Valentine Nutter, the McGowan family, and others during the period</p>

WAR OF 1812 TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>August 31, 1814 – Another British army begins moving from Upper Canada south down Lake Champlain.</p>	<p>when his command was setting up their encampment(Guernsey 1895:225, 226).</p> <p>August 27, 1814 – Brig. Gen. Swift informs the Committee that he has been unable to acquire the stone necessary to build the tower (or blockhouse) he had proposed at McGowan's Pass-he announces that he has decided to replace this work with alternative defenses of earth and timber (Proceedings of the Committee of Defence 1814-15).</p> <p>August 27, 1814. The militia is ordered to parade on Tuesday next before Maj. Gen. Ebenezer Stevens (Division Commander, U.S. Army) to be inspected. Tompkins emphasizes the men should be properly equipped and repeatedly urges that every militiaman should be equipped with a musket. Also orders that it should be repeated to the men regarding military organization and command, specifically who they report to and where to report "in case of sudden alarm." Encourages all patriotic men in service to recognize the importance of arming themselves and turning their attention "to military instruction and discipline." (Tompkins Papers).</p> <p>August 28, 1814. – Governor Tompkins reprimands Brig. Gen. Heermance for the poor deportment of his troops, mentioning deficient equipment and disorderly conduct.</p> <p>August 29, 1814 – Governor Tompkins orders additional militia regiments to the defense of New York City. He also orders the citizens of New York City to turn in all privately owned weapons at the state arsenal for use of the army (Tompkins Papers).</p> <p>August 31, 1814 – a New York City newspaper reports that the works around McGowan's Pass are taking shape and not far from completion - it is also reported that "Rock blowers," 10 "Dock builders," and 2 blacksmiths are being employed in the work on the Harlem line. The committee-authorizes the construction of barracks to serve the troops in the Harlem area. (Proceedings of the Committee of Defence 1814-15; Guernsey 1895:296; Hall 1905:38; Stokes 1926 IV:1575, 1576).</p> <p>September-December 1814 – Work continues on the fortifications at McGowan's Pass with labor provided by volunteers and militia detachments. Barracks are</p>

WAR OF 1812 TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>September 6-11, 1814 – British invasion of upstate New York from Canada is halted at the Battle of Plattsburgh. New York and Vermont militia and detachments of regular troops of the U.S. Army and a U.S. naval squadron successfully turn back the British forces.</p> <p>September 13, 1814 – British bombardment of Fort McHenry in Baltimore. National Anthem composed by Francis Scott Key.</p>	<p>constructed near McGowan's Pass. Officers deal with complaints about bad food and slow pay. Instances of desertion and poor conduct increase among the militia units (Tompkins Papers).</p> <p>September 14, 1814 – Governor Tompkins reprimands Brig. Gen. Heermance for failing to send in inspection returns from which the actual number of officers and men and in the brigade can be known by headquarters.</p> <p>September 16, 1814 –Brig. Gen. Peter Curtenius is ordered to station his state militia brigade (from Delaware County) at Harlem Heights with Heermance's brigade. Total number of men at Harlem Heights/McGowan's Pass area is estimated at 3,500 men (Tompkins Papers)</p> <p>September 19th, 1814 – Local resident Valentine Nutter applies to the Committee seeking compensation for trees cut from his land to provide timber for the construction of fortifications, the Committee agrees to compensate him. Brig. Gen. Heermance files a request with the Committee seeking that additional bunks be built in the "Barracksat Haerlem" The Committee approves this request (Proceedings of the Committee of Defence 1814-15).</p> <p>September 30, 1814. The 1,600-man militia brigade commanded by Heermance is still garrisoning the Harlem line and is encamped in the McGowan's pass area (Guernsey 1895:329; Hall 1905:38; Hall 1911:426).</p> <p>October 7, 1814. The Harlem line is reported as not yet fully complete (Proceedings of the Committee of Defence 1814-15)</p> <p>October 23, 1814 – President Madison places Governor Daniel Tompkins in command of the Third Military District. Tompkins assumes command of all federalized troops in southern New York (Tompkins Papers).</p>

WAR OF 1812 TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
	<p>October 25, 1814. Work is still continuing on the Harlem line (Proceedings of the Committee of Defence 1814-15)</p> <p>November 3, 1814 – A 400-man detachment from Brig. Gen. Curtenius's militia brigade relieves a similar size detachment from Brig. Gen. Mapes's militia brigade at McGowan's pass. The relief detachment is ordered to occupy the "Cantonment" of the troops they are relieving.</p> <p>November 4-6, 1814 – Governor Tompkins confides to Secretary of War James Monroe that there is extreme difficulty finding supplies for the forces stationed in and around New York City. He plans to discharge most of the units due to expense and coming of winter.</p> <p>November 9, 1814. Governor Tompkins orders a review of Brig. Gen. Curtenius's brigade at 11 o'clock on Nov. 10th. A detail from Curtenius's brigade is to relieve the guard stationed at McGowan's Pass on November 11 (Tompkins Papers, G.O.)</p> <p>November 12, 1814 – The last volunteer party works on the Harlem line. The fortifications are essentially complete by this time (Guernsey 1895: 389).</p> <p>November 15, 1814. – Brig. Gen. Swift reports that the line of works across Manhattan and Long Island is in want of ordnance (Tompkins Papers).</p> <p>November 19, 1814 – Governor Tompkins write to the Committee of Defence to request if the committee will advance funds to pay the militia on a requisition from the State of New York. The state paymaster has insufficient funds (Tompkins Papers).</p> <p>November 21, 1814 – Brig. Gen. Heermance's brigade is mustered out at the end of its three-month service period (Tompkins Papers).</p>

WAR OF 1812 TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
<p>December 24, 1814 – Treaty of Ghent signed.</p> <p>1815</p> <p>January 8, 1815 – Battle of New Orleans takes place two weeks after the signing of the peace treaty due to the lag in trans-Atlantic communications. Gen. Andrew Jackson achieves an American victory</p> <p>February 16, 1815 – U.S. Senate ratifies and President Madison signs the Treaty of Ghent, officially ending the War of 1812.</p>	<p>November 22, 1814 – The detail from Brig. Gen. Curtenius's brigade on duty at the works at Harlem Heights is ordered to rejoin the regiments. The tents and public property in their charge will be taken possession of and receipts given by the Quartermaster of Brig. Gen. Van Orden's Brigade. A detail of 150 men will be made from Van Orden's to garrison the Forts and protect the works on that line of defense. The detail will be commanded by Lt. Col. Belknap. (Tompkins Papers).</p> <p>November 25, 1814 – A military parade is held in New York City to celebrate "evacuation day." November 25, 1783 was the day that the British army evacuated New York City following the end of the American Revolution.</p> <p>November 28, 1814 – Governor Tompkins orders the remaining militia discharged as soon as they can be paid and mustered out.</p> <p>November 28-December 11, 1814 – Most New York militia units mustered out except for a small number of units ordered to remain on duty in the City and vicinity. These troops under Capt. Stevens are ordered to take up their Winter garrison "on Harlem Heights." (Tompkins Papers).</p> <p>November 29, 1814 – All work on the Harlem line formally halted due to the onset of winter (Proceedings of the Committee of Defence 1814-15).</p> <p>December 7, 1814 – Governor Tompkins attempts to borrow \$200,000 from the Bank of America to pay the militia (Tompkins Papers).</p>

WAR OF 1812 TIMELINE

National Events	Events in and around New York City and at McGowan's Pass
	<p>April 6, 1815 – Report of auctioning of planks and lot of timber on the line of block houses at McGowan's Pass and Fort Clinton, suggesting either surplus material not used or that the fortifications are being dismantled and sold off.</p> <p>1819</p> <p>1819-20 - the McGowan's Pass fortification complex is still represented on maps produced five years after the close of the war.</p> <p>1860</p> <p>1860 – Lossing depicts some of the remaining vestiges of the fortifications at McGowan's Pass (Lossing 1868).</p> <p>1864</p> <p>1864 – Fortification remains shown on maps published by the Central Park Commissioners (Central Park Commissioners 1864).</p>

Appendix C

SUMMARY OF SUBSURFACE TESTING

APPENDIX C
SUMMARY OF SUBSURFACE TESTING

Excavator	Unit Type	No.	Context	Soil Description [Interpretation]	Munsell	Cultural Materials
Columbia University	Trench	A	1		--	--
			2			Modern Glass Modern Synthetic --
			3			Historic Fired Clay - Non-ceramic Historic Glass Historic Metal Indeterminate Flora Indeterminate Stone Modern Fauna Modern Glass Modern Metal Modern Synthetic
			4			-- Historic Fauna Modern Glass Modern Synthetic -- Historic Fauna Historic Fired Clay - Non-ceramic
						Historic Glass Historic Metal Historic Mineral Indeterminate Stone Modern Composite Modern Fired Clay - Ceramic Modern Glass Modern Metal

APPENDIX C (Cont.)
SUMMARY OF SUBSURFACE TESTING

Excavator	Unit Type	No.	Context	Soil Description [Interpretation]	Munsell	Cultural Materials
Columbia University	Trench	A	4		--	Modern Synthetic
			5			Historic Composite
						Historic Fired Clay - Non-ceramic
						Historic Stone
						Modern Glass
			6			Historic Metal
						Modern Fauna
			7			--
						Historic Glass
						Historic Metal
						Historic Stone
						Modern Glass
						Modern Metal
						Modern Synthetic
			8			Historic Glass
						Historic Metal
						Modern Glass
			9			Historic Glass
						Historic Metal
						Modern Glass
			10			Historic Metal
						Modern Fauna
			11			--
						Historic Composite
						Historic Glass
						Historic Metal
						Historic Stone
						Modern Fauna
						Modern Glass

APPENDIX C (Cont.)
SUMMARY OF SUBSURFACE TESTING

Excavator	Unit Type	No.	Context	Soil Description [Interpretation]	Munsell	Cultural Materials
Columbia University	Trench	A	12		--	Historic Composite
			13			Historic Glass
			15			Historic Metal
			16			Historic Mineral
			17			Modern Glass
			18			Historic Glass
			19			Historic Metal
			20			Modern Glass
			20			Historic Glass
			20			Historic Metal

APPENDIX C (Cont.)
SUMMARY OF SUBSURFACE TESTING

Excavator	Unit Type	No.	Context	Soil Description [Interpretation]	Munsell	Cultural Materials
Columbia University	Trench	A	20 21 22		--	Modern Fauna Historic Composite Historic Metal
Columbia University	Trench	B	101 102 103 104 105 106 107 108 109		--	-- Modern Glass Modern Synthetic Historic Composite Modern Glass Modern Metal Modern Synthetic Historic Composite Historic Glass Historic Metal Historic Stone Historic Composite Historic Glass Historic Stone Indeterminate Mineral Modern Glass Modern Metal Historic Stone Modern Fauna -- Historic Glass Historic Stone Historic Composite Modern Glass Historic Composite

APPENDIX C (Cont.)
SUMMARY OF SUBSURFACE TESTING

Excavator	Unit Type	No.	Context	Soil Description [Interpretation]	Munsell	Cultural Materials
Columbia University	Trench	B	111 113		--	Historic Fired Clay - Ceramic Modern Glass
Columbia University	General Provenience	B	1			Indeterminate Stone
Hunter Research, Inc.	Excavation Unit	1	1	silty loam [topsoil]	7.5YR 3/2	-- Historic Composite Historic Fauna Historic Fired Clay - Ceramic Historic Flora Historic Glass Historic Metal Historic Stone Modern Fauna Modern Glass Modern Metal Modern Synthetic
			2	silty clay [historic fill]	7.5YR 5/6	Historic Metal Modern Fauna
			3	[cut filled by cx 4]	--	--
			4	[fill of context(s) 3]	10YR 2/2	Historic Composite Historic Fauna Historic Fired Clay - Ceramic Historic Glass Historic Metal Historic Mineral Historic Stone Indeterminate Flora Modern Composite Modern Glass

APPENDIX C (Cont.)
SUMMARY OF SUBSURFACE TESTING

Excavator	Unit Type	No.	Context	Soil Description [Interpretation]	Munsell	Cultural Materials	
Hunter Research, Inc.	Excavation Unit	1	4	[fill of context(s) 3]	10YR 2/2	Modern Metal	
			5	mottled	10YR 6/1, 10YR 3/2, 10YR 7/1	Modern Synthetic Historic Glass	
			6	mottled sand loam with debris [historic fill]	7.5YR 5/4, 7.5YR 2/1, 7.5YR 7/1	Historic Metal Modern Glass Historic Composite	
							Historic Fauna Historic Fired Clay - Non-ceramic
							Historic Glass Historic Metal Historic Mineral Historic Stone Indeterminate Flora Modern Fauna Modern Glass Modern Synthetic
			7	[schist bedrock]	--	--	
			8	sand loam with mortar [historic fill]	7.5YR 5/2		
			104	[stairway platform in southwest corner]	--	Historic Composite	
Hunter Research, Inc.	Excavation Unit	2	1	silty loam [modern topsoil]	7.5YR 3/2	Historic Fauna Historic Fired Clay - Ceramic Historic Fired Clay - Non-ceramic Historic Glass Historic Metal Indeterminate Mineral Indeterminate Stone Modern Composite	

APPENDIX C (Cont.)
SUMMARY OF SUBSURFACE TESTING

Excavator	Unit Type	No.	Context	Soil Description [Interpretation]	Munsell	Cultural Materials
Hunter Research, Inc.	Excavation Unit	2	1	silty loam [modern topsoil]	7.5YR 3/2	Modern Glass Modern Metal Modern Synthetic Prehistoric Stone
			2	[cut for cx 3]	--	--
			3	silty loam [fill of context(s) 2]	7.5YR 3/1	Historic Fauna Historic Flora Historic Glass Historic Metal Modern Glass Modern Metal Modern Synthetic
			4	silty clay	10YR 4/4	Historic Glass Historic Metal Indeterminate Mineral Modern Glass
			5	silty loam [modern fire pit]	10YR 2/1	--
			6	[cut for cx 5]	--	
			7	silty loam	10YR 3/2	Historic Composite Indeterminate Mineral Modern Glass
			8	mortar with sand loam	7.5YR 6/1	Historic Composite Historic Metal
			9	clay loam	7.5YR 6/4	Modern Flora Modern Glass Modern Synthetic
			10	sandy clay loam	7.5YR 3/2	Historic Metal Modern Fauna Modern Glass
			11	clay silt loam [B horizon]	7.5YR 4/4	Indeterminate Metal

APPENDIX C (Cont.)
SUMMARY OF SUBSURFACE TESTING

Excavator	Unit Type	No.	Context	Soil Description [Interpretation]	Munsell	Cultural Materials
Hunter Research, Inc.	Excavation Unit	2	11	clay silt loam [B horizon]	7.5YR 4/4	Modern Glass Modern Mineral Modern Synthetic
			12	[schist bedrock]	--	--
			100	[southern foundation of blockhouse]		
			101	[foundation of eastern side of blockhouse]		Historic Composite
Hunter Research, Inc.	Excavation Unit	3	1	silty loam [topsoil]	10YR 2/1	Historic Fired Clay - Non-ceramic Historic Glass Historic Metal Modern Composite Modern Fauna Modern Fired Clay - Ceramic Modern Glass Modern Metal Modern Mineral Modern Synthetic
			2	silty clay [possible B horizon]	10YR 5/8	Historic Metal Modern Glass Modern Synthetic
			3	[schist bedrock]	--	--
Hunter Research, Inc.	Excavation Unit	4	1	silty loam [A horizon]	10YR 2/1	Historic Composite Historic Fauna Historic Metal Indeterminate Fauna Indeterminate Flora Indeterminate Stone Modern Fauna Modern Glass

APPENDIX C (Cont.)
SUMMARY OF SUBSURFACE TESTING

Excavator	Unit Type	No.	Context	Soil Description [Interpretation]	Munsell	Cultural Materials
Hunter Research, Inc.	Excavation Unit	4	1	silty loam [A horizon]	10YR 2/1	Modern Synthetic
			2	silty clay [fill]	7.5YR 5/6	Historic Fired Clay - Ceramic
					Historic Glass	
					Historic Metal	
					Historic Stone	
					Indeterminate Fauna	
					Indeterminate Mineral	
			Modern Composite			
			Modern Fauna			
			Modern Fired Clay - Ceramic			
			Modern Glass			
			Modern Metal			
			Modern Synthetic			
			--			
			--			
			Historic Composite			
			Historic Composite			

* Discarded

Appendix D

ARTIFACT INVENTORY

APPENDIX D ARTIFACT INVENTORY

Columbia University, Trench A, Context 1	Catalog # 19
Modern	
10 Glass, Curved, bottle fragment, brown, approximation due to presence of hazardous material	Row # 3
50 Glass, Curved, bottle fragment, clear/uncolored, approximation due to presence of hazardous material	Row # 2
25 Glass, Curved, bottle fragment, green, approximation due to presence of hazardous material	Row # 1
75 Synthetic, Plastic, drug paraphernalia fragment, approximation due to presence of hazardous material	Row # 4
<i>Total Artifacts in Context 1: 160</i>	
Columbia University, Trench A, Context 2	Catalog # 20
Modern	
1 Fauna, Bone - remains, fowl femur whole	Row # 1
15 Glass, Curved, bottle body fragment, green	Row # 10
1 Glass, Curved, bottle base fragment, stippled, clear/uncolored	Row # 5
1 Glass, Curved, bottle base fragment, clear/uncolored	Row # 6
17 Glass, Curved, bottle body fragment, clear/uncolored	Row # 4
1 Glass, Curved, bottle body fragment, red and white decal, clear/uncolored	Row # 7
1 Glass, Curved, bottle body fragment, brown	Row # 8
1 Glass, Curved, bottle body fragment, white decal, green	Row # 9
1 Glass, Curved, indeterminate type fragment, amber, melted	Row # 13
1 Metal, Aluminum, can tab fragment	Row # 15
2 Metal, Aluminum, foil fragment	Row # 14
1 Metal, Ferrous metal, bottle cap whole, corroded	Row # 16
1 Metal, Ferrous metal, cap/lid fragment, threaded, corroded	Row # 20
1 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 18
1 Metal, Ferrous metal, safety pin fragment, corroded	Row # 19
1 Synthetic, Plastic, button whole, brown, four eye sew through	Row # 22
2 Synthetic, Plastic, drug paraphernalia fragment	Row # 23
Indeterminate	
1 Flora, Nut, acorn whole	Row # 3
1 Stone, Chert, pebble whole	Row # 21
Historic	
1 Fired Clay - Non-ceramic, Earthenware, Brick, structural fragment	Row # 2
4 Glass, Curved, bottle body fragment, citron	Row # 12
1 Glass, Curved, bottle body fragment, olive green	Row # 11
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 17
<i>Total Artifacts in Context 2: 58</i>	
Columbia University, Trench A, Context 3	Catalog # 21
Modern	
25 Glass, Curved, bottle body fragment, green	Row # 3
25 Glass, Curved, bottle body fragment, clear/uncolored	Row # 2
25 Synthetic, Plastic, drug paraphernalia fragment, approximation due to the presence of hazardous material	Row # 4
Historic	
2 Fauna, Shell - remains, oyster fragment	Row # 1
<i>Total Artifacts in Context 3: 77</i>	

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

Columbia University, Trench A, Context 4	Catalog # 26
Modern	
1 Composite, Ferrous metal, battery whole, corroded	Row # 1
1 Composite, Metal and plastic, spray can fragment	Row # 1
1 Fired Clay - Ceramic, Refined Earthenware, Whiteware, hollow ware body fragment, light green wash	Row # 2
25 Glass, Curved, bottle fragment, clear/uncolored	Row # 12
25 Glass, Curved, bottle fragment, green	Row # 13
3 Glass, Curved, bottle body fragment, clear/uncolored	Row # 1
25 Glass, Curved, bottle fragment, brown	Row # 14
5 Metal, Ferrous metal, can fragment, corroded	Row # 2
3 Metal, Ferrous metal, spray can fragment, corroded	Row # 2
25 Synthetic, Plastic, drug paraphernalia fragment	Row # 15
Indeterminate	
1 Stone, Sandstone, indeterminate type fragment, labeled as a stone tool, likely natural	Row # 1
Historic	
1 Fauna, Bone - artifact, button whole, resembles Hume Type 22	Row # 1
1 Fired Clay - Non-ceramic, Earthenware, Brick, structural fragment	Row # 1
4 Glass, Curved, bottle base fragment, light aqua	Row # 3
5 Glass, Curved, bottle body fragment, light aqua	Row # 4
1 Glass, Curved, toy, marble whole, light blue	Row # 5
1 Glass, Curved, toy, marble whole, blue	Row # 6
1 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 9
2 Metal, Ferrous metal, nail fragment, corroded	Row # 7
1 Metal, Ferrous metal, washer whole, corroded	Row # 8
4 Mineral, Charcoal, waste material fragment, wrapped in aluminum foil	Row # 11
7 Mineral, Charcoal, waste material fragment	Row # 10
<i>Total Artifacts in Context 4: 143</i>	
Columbia University, Trench A, Context 5	Catalog # 29
Modern	
1 Glass, Curved, bottle body fragment, clear/uncolored	Row # 3
Historic	
4 Composite, Mortar, structural fragment	Row # 1
1 Fired Clay - Non-ceramic, Earthenware, Brick, structural fragment	Row # 2
1 Stone, Indeterminate, pebble whole, likely not prehistoric	Row # 4
<i>Total Artifacts in Context 5: 7</i>	
Columbia University, Trench A, Context 6	Catalog # 30
Modern	
2 Fauna, Bone - remains, indeterminate type fragment	Row # 1
Historic	
1 Metal, Ferrous metal, nail fragment, corroded	Row # 3
1 Metal, Ferrous metal, nail whole, cut, corroded	Row # 2
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 4
<i>Total Artifacts in Context 6: 5</i>	

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

Columbia University, Trench A, Context 7	Catalog # 31
Modern	
1 Glass, Curved, bottle body fragment, red and white decal, clear/uncolored	Row # 3
1 Glass, Curved, bottle body fragment, brown	Row # 4
1 Metal, Aluminum, can tab fragment	Row # 6
1 Synthetic, Plastic, wrapper fragment, blue and white, "day baldwin"	Row # 7
Historic	
1 Glass, Curved, bottle body fragment, clear/uncolored, patination	Row # 2
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 5
1 Stone, Indeterminate, toy, marble whole	Row # 1
<i>Total Artifacts in Context 7: 7</i>	
Columbia University, Trench A, Context 8	Catalog # 32
Modern	
4 Glass, Curved, bottle body fragment, clear/uncolored	Row # 1
Historic	
5 Glass, Curved, bottle body fragment, citron	Row # 4
3 Glass, Curved, bottle body fragment, embossed, citron	Row # 2
1 Glass, Curved, bottle body fragment, embossed, citron, "...D...?"	Row # 3
4 Glass, Curved, bottle body fragment, painted, light aqua	Row # 2
2 Glass, Curved, bottle body fragment, embossed, citron, "...ROMA...CHNA..."	Row # 1
3 Metal, Ferrous metal, bolt whole, corroded	Row # 4
100 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 3
6 Metal, Ferrous metal, nail whole, cut, corroded	Row # 5
1 Metal, Ferrous metal, nut whole, corroded	Row # 6
<i>Total Artifacts in Context 8: 129</i>	
Columbia University, Trench A, Context 9	Catalog # 34
Modern	
1 Glass, Curved, bottle body fragment, green	Row # 1
Historic	
1 Glass, Curved, bottle body fragment, citron	Row # 2
50 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 5
1 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 4
2 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 3
<i>Total Artifacts in Context 9: 55</i>	
Columbia University, Trench A, Context 10	Catalog # 35
Modern	
1 Fauna, Bone - remains, rodent tibia and fibula whole	Row # 1
Historic	
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 2
<i>Total Artifacts in Context 10: 2</i>	
Columbia University, Trench A, Context 11	Catalog # 36
Modern	
2 Fauna, Shell - remains, snail fragment	Row # 2

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

1	Glass, Curved, bottle body fragment, embossed, brown	Row #	6
4	Glass, Curved, bottle body fragment, clear/uncolored	Row #	3
1	Glass, Curved, bottle finish fragment, threaded, green	Row #	5
1	Glass, Curved, indeterminate type fragment, clear/uncolored, melted	Row #	1
Historic			
1	Composite, Mortar, structural fragment	Row #	1
1	Glass, Curved, bottle body fragment, light aqua	Row #	4
1	Metal, Ferrous metal, nail fragment, cut, corroded	Row #	7
1	Stone, Quartzite, indeterminate type fragment	Row #	1
<i>Total Artifacts in Context 11: 13</i>			
Columbia University, Trench A, Context 12			Catalog # 44
Modern			
1	Glass, Curved, bottle body fragment, clear/uncolored	Row #	1
Historic			
7	Composite, Mortar, structural fragment	Row #	1
1	Glass, Curved, bottle body fragment, citron	Row #	1
1	Glass, Curved, bottle 70-80% complete, embossed, olive green, patination, "R.ROBINSON 376 BOWERY,N.Y."	Row #	1
1	Glass, Curved, toy, marble whole, clear/uncolored	Row #	1
1	Metal, Ferrous metal, nail fragment, corroded	Row #	1
1	Metal, Ferrous metal, nail fragment, corroded	Row #	1
1	Metal, Ferrous metal, nail fragment, corroded	Row #	1
1	Metal, Ferrous metal, nail fragment, corroded	Row #	1
4	Mineral, Charcoal, waste material fragment	Row #	1
<i>Total Artifacts in Context 12: 19</i>			
Columbia University, Trench A, Context 13			Catalog # 49
Modern			
1	Glass, Curved, bottle body fragment, green	Row #	4
2	Glass, Curved, bottle body fragment, clear/uncolored	Row #	3
2	Glass, Curved, bottle body fragment, brown	Row #	1
Historic			
1	Glass, Curved, bottle body fragment, olive green, patination	Row #	1
10	Glass, Curved, bottle body and base, embossed, citron, patination, "...OLPHOWOLFE'S...ATIC...PPS"	Row #	2
1	Glass, Curved, bottle body fragment, clear/uncolored, patination	Row #	1
1	Glass, Curved, bottle body fragment, citron	Row #	2
1	Glass, Curved, bottle body fragment, clear/uncolored, patination	Row #	1
1	Metal, Ferrous metal, nail fragment, cut, corroded	Row #	1
1	Metal, Ferrous metal, nail fragment, corroded	Row #	1
<i>Total Artifacts in Context 13: 21</i>			
Columbia University, Trench A, Context 15			Catalog # 56
Historic			
1	Glass, Curved, bottle body fragment, olive green, patination	Row #	1
1	Metal, Ferrous metal, nail fragment, cut, corroded	Row #	1
<i>Total Artifacts in Context 15: 2</i>			

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

Columbia University, Trench A, Context 16	Catalog # 57
Historic	
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 1
<i>Total Artifacts in Context 16: 1</i>	
Columbia University, Trench A, Context 17	Catalog # 58
Modern	
1 Fauna, Shell - remains, snail fragment	Row # 1
Historic	
1 Glass, Curved, bottle body fragment, olive green, patination	Row # 1
1 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 1
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 1
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 1
<i>Total Artifacts in Context 17: 5</i>	
Columbia University, Trench A, Context 18	Catalog # 73
Modern	
2 Fauna, Bone - remains, beak fragment	Row # 1
1 Fauna, Bone - remains, fowl skull fragment	Row # 1
1 Fauna, Bone - remains, indeterminate type fragment, burned	Row # 1
11 Fauna, Shell - remains, snail fragment	Row # 2
Indeterminate	
2 Stone, Micaceous Schist, structural fragment	Row # 6
2 Stone, Quartz, indeterminate type fragment	Row # 7
1 Stone, Quartzite, indeterminate type fragment	Row # 5
Historic	
2 Composite, Mortar, structural fragment	Row # 1
1 Composite, Mortar, structural fragment	Row # 1
2 Fauna, Wood, indeterminate type fragment	Row # 1
7 Flora, Wood, indeterminate type fragment	Row # 1
1 Flora, Wood, indeterminate type fragment	Row # 1
3 Flora, Wood, indeterminate type fragment	Row # 1
12 Flora, Wood, indeterminate type fragment	Row # 3
4 Flora, Wood, indeterminate type fragment	Row # 1
1 Glass, Curved, bottle neck fragment, olive green, patination	Row # 1
2 Glass, Curved, bottle body fragment, olive green, patination	Row # 1
4 Glass, Curved, bottle body fragment, olive green, patination	Row # 4
1 Metal, Ferrous metal, nail fragment, corroded	Row # 1
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 1
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 1
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 1
1 Mineral, Charcoal, waste material fragment	Row # 1
<i>Total Artifacts in Context 18: 64</i>	
Columbia University, Trench A, Context 19	Catalog # 82
Modern	
1 Fauna, Bone - remains, indeterminate type fragment	Row # 1

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

1 Fauna, Shell - remains, snail fragment	Row #	1
Historic		
1 Composite, soil sample	Row #	1
1 Composite, soil sample	Row #	1
1 Composite, soil sample	Row #	1
1 Composite, soil sample	Row #	1
1 Composite, soil sample	Row #	1
1 Flora, Wood, indeterminate type fragment	Row #	1
1 Flora, Wood, indeterminate type fragment	Row #	1
1 Glass, Curved, bottle body fragment, olive green, patination	Row #	2
<i>Total Artifacts in Context 19: 10</i>		
Columbia University, Trench A, Context 20	Catalog #	89
Modern		
1 Fauna, Bone - remains, indeterminate type fragment	Row #	2
1 Fauna, Shell - remains, snail fragment	Row #	3
Historic		
5 Composite, Mortar, structural fragment	Row #	1
1 Composite, Mortar, structural fragment	Row #	1
1 Flora, Wood, indeterminate type fragment	Row #	1
1 Flora, Wood, indeterminate type fragment	Row #	4
1 Metal, Ferrous metal, nail fragment, corroded	Row #	1
<i>Total Artifacts in Context 20: 11</i>		
Columbia University, Trench A, Context 21	Catalog #	95
Historic		
1 Composite, Mortar, structural fragment	Row #	1
1 Composite, Mortar, structural fragment	Row #	1
1 Composite, Mortar and plaster, structural fragment	Row #	1
1 Metal, Ferrous metal, nail fragment, corroded	Row #	1
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row #	1
1 Metal, Ferrous metal, nail fragment, corroded	Row #	1
1 Metal, Ferrous metal, nail fragment, corroded	Row #	1
1 Metal, Ferrous metal, nail fragment, corroded	Row #	1
<i>Total Artifacts in Context 21: 8</i>		
Columbia University, Trench A, Context 22	Catalog #	102
Historic		
2 Metal, Ferrous metal, indeterminate type fragment, corroded	Row #	1
3 Metal, Ferrous metal, indeterminate type fragment, corroded	Row #	1
1 Metal, Ferrous metal, nail fragment, corroded	Row #	1
<i>Total Artifacts in Context 22: 6</i>		
<i>Total Artifacts in Trench A : 803</i>		

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

Columbia University, Trench B, Context 101	Catalog # 106
Modern	
50 Glass, Curved, bottle body fragment, clear/uncolored, approximation due to presence of hazardous material	Row # 1
50 Glass, Curved, bottle body fragment, green, approximation due to presence of hazardous material	Row # 2
50 Synthetic, Plastic, drug paraphernalia fragment, approximation due to presence of hazardous material	Row # 3
<i>Total Artifacts in Context 101: 150</i>	
Columbia University, Trench B, Context 102	Catalog # 107
Historic	
1 Composite, soil sample	Row # 1
<i>Total Artifacts in Context 102: 1</i>	
Columbia University, Trench B, Context 103	Catalog # 108
Modern	
10 Glass, Curved, bottle body fragment, green	Row # 11
2 Glass, Curved, bottle base fragment, knurled, clear/uncolored	Row # 6
1 Glass, Curved, bottle body fragment, knurled, green	Row # 12
1 Glass, Curved, bottle body fragment, brown	Row # 10
1 Glass, Curved, bottle base fragment, knurled, brown	Row # 9
2 Glass, Curved, bottle body fragment, red decal, green	Row # 8
1 Glass, Curved, bottle body fragment, clear/uncolored, melted	Row # 7
1 Glass, Curved, bottle body fragment, stippled, clear/uncolored	Row # 4
2 Glass, Curved, bottle finish fragment, threaded, clear/uncolored	Row # 3
13 Glass, Curved, bottle body fragment, clear/uncolored	Row # 2
1 Glass, Curved, bottle base fragment, clear/uncolored	Row # 1
1 Glass, Curved, vial body fragment, clear/uncolored	Row # 5
2 Metal, Ferrous metal, nail whole, cut, corroded	Row # 13
1 Synthetic, Plastic, baggie whole, pink, drug paraphernalia	Row # 15
1 Synthetic, Plastic, drug paraphernalia fragment, white	Row # 16
1 Synthetic, Plastic, indeterminate type fragment, clear/uncolored	Row # 18
1 Synthetic, Plastic, lid whole, silver, drug paraphernalia	Row # 17
1 Synthetic, Plastic, lid whole, red, drug paraphernalia	Row # 14
<i>Total Artifacts in Context 103: 43</i>	
Columbia University, Trench B, Context 104	Catalog # 109
Historic	
1 Composite, Mortar, structural fragment	Row # 1
1 Glass, Curved, bottle body fragment, clear/uncolored	Row # 2
1 Metal, Ferrous metal, nail fragment, corroded	Row # 3
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 1
1 Stone, Quartzite, structural fragment	Row # 4
<i>Total Artifacts in Context 104: 5</i>	
Columbia University, Trench B, Context 105	Catalog # 111
Modern	
1 Glass, Curved, bottle body fragment, brown	Row # 2
1 Metal, Aluminum, cap/lid whole	Row # 3

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

Indeterminate			
7	Mineral, Mica, indeterminate type fragment	Row #	4
Historic			
2	Composite, Mortar, structural fragment	Row #	1
1	Glass, Curved, bottle body fragment, light aqua	Row #	1
5	Stone, Micaceous Schist, structural fragment	Row #	2
16	Stone, Quartzite, structural fragment	Row #	3
<i>Total Artifacts in Context 105: 33</i>			
Columbia University, Trench B, Context 106		Catalog #	113
Modern			
1	Fauna, Shell - remains, snail fragment	Row #	1
Historic			
14	Stone, Quartzite, structural fragment	Row #	1
<i>Total Artifacts in Context 106: 15</i>			
Columbia University, Trench B, Context 107		Catalog #	116
Historic			
1	Glass, Curved, indeterminate type fragment, pink, possible marble	Row #	1
1	Stone, Quartzite, structural fragment	Row #	1
<i>Total Artifacts in Context 107: 2</i>			
Columbia University, Trench B, Context 108		Catalog #	118
Modern			
1	Glass, Curved, bottle base fragment, stippled, green	Row #	2
Historic			
3	Composite, Mortar, structural fragment	Row #	1
1	Composite, Mortar, structural fragment, glazed, green	Row #	1
<i>Total Artifacts in Context 108: 5</i>			
Columbia University, Trench B, Context 109		Catalog #	120
Historic			
1	Composite, Mortar, structural fragment	Row #	1
<i>Total Artifacts in Context 109: 1</i>			
Columbia University, Trench B, Context 111		Catalog #	121
Historic			
1	Fired Clay - Ceramic, Refined Earthenware, Pearlware, hollow ware body fragment, undecorated	Row #	1
<i>Total Artifacts in Context 111: 1</i>			
Columbia University, Trench B, Context 113		Catalog #	122
Modern			
1	Glass, Curved, bottle body fragment, clear/uncolored	Row #	1
<i>Total Artifacts in Context 113: 1</i>			
<i>Total Artifacts in Trench B : 257</i>			

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

Columbia University, General Provenience, Trench A	Catalog #	104
Historic		
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row #	1
<i>Total Artifacts in Surface Collection: 1</i>		
<i>Total Artifacts in General Provenience Trench A : 1</i>		
<hr/>		
Columbia University, General Provenience, Trench B	Catalog #	123
Historic		
1 Metal, Ferrous metal, nail fragment, corroded	Row #	1
<i>Total Artifacts in Surface Collection: 1</i>		
Columbia University, General Provenience, Trench B, Context 1	Catalog #	105
Indeterminate		
1 Stone, Chert, indeterminate type whole, labeled as possibly prehistoric, likely natural	Row #	1
<i>Total Artifacts in Context 1: 1</i>		
<i>Total Artifacts in General Provenience Trench B : 2</i>		
<hr/>		
Columbia University, Spoil Heap, Trench B	Catalog #	124
Historic		
1 Metal, Ferrous metal, nail fragment, corroded	Row #	1
<i>Total Artifacts in Surface Collection: 1</i>		
<i>Total Artifacts in Spoil Heap Trench B : 1</i>		
<hr/>		
Hunter Research, Excavation Unit 1, Sample	Catalog #	128
1 Composite, Mortar, structural sample, mortar sample #6	Row #	1
1 Composite, Mortar, structural sample, mortar sample #4	Row #	1
<i>Total Artifacts in Surface Collection: 2</i>		
Hunter Research, Inc., Excavation Unit 1, Context 1	Catalog #	1
Modern		
1 Fauna, Bone - remains, indeterminate type fragment	Row #	38
1 Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row #	27
1 Glass, Curved, bottle body fragment, teal decal, clear/uncolored	Row #	25
2 Glass, Curved, bottle body fragment, red and white decal, clear/uncolored	Row #	24
6 Glass, Curved, bottle body fragment, blue and white decal, clear/uncolored	Row #	23
1 Glass, Curved, bottle base fragment, green	Row #	16
1 Glass, Curved, bottle finish fragment, threaded, green	Row #	13
15 Glass, Curved, bottle finish fragment, threaded, clear/uncolored	Row #	28
6 Glass, Curved, bottle body fragment, green	Row #	11
2 Glass, Curved, bottle body fragment, embossed, clear/uncolored	Row #	33
2 Glass, Curved, bottle body fragment, amber	Row #	9
1 Glass, Curved, bottle finish fragment, crown finish, brown	Row #	8
1 Glass, Curved, bottle finish fragment, threaded, brown	Row #	7

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

4	Glass, Curved, bottle body fragment, brown	Row #	6
1	Glass, Curved, bottle base fragment, green	Row #	12
4	Glass, Curved, bottle base fragment, clear/uncolored	Row #	30
19	Glass, Curved, bottle body fragment, clear/uncolored	Row #	34
12	Glass, Curved, bottle base fragment, knurled, clear/uncolored	Row #	32
1	Glass, Curved, bottle finish fragment, crown finish, clear/uncolored	Row #	29
5	Glass, Curved, bottle base fragment, rilling, brown	Row #	5
1	Glass, Curved, bottle base fragment, knurled, light aqua	Row #	31
3	Glass, Curved, bottle body fragment, stippled, clear/uncolored	Row #	35
1	Glass, Curved, indeterminate type fragment, green, melted	Row #	14
1	Glass, Curved, indeterminate type body fragment, clear/uncolored, melted	Row #	26
2	Glass, Flat, window fragment, clear/uncolored	Row #	36
1	Metal, Aluminum, can tab whole	Row #	46
1	Metal, Aluminum, cap/lid whole, "OLDE ENGLISH 800"	Row #	44
1	Metal, Aluminum, cap/lid whole	Row #	45
1	Metal, Aluminum, clasp whole	Row #	47
1	Metal, Copper alloy, Lincoln cent, coin whole, corroded, 2001 - 2001	Row #	48
1	Metal, Copper alloy, Lincoln cent, coin whole, corroded, 1983 - 1983	Row #	49
1	Metal, Copper alloy, Lincoln cent, coin whole, corroded	Row #	50
1	Metal, Copper alloy, indeterminate type fragment, thin tube with hole at end	Row #	52
1	Metal, Copper alloy, pipe joint whole	Row #	51
4	Metal, Ferrous metal, cap/lid fragment, corroded	Row #	53
1	Metal, Ferrous metal, indeterminate type fragment, corroded	Row #	55
1	Metal, Ferrous metal, indeterminate type fragment, corroded, tube with slots	Row #	54
1	Metal, Pewter, badge whole, corroded	Row #	56
1	Metal, Steel, screw whole	Row #	57
1	Synthetic, Plastic, button whole, white, four eye sew through	Row #	60
1	Synthetic, Plastic, button whole, white	Row #	66
1	Synthetic, Plastic, comb fragment, black	Row #	62
25	Synthetic, Plastic, drug paraphernalia fragment, approximation due to presence of hazardous material	Row #	71
1	Synthetic, Plastic, electrical tape fragment, black	Row #	58
1	Synthetic, Plastic, filament fragment, blue	Row #	63
1	Synthetic, Plastic, indeterminate type fragment, black	Row #	61
1	Synthetic, Plastic, pen fragment, white and blue	Row #	68
1	Synthetic, Plastic, sticker whole, pink, blue, gold	Row #	65
2	Synthetic, Plastic, wrapper fragment, pink and yellow	Row #	59
1	Synthetic, Plastic, wrapper fragment, silver	Row #	64
2	Synthetic, Plastic, zip tie whole, black	Row #	67
Historic			
1	Composite, Mortar, structural fragment	Row #	70
1	Fauna, Bone - remains, large mammal fragment, butchered	Row #	1
6	Fauna, Shell - remains, oyster fragment	Row #	2
1	Fired Clay - Ceramic, Stoneware, large hollow ware base fragment, internal Albany slip, external white slip	Row #	3
1	Flora, Wood, indeterminate type fragment	Row #	4
1	Glass, Curved, bottle body fragment, olive green, patination	Row #	22
1	Glass, Curved, bottle body fragment, brown, patination	Row #	10
1	Glass, Curved, bottle finish, blob finish, aqua	Row #	20

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

1	Glass, Curved, bottle base fragment, light aqua	Row #	19
2	Glass, Curved, bottle body fragment, olive green	Row #	21
1	Glass, Curved, bottle finish fragment, light olive green	Row #	17
1	Glass, Curved, bottle body fragment, light olive green	Row #	15
1	Glass, Curved, button whole, white, four eye sew through, sunken panel	Row #	37
1	Glass, Curved, toy, marble >90% complete, aqua	Row #	18
1	Metal, Ferrous metal, bolt whole, corroded	Row #	41
18	Metal, Ferrous metal, nail fragment, cut, corroded	Row #	38
22	Metal, Ferrous metal, nail fragment, cut, corroded, point missing	Row #	40
16	Metal, Ferrous metal, nail whole, cut, corroded	Row #	42
3	Metal, Ferrous metal, nail whole, cut, corroded, bent	Row #	43
7	Metal, Ferrous metal, nail whole, wire, corroded	Row #	39
2	Stone, Micaceous Schist, indeterminate type fragment	Row #	69
<i>Total Artifacts in Context 1: 238</i>			
Hunter Research, Inc., Excavation Unit 1, Context 2			Catalog # 2
Modern			
1	Fauna, Bone - remains, indeterminate type fragment	Row #	1
Historic			
20	Metal, Ferrous metal, indeterminate type fragment, corroded	Row #	3
3	Metal, Ferrous metal, nail fragment, cut, corroded	Row #	2
<i>Total Artifacts in Context 2: 24</i>			
Hunter Research, Inc., Excavation Unit 1, Context 4			Catalog # 3
Modern			
1	Composite, Glass and metal, bottle finish fragment, threaded, green, aluminum ring around neck	Row #	7
4	Glass, Curved, bottle base fragment, green	Row #	9
1	Glass, Curved, bottle finish fragment, threaded, light aqua	Row #	10
2	Glass, Curved, bottle base fragment, knurled, brown	Row #	15
1	Glass, Curved, bottle body fragment, brown	Row #	16
1	Glass, Curved, bottle finish fragment, crown finish, brown	Row #	17
1	Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row #	18
1	Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row #	19
5	Glass, Curved, bottle finish fragment, threaded, clear/uncolored	Row #	20
4	Glass, Curved, bottle base fragment, knurled, clear/uncolored	Row #	21
1	Glass, Curved, bottle base fragment, clear/uncolored	Row #	22
11	Glass, Curved, bottle body fragment, clear/uncolored	Row #	23
1	Glass, Curved, bottle finish fragment, crown finish, green	Row #	6
8	Glass, Curved, bottle body fragment, green	Row #	8
1	Metal, Aluminum, bottle cap fragment, black	Row #	36
1	Metal, Aluminum, can tab fragment	Row #	34
1	Metal, Aluminum, can tab whole	Row #	32
1	Metal, Aluminum, cap/lid whole	Row #	35
1	Metal, Aluminum, cap/lid whole, threaded, "Budwesier"	Row #	31
2	Metal, Aluminum, foil fragment	Row #	33
1	Metal, Aluminum, pencil ferrule whole	Row #	41
2	Metal, Copper alloy, Lincoln cent, coin fragment, corroded	Row #	38

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

1	Metal, Copper alloy, Lincoln cent, coin fragment, corroded, 1994 - 1994	Row #	37
1	Metal, Ferrous metal, cap/lid whole, corroded	Row #	39
1	Metal, Steel, indeterminate type whole	Row #	40
1	Synthetic, Plastic, cup fragment, white	Row #	46
25	Synthetic, Plastic, drug paraphernalia fragment, approximation due to presence of hazardous material	Row #	54
1	Synthetic, Plastic, film canister whole, black	Row #	53
1	Synthetic, Plastic, indeterminate type fragment, black	Row #	50
1	Synthetic, Plastic, indeterminate type fragment, blue	Row #	49
1	Synthetic, Plastic, indeterminate type fragment, white	Row #	48
1	Synthetic, Plastic, indeterminate type fragment, brown	Row #	47
1	Synthetic, Plastic, indeterminate type fragment, green	Row #	52
1	Synthetic, Plastic, indeterminate type fragment, tan	Row #	45
1	Synthetic, Plastic, indeterminate type fragment, brown	Row #	51
2	Synthetic, Plastic, wrapper fragment, pink and yellow	Row #	44
Indeterminate			
1	Flora, Wood, indeterminate type fragment, 18g, possibly mulch	Row #	5
Historic			
3	Composite, Mortar, structural fragment	Row #	1
1	Fauna, Shell - remains, oyster fragment	Row #	2
1	Fired Clay - Ceramic, Refined Earthenware, Indeterminate type, indeterminate type body fragment, both surfaces missing	Row #	3
1	Fired Clay - Ceramic, Refined Earthenware, Ironstone, hollow ware rim fragment, both surfaces light blue wash	Row #	4
2	Glass, Curved, bottle body fragment, olive green, patination	Row #	13
2	Glass, Curved, bottle body fragment, embossed, light olive green	Row #	14
1	Glass, Curved, bottle base fragment, aqua, patination	Row #	11
1	Glass, Curved, bottle body fragment, light aqua	Row #	12
3	Glass, Flat, window fragment, light aqua	Row #	24
1	Metal, Ferrous metal, hinge fragment, corroded	Row #	27
3	Metal, Ferrous metal, indeterminate type fragment, corroded, rolled up	Row #	28
60	Metal, Ferrous metal, indeterminate type fragment, corroded	Row #	25
26	Metal, Ferrous metal, nail fragment, cut, corroded, point missing	Row #	26
6	Metal, Ferrous metal, nail whole, cut, corroded	Row #	30
9	Metal, Ferrous metal, nail fragment, cut, corroded	Row #	29
1	Mineral, Charcoal, waste material fragment	Row #	42
1	Stone, Micaceous Schist, indeterminate type fragment	Row #	43

Total Artifacts in Context 4: 214

Hunter Research, Inc., Excavation Unit 1, Context 5

Catalog # 4

Modern

1	Glass, Curved, bottle body fragment, brown	Row #	2
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Historic

1	Glass, Curved, bottle body fragment, olive green, patination	Row #	3
2	Glass, Curved, bottle finish fragment, champagne finish, brown, patination	Row #	1
14	Metal, Ferrous metal, nail fragment, cut, corroded	Row #	5
5	Metal, Ferrous metal, nail whole, cut, corroded	Row #	4

Total Artifacts in Context 5: 23

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

Hunter Research, Inc., Excavation Unit 1, Context 6	Catalog # 5
Modern	
1 Fauna, Bone - remains, fowl carpometacarpus whole	Row # 6
1 Fauna, Bone - remains, fowl femur fragment	Row # 13
1 Fauna, Bone - remains, fowl humerus fragment	Row # 4
1 Fauna, Bone - remains, fowl mandible whole	Row # 2
1 Fauna, Bone - remains, fowl radius whole	Row # 3
1 Fauna, Bone - remains, fowl skull fragment	Row # 11
1 Fauna, Bone - remains, fowl tarsometatarsus whole	Row # 5
1 Fauna, Bone - remains, fowl tibiotarsus fragment	Row # 9
1 Fauna, Bone - remains, fowl ulna whole	Row # 7
1 Fauna, Bone - remains, fowl vertebra whole	Row # 8
1 Fauna, Bone - remains, indeterminate type whole	Row # 10
1 Fauna, Shell - remains, indeterminate type fragment, possibly whelk or conch	Row # 14
1 Glass, Curved, bottle body fragment, green	Row # 19
1 Synthetic, Plastic, indeterminate type fragment, white	Row # 32
Indeterminate	
1 Flora, Wood, indeterminate type fragment, 20g, possibly mulch	Row # 15
Historic	
13 Composite, Mortar, structural fragment	Row # 1
1 Fauna, Bone - remains, large mammal long bone fragment, possibly butchered	Row # 12
2 Fired Clay - Non-ceramic, White clay, Smoking pipe, stem fragment, D 5/64"	Row # 16
11 Glass, Curved, bottle body fragment, olive green, patination	Row # 18
1 Glass, Curved, bottle kick-up fragment, olive green, patination	Row # 17
5 Metal, Ferrous metal, indeterminate type fragment, corroded, strips	Row # 20
1 Metal, Ferrous metal, indeterminate type fragment, corroded, pierced	Row # 22
11 Metal, Ferrous metal, indeterminate type fragment, corroded, chunks	Row # 21
9 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 26
16 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 27
10 Metal, Ferrous metal, nail fragment, corroded	Row # 28
2 Metal, Ferrous metal, nail whole, cut, corroded, bent	Row # 25
11 Metal, Ferrous metal, nail whole, cut, corroded	Row # 24
1 Metal, Ferrous metal, nail whole, possibly wrought, corroded	Row # 29
4 Metal, Ferrous metal, nail whole, cut, corroded	Row # 23
6 Mineral, Charcoal, waste material fragment	Row # 30
1 Stone, Micaceous Schist, indeterminate type fragment	Row # 31
<i>Total Artifacts in Context 6: 120</i>	
Hunter Research, Inc., Excavation Unit 1, Context 104	Catalog # 129
Historic	
1 Composite, Mortar, structural sample, mortar sample #5	Row # 1
<i>Total Artifacts in Context 104: 1</i>	
<i>Total Artifacts in Excavation Unit 1 : 622</i>	

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

Hunter Research, Inc., Excavation Unit 2, 5 & 7	Catalog #	9
Modern		
1 Fauna, Bone - remains, fowl femur fragment	Row #	2
1 Fired Clay - Ceramic, Refined Earthenware, Whiteware, cup/mug rim ragment, light green wash	Row #	5
21 Glass, Curved, bottle body fragment, green	Row #	18
5 Glass, Curved, bottle body fragment, brown	Row #	13
1 Glass, Curved, bottle base fragment, brown	Row #	14
9 Glass, Curved, bottle body fragment, red	Row #	15
4 Glass, Curved, bottle body fragment, white decal, green	Row #	16
1 Glass, Curved, bottle finish fragment, crown finish, clear/uncolored	Row #	21
5 Glass, Curved, bottle finish fragment, threaded, clear/uncolored	Row #	20
7 Glass, Curved, bottle body fragment, red and white decal, clear/uncolored	Row #	19
1 Glass, Curved, bottle body fragment, decal, light olive green	Row #	12
2 Glass, Curved, bottle base fragment, green	Row #	17
2 Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row #	25
103 Glass, Curved, bottle body fragment, clear/uncolored	Row #	23
10 Glass, Curved, bottle base fragment, knurled/stippled, clear/uncolored	Row #	22
6 Glass, Curved, bottle body fragment, stippled, clear/uncolored	Row #	24
1 Glass, Curved, soda bottle base, embossed, greenish aqua, "NEWARK N.J. BOTTLE TRADEMARK"	Row #	10
2 Glass, Curved, soda bottle body fragment, greenish aqua	Row #	11
1 Glass, Curved, soda bottle finish, greenish aqua	Row #	8
15 Glass, Curved, soda bottle body fragment, molded design, greenish aqua	Row #	9
1 Glass, Flat, window fragment, clear/uncolored	Row #	26
6 Metal, Aluminum, foil fragment	Row #	27
1 Metal, Ferrous metal, bottle cap whole, corroded	Row #	29
1 Metal, Ferrous metal, wire fragment, corroded	Row #	30
1 Metal, Steel, indeterminate type fragment	Row #	31
1 Metal, Steel, toy gun magazine fragment, yellow, corroded	Row #	32
1 Synthetic, Plastic, indeterminate type fragment, white	Row #	34
1 Synthetic, Plastic, tape fragment, black	Row #	35
Indeterminate		
1 Flora, Wood, indeterminate type fragment	Row #	7
1 Stone, Argillite, indeterminate type fragment	Row #	33
Historic		
1 Composite, Mortar, structural fragment	Row #	1
1 Fired Clay - Ceramic, Earthenware, Buff bodied, hollow ware body fragment, both surfaces missing	Row #	3
1 Fired Clay - Ceramic, Refined Earthenware, Whiteware, hollow ware rim fragment, interior sponged decoration, brown	Row #	4
1 Fired Clay - Non-ceramic, Earthenware, Brick, structural fragment, embossed	Row #	6
5 Metal, Ferrous metal, nail fragment, corroded	Row #	28
<i>Total Artifacts in Suface Collection: 222</i>		
Hunter Research, Inc., Excavation Unit 2, Context 1	Catalog #	6
Prehistoric		
1 Stone, Jasper, thermally-altered flake fragment, burned	Row #	2
Modern		
3 Composite, Concrete, structural fragment	Row #	3
1 Composite, Metal and rubber, wire fragment	Row #	4

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

2	Glass, Curved, bottle base fragment, stippled, brown	Row # 26
18	Glass, Curved, bottle body fragment, embossed, clear/uncolored	Row # 39
1	Glass, Curved, bottle body fragment, yellow decal, clear/uncolored	Row # 40
2	Glass, Curved, bottle finish fragment, clear/uncolored	Row # 38
11	Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row # 44
####	Glass, Curved, bottle body fragment, clear/uncolored	Row # 33
69	Glass, Curved, bottle body fragment, stippled, clear/uncolored	Row # 42
1	Glass, Curved, bottle body fragment, red decal, clear/uncolored	Row # 43
2	Glass, Curved, bottle body fragment, blue and white decal, clear/uncolored	Row # 41
1	Glass, Curved, bottle finish fragment, threaded, light aqua	Row # 18
6	Glass, Curved, bottle finish fragment, crown finish, clear/uncolored	Row # 35
27	Glass, Curved, bottle base fragment, knurled, clear/uncolored	Row # 34
1	Glass, Curved, bottle base fragment, knurled, brown	Row # 32
1	Glass, Curved, bottle finish fragment, crown finish, brown	Row # 31
1	Glass, Curved, bottle base fragment, brown	Row # 30
6	Glass, Curved, bottle body fragment, stippled, brown	Row # 29
8	Glass, Curved, bottle base fragment, clear/uncolored	Row # 37
2	Glass, Curved, bottle finish fragment, threaded, brown	Row # 27
14	Glass, Curved, bottle finish fragment, threaded, clear/uncolored	Row # 36
9	Glass, Curved, bottle body fragment, red	Row # 24
2	Glass, Curved, bottle base fragment, knurled, light aqua	Row # 19
1	Glass, Curved, bottle finish fragment, possible champagne finish, green	Row # 16
2	Glass, Curved, bottle finish fragment, crown finish, green	Row # 15
1	Glass, Curved, bottle body fragment, embossed, green	Row # 14
6	Glass, Curved, bottle body fragment, red decal, green	Row # 13
6	Glass, Curved, bottle base fragment, knurled, green	Row # 12
10	Glass, Curved, bottle body fragment, green	Row # 11
7	Glass, Curved, bottle finish fragment, threaded, green	Row # 10
169	Glass, Curved, bottle body fragment, brown	Row # 28
2	Glass, Curved, bottle body fragment, embossed, brown	Row # 25
682	Glass, Curved, bottle body fragment, green	Row # 9
1	Metal, Aluminum, can tab fragment	Row # 60
1	Metal, Aluminum, cap/lid fragment	Row # 61
1	Metal, Copper alloy, coin whole, corroded, 1965	Row # 62
1	Metal, Copper alloy, coin whole, corroded, 1999	Row # 64
1	Metal, Copper alloy, coin whole, corroded, 2007	Row # 63
2	Metal, Ferrous metal, screw whole, corroded	Row # 54
1	Synthetic, Plastic, button whole, grey, four eye sew through	Row # 68
1	Synthetic, Plastic, drug paraphernalia fragment	Row # 70
1	Synthetic, Plastic, indeterminate type fragment, white	Row # 69
1	Synthetic, Plastic, indeterminate type fragment, pink	Row # 67
Indeterminate		
1	Mineral, Coal, waste material fragment	Row # 65
6	Mineral, Mica, indeterminate type fragment	Row # 66
1	Stone, Rhyolite, flake fragment, likely not prehistoric	Row # 1
Historic		
1	Fauna, Shell - remains, oyster fragment	Row # 5

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

1	Fired Clay - Ceramic, Refined Earthenware, Whiteware, cup/mug rim fragment, both surfaces light green wash	Row #	8
1	Fired Clay - Ceramic, Refined Earthenware, Whiteware, hollow ware body fragment, undecorated	Row #	6
1	Fired Clay - Non-ceramic, Earthenware, Brick, structural fragment	Row #	7
5	Glass, Curved, bottle body fragment, violet	Row #	23
5	Glass, Curved, bottle body fragment, olive green, patination	Row #	22
1	Glass, Curved, bottle body fragment, dark aqua	Row #	21
1	Glass, Curved, bottle body fragment, embossed, aqua	Row #	20
86	Glass, Curved, bottle body fragment, light aqua	Row #	17
1	Metal, Copper alloy, cartridge case whole, corroded, Maker's Mark, "W" Western Cartridge Company	Row #	46
1	Metal, Copper alloy, cartridge case whole, corroded	Row #	45
1	Metal, Copper alloy, grommet whole, corroded	Row #	47
1	Metal, Copper alloy, nail whole, corroded	Row #	55
1	Metal, Ferrous metal, cartridge case fragment, corroded	Row #	58
1	Metal, Ferrous metal, finishing nail whole, wire, corroded	Row #	52
1	Metal, Ferrous metal, indeterminate type fragment, corroded	Row #	59
12	Metal, Ferrous metal, nail fragment, cut, corroded, point missing	Row #	49
1	Metal, Ferrous metal, nail whole, cut, corroded, string wrapped around head	Row #	53
1	Metal, Ferrous metal, nail whole, wire, corroded, string wrapped around head	Row #	51
7	Metal, Ferrous metal, nail whole, cut, corroded	Row #	48
9	Metal, Ferrous metal, nail fragment, cut, corroded, head missing	Row #	50
1	Metal, Ferrous metal, washer whole, corroded	Row #	57
1	Metal, Ferrous metal, wire fragment, corroded	Row #	56

Total Artifacts in Context 1: 2360

Hunter Research, Inc., Excavation Unit 2, Context 3

Catalog # 7

Modern

2	Glass, Curved, bottle base fragment, clear/uncolored	Row #	19
206	Glass, Curved, bottle body fragment, clear/uncolored	Row #	20
10	Glass, Curved, bottle body fragment, stippled, clear/uncolored	Row #	21
4	Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row #	22
4	Glass, Curved, bottle base fragment, knurled, clear/uncolored	Row #	17
33	Glass, Curved, bottle body fragment, brown	Row #	24
1	Glass, Curved, bottle finish fragment, brown	Row #	25
1	Glass, Curved, bottle body fragment, knurled, brown	Row #	26
1	Glass, Curved, bottle body fragment, light green decal, clear/uncolored	Row #	16
2	Glass, Curved, bottle finish fragment, clear/uncolored	Row #	15
3	Glass, Curved, bottle base fragment, knurled, green	Row #	3
203	Glass, Curved, bottle body fragment, green	Row #	9
2	Glass, Curved, bottle body fragment, stippled, green	Row #	8
1	Glass, Curved, bottle base fragment, green	Row #	7
2	Glass, Curved, bottle body fragment, red decal, green	Row #	6
1	Glass, Curved, bottle body fragment, embossed, green	Row #	5
7	Glass, Curved, bottle finish fragment, threaded, green	Row #	4
6	Glass, Curved, bottle finish fragment, threaded, clear/uncolored	Row #	18
1	Glass, Curved, bottle body fragment, red	Row #	12
1	Metal, Aluminum, can tab fragment	Row #	33
2	Metal, Copper, Lincoln cent, coin whole, corroded, 1959 - 2008	Row #	34

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

1 Metal, Copper, US dime, coin whole, 1991	Row # 35
1 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 31
1 Metal, Ferrous metal and steel, flint wheel for lighter fragment, corroded	Row # 32
1 Synthetic, Plastic, ring whole, black	Row # 36
1 Synthetic, Plastic, wrapper fragment, clear/uncolored	Row # 37
Historic	
2 Fauna, Shell - remains, oyster fragment	Row # 1
1 Flora, Wood, button whole, single eye	Row # 2
1 Glass, Curved, bottle body fragment, brown, patination	Row # 23
1 Glass, Curved, bottle body fragment, olive green	Row # 14
4 Glass, Curved, bottle body fragment, light aqua	Row # 10
1 Glass, Curved, bottle finish fragment, light aqua	Row # 11
2 Glass, Curved, bottle body fragment, violet	Row # 13
1 Metal, Ferrous metal, nail whole, cut, corroded, twisted	Row # 30
4 Metal, Ferrous metal, nail fragment, cut, corroded, head missing	Row # 28
7 Metal, Ferrous metal, nail fragment, cut, corroded, point missing	Row # 29
5 Metal, Ferrous metal, nail whole, cut, corroded	Row # 27
<i>Total Artifacts in Context 3: 527</i>	
Hunter Research, Inc., Excavation Unit 2, Context 4	Catalog # 8
Modern	
11 Glass, Curved, bottle body fragment, clear/uncolored	Row # 5
1 Glass, Curved, bottle body fragment, red	Row # 7
3 Glass, Curved, bottle body fragment, brown	Row # 6
9 Glass, Curved, bottle body fragment, green	Row # 4
Indeterminate	
6 Mineral, Mica, indeterminate type fragment	Row # 10
Historic	
1 Glass, Curved, bottle body fragment, aqua	Row # 3
1 Glass, Curved, bottle body fragment, olive green, patination	Row # 1
1 Glass, Curved, bottle base fragment, olive green	Row # 2
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 9
1 Metal, Ferrous metal, nail whole, cut, corroded	Row # 8
<i>Total Artifacts in Context 4: 35</i>	
Hunter Research, Inc., Excavation Unit 2, Context 7	Catalog # 10
Modern	
1 Glass, Curved, bottle body fragment, green	Row # 2
1 Glass, Curved, bottle body fragment, brown	Row # 4
1 Glass, Curved, bottle body fragment, clear/uncolored	Row # 3
Indeterminate	
3 Mineral, Mica, indeterminate type fragment	Row # 5
Historic	
1 Composite, Glass and concrete, structural fragment	Row # 1
<i>Total Artifacts in Context 7: 7</i>	

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

Hunter Research, Inc., Excavation Unit 2, Context 8	Catalog # 11
Historic	
10 Composite, Mortar, structural sample	Row # 3
1 Metal, Ferrous metal, nail fragment, cut, corroded	Row # 2
1 Metal, Ferrous metal, nail whole, cut, corroded	Row # 1
<i>Total Artifacts in Context 8: 12</i>	
Hunter Research, Inc., Excavation Unit 2, Context 9	Catalog # 12
Modern	
3 Flora, Nut shell, indeterminate type fragment	Row # 1
5 Glass, Curved, bottle body fragment, green	Row # 3
1 Glass, Curved, bottle body fragment, clear/uncolored	Row # 2
1 Synthetic, Plastic, wrapper fragment, clear/uncolored	Row # 5
1 Synthetic, Plastic, wrapper fragment, gold	Row # 4
1 Synthetic, Plastic, wrapper fragment, green	Row # 6
<i>Total Artifacts in Context 9: 12</i>	
Hunter Research, Inc., Excavation Unit 2, Context 10	Catalog # 13
Modern	
1 Fauna, Bone - remains, rodent mandible fragment	Row # 1
1 Glass, Curved, bottle body fragment, clear/uncolored	Row # 2
1 Glass, Curved, bottle body fragment, green	Row # 3
Historic	
1 Metal, Ferrous metal, nail whole, cut, corroded	Row # 4
<i>Total Artifacts in Context 10: 4</i>	
Hunter Research, Inc., Excavation Unit 2, Context 11	Catalog # 14
Modern	
12 Glass, Curved, bottle body fragment, clear/uncolored	Row # 1
1 Glass, Curved, bottle base fragment, clear/uncolored	Row # 2
5 Glass, Curved, bottle body fragment, green	Row # 3
1 Mineral, Mica, indeterminate type fragment	Row # 5
1 Synthetic, Plastic, indeterminate type fragment, white	Row # 6
Indeterminate	
1 Metal, Copper alloy, Lincoln cent, coin whole, corroded	Row # 4
<i>Total Artifacts in Context 11: 21</i>	
Hunter Research, Inc., Excavation Unit 2, Context 101	Catalog # 125
Historic	
1 Composite, Mortar, structural sample, mortar sample #1	Row # 1
<i>Total Artifacts in Context 101: 1</i>	
<i>Total Artifacts in 5 & 7 Excavation Unit 2 : 3201</i>	
<hr/>	
Hunter Research, Inc., Excavation Unit 3, Context 1	Catalog # 15
Modern	
1 Composite, Metal and plastic, bottle cap whole	Row # 1

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

1	Composite, Metal and plastic, circuit board fragment	Row #	2
1	Fauna, Shell - remains, snail fragment	Row #	3
1	Fired Clay - Ceramic, Refined Earthenware, Ironstone, tile fragment	Row #	6
4	Fired Clay - Ceramic, Refined Earthenware, Whiteware, cup/mug body fragment, light green wash	Row #	4
3	Fired Clay - Ceramic, Refined Earthenware, Whiteware, cup/mug base fragment, light green wash	Row #	5
8	Glass, Curved, bottle base fragment, knurled, clear/uncolored	Row #	35
2	Glass, Curved, bottle body fragment, embossed, brown	Row #	28
1	Glass, Curved, bottle body fragment, blue and white decal, clear/uncolored	Row #	29
2	Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row #	30
5	Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row #	31
9	Glass, Curved, bottle finish fragment, threaded, clear/uncolored	Row #	32
1	Glass, Curved, bottle base, knurled, clear/uncolored	Row #	34
1	Glass, Curved, bottle finish fragment, threaded, brown	Row #	25
1	Glass, Curved, bottle base fragment, clear/uncolored	Row #	36
47	Glass, Curved, bottle body fragment, clear/uncolored	Row #	37
3	Glass, Curved, bottle body fragment, stippled, clear/uncolored	Row #	39
3	Glass, Curved, bottle body fragment, embossed, clear/uncolored	Row #	40
2	Glass, Curved, bottle finish fragment, crown finish, clear/uncolored	Row #	33
2	Glass, Curved, bottle base fragment, brown	Row #	26
1	Glass, Curved, bottle finish fragment, crown finish, brown	Row #	24
1	Glass, Curved, bottle finish, threaded, brown	Row #	23
1	Glass, Curved, bottle body fragment, green, melted	Row #	22
20	Glass, Curved, bottle body fragment, green	Row #	21
3	Glass, Curved, bottle body fragment, embossed, green	Row #	20
1	Glass, Curved, bottle body fragment, green	Row #	19
2	Glass, Curved, bottle finish fragment, threaded, green	Row #	18
1	Glass, Curved, bottle finish fragment, crown finish, green	Row #	17
1	Glass, Curved, bottle base fragment, embossed, green	Row #	16
7	Glass, Curved, bottle base fragment, knurled, green	Row #	15
4	Glass, Curved, bottle rim fragment, red	Row #	8
10	Glass, Curved, bottle body fragment, brown	Row #	27
1	Glass, Curved, milk bottle finish fragment, clear/uncolored, patination	Row #	38
1	Metal, Aluminum, bottle cap whole, white, "MIDNIGHT DIVISION"	Row #	47
1	Metal, Aluminum, bottle cap whole, silver and red, "Budweiser"	Row #	42
1	Metal, Aluminum, bottle cap whole	Row #	46
1	Metal, Aluminum, bottle cap whole, red and blue, "Pepsi Free"	Row #	43
1	Metal, Aluminum, bottle cap whole, red and green, "Canada Dry"	Row #	45
1	Metal, Aluminum, bottle cap whole, black	Row #	44
2	Metal, Aluminum, can fragment, corroded	Row #	48
9	Metal, Aluminum, can tab fragment	Row #	41
1	Metal, Copper alloy, Lincoln cent, coin whole, corroded, 1972 - 1972	Row #	49
1	Metal, Copper alloy, Mexican penny, coin whole, corroded, 1951 - 1951	Row #	50
1	Metal, Ferrous metal, bottle cap whole, corroded	Row #	53
1	Metal, Ferrous metal, washer and screw whole, corroded	Row #	52
3	Metal, Ferrous metal, wire fragment, corroded	Row #	51
1	Metal, Steel, screw whole	Row #	59
1	Mineral, Mica, indeterminate type fragment	Row #	67

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

1	Synthetic, Plastic, button whole, black, four eye sew through, resembles Hume type 23	Row #	66
1	Synthetic, Plastic, cap/lid fragment, white	Row #	65
1	Synthetic, Plastic, credit card fragment, silver	Row #	62
1	Synthetic, Plastic, indeterminate type fragment, tan	Row #	63
1	Synthetic, Plastic, indeterminate type fragment, green	Row #	60
1	Synthetic, Plastic, indeterminate type fragment, black	Row #	61
1	Synthetic, Plastic, wrapper fragment, silver	Row #	64
Historic			
1	Fired Clay - Non-ceramic, Earthenware, Terra cotta, sewer pipe fragment	Row #	7
2	Glass, Curved, bottle base fragment, aqua	Row #	9
1	Glass, Curved, bottle body fragment, medium olive amber	Row #	14
2	Glass, Curved, bottle body fragment, light olive green	Row #	12
1	Glass, Curved, bottle body fragment, blue	Row #	11
5	Glass, Curved, bottle body fragment, aqua	Row #	10
1	Glass, Curved, toy, marble whole, light olive green	Row #	13
20	Metal, Ferrous metal, nail whole, wire, corroded	Row #	56
5	Metal, Ferrous metal, nail whole, cut, corroded	Row #	57
2	Metal, Ferrous metal, nail whole, cut, corroded	Row #	58
10	Metal, Ferrous metal, nail fragment, cut, corroded, head missing	Row #	54
13	Metal, Ferrous metal, nail fragment, cut, corroded, point missing	Row #	55
<i>Total Artifacts in Context 1: 247</i>			
Hunter Research, Inc., Excavation Unit 3, Context 2			Catalog # 16
Modern			
1	Glass, Curved, bottle body fragment, green	Row #	2
1	Glass, Curved, bottle body fragment, brown	Row #	3
4	Glass, Curved, bottle body fragment, clear/uncolored	Row #	1
1	Glass, Curved, bottle base fragment, clear/uncolored	Row #	4
25	Synthetic, Plastic, drug paraphernalia fragment, approximation due to presence of hazardous material	Row #	7
1	Synthetic, Plastic, zip tie fragment, black	Row #	6
Historic			
2	Metal, Ferrous metal, nail fragment, cut, corroded	Row #	5
<i>Total Artifacts in Context 2: 35</i>			
<i>Total Artifacts in Excavation Unit 3 : 282</i>			
Hunter Research, Inc., Excavation Unit 4, Context 1			Catalog # 17
Modern			
1	Fauna, Bone - remains, chicken femur >90% complete	Row #	3
2	Fauna, Bone - remains, fowl longbone fragment	Row #	4
1	Fauna, Bone - remains, rodent mandible fragment	Row #	5
1	Fauna, Bone - remains, turkey skull fragment	Row #	7
1	Glass, Curved, bottle body fragment, green	Row #	11
2	Glass, Curved, bottle body fragment, brown	Row #	10
12	Glass, Curved, bottle body fragment, clear/uncolored	Row #	13
1	Glass, Curved, bottle body fragment, light aqua	Row #	12
25	Synthetic, Plastic, drug paraphernalia fragment, approximation due to presence of hazardous material	Row #	22

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

Indeterminate

1 Fauna, Shell - remains, oyster fragment	Row # 8
1 Flora, Wood, indeterminate type fragment, 46g, small bits of wood in soil	Row # 9
1 Stone, Jasper, indeterminate type fragment, possibly prehistoric	Row # 21

Historic

1 Composite, Glass and mortar, indeterminate type fragment	Row # 2
12 Composite, Mortar, structural fragment	Row # 1
1 Fauna, Bone - remains, large mammal fragment, butchered	Row # 6
1 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 18
1 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 20
1 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 17
23 Metal, Ferrous metal, nail whole, cut, corroded	Row # 14
34 Metal, Ferrous metal, nail fragment, cut, corroded, head missing	Row # 15
53 Metal, Ferrous metal, nail fragment, cut, corroded, point missing	Row # 16
1 Metal, Ferrous metal, spike whole, cut, corroded	Row # 19

Total Artifacts in Context 1: 177

Hunter Research, Inc., Excavation Unit 4, Context 2

Catalog # 18

Modern

1 Composite, Glass and aluminum, bottle finish with screw cap, clear/uncolored	Row # 47
1 Fauna, Bone - remains, animal patella whole	Row # 10
1 Fauna, Bone - remains, fowl humerus whole	Row # 7
8 Fauna, Bone - remains, fowl longbone fragment	Row # 8
1 Fauna, Bone - remains, fowl skull fragment	Row # 5
38 Fauna, Bone - remains, indeterminate type fragment	Row # 6
1 Fauna, Bone - remains, small mammal axis vertebra fragment	Row # 4
1 Fauna, Bone - remains, small mammal mandible fragment	Row # 1
2 Fauna, Bone - remains, small mammal maxilla fragment	Row # 2
2 Fauna, Bone - remains, small mammal tympanic bone fragment	Row # 3
7 Fired Clay - Ceramic, Refined Earthenware, Ironstone, tile fragment	Row # 16
1 Fired Clay - Ceramic, Refined Earthenware, Whiteware, cup/mug handle fragment, light green wash	Row # 12
5 Fired Clay - Ceramic, Refined Earthenware, Whiteware, cup/mug rim fragment, light green wash	Row # 13
2 Fired Clay - Ceramic, Refined Earthenware, Whiteware, cup/mug body fragment, light green wash	Row # 15
1 Fired Clay - Ceramic, Refined Earthenware, Whiteware, cup/mug footing fragment, light green wash	Row # 14
1 Glass, Curved, bottle body fragment, clear/uncolored, slightly solarized	Row # 36
2 Glass, Curved, bottle finish, threaded, clear/uncolored	Row # 37
4 Glass, Curved, bottle finish fragment, threaded, clear/uncolored	Row # 38
1 Glass, Curved, bottle finish fragment, crown finish, clear/uncolored	Row # 39
3 Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row # 40
1 Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row # 41
1 Glass, Curved, bottle finish fragment, clear/uncolored	Row # 50
7 Glass, Curved, bottle body fragment, blue and white decal, clear/uncolored	Row # 35
1 Glass, Curved, bottle body fragment, citron	Row # 48
1 Glass, Curved, bottle body fragment, red and white decal, clear/uncolored	Row # 42
19 Glass, Curved, bottle base fragment, clear/uncolored	Row # 43
21 Glass, Curved, bottle base fragment, knurled, clear/uncolored	Row # 44
7 Glass, Curved, bottle body fragment, embossed, clear/uncolored	Row # 45

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

11	Glass, Curved, bottle body fragment, stippled, clear/uncolored	Row # 46
42	Glass, Curved, bottle body fragment, clear/uncolored	Row # 51
2	Glass, Curved, bottle finish fragment, threaded, brown	Row # 17
4	Glass, Curved, bottle finish fragment, red and white decal, green	Row # 33
1	Glass, Curved, bottle finish fragment, threaded, green	Row # 32
1	Glass, Curved, bottle body fragment, green	Row # 31
9	Glass, Curved, bottle base fragment, knurled, green	Row # 30
1	Glass, Curved, bottle base fragment, green	Row # 29
27	Glass, Curved, bottle body fragment, green	Row # 28
3	Glass, Curved, bottle base fragment, knurled, brown	Row # 18
1	Glass, Curved, bottle body fragment, stippled, brown	Row # 22
2	Glass, Curved, bottle body fragment, embossed, brown	Row # 21
23	Glass, Curved, bottle body fragment, brown	Row # 20
2	Glass, Curved, bottle base fragment, brown	Row # 19
14	Glass, Curved, bottle body fragment, molded design, clear/uncolored	Row # 34
1	Glass, Curved, button whole, white	Row # 49
1	Glass, Flat, window fragment, light aqua	Row # 53
1	Glass, Flat, window fragment, clear/uncolored	Row # 52
1	Metal, Aluminum, bottle cap whole, corroded	Row # 63
1	Metal, Aluminum, bottle cap whole, red, white, and blue	Row # 55
3	Metal, Aluminum, bottle cap whole, blue, "Colt 45"	Row # 56
1	Metal, Aluminum, bottle cap whole, red, "7up"	Row # 57
1	Metal, Aluminum, bottle cap whole, red and white, corroded, "Snapple"	Row # 58
1	Metal, Aluminum, bottle cap whole, red and white, "OLDE ENGLISH 800"	Row # 59
1	Metal, Aluminum, bottle cap whole	Row # 60
1	Metal, Aluminum, can fragment, corroded	Row # 62
2	Metal, Aluminum, can fragment, tan and blue	Row # 61
9	Metal, Aluminum, can tab fragment	Row # 54
1	Metal, Copper alloy, US nickel, coin whole, 1962 - 1962	Row # 66
1	Metal, Copper alloy, US nickel, coin whole, 1953 - 1953	Row # 67
1	Metal, Copper alloy, Lincoln cent, coin whole, 1967 - 1967	Row # 65
1	Metal, Copper alloy, Lincoln cent, coin whole, 1994 - 1994	Row # 64
1	Metal, Ferrous metal, bottle cap fragment, corroded	Row # 69
1	Metal, Ferrous metal, bottle cap whole, corroded	Row # 70
1	Metal, Ferrous metal, can fragment, corroded	Row # 77
1	Metal, Ferrous metal, D ring whole, corroded	Row # 71
1	Metal, Ferrous metal, gear whole, corroded	Row # 72
1	Metal, Ferrous metal, nut whole, corroded	Row # 73
1	Metal, Ferrous metal, screw whole, corroded	Row # 76
1	Metal, Silver, spoon whole, corroded, Maker's Mark, possibly Russian	Row # 68
2	Metal, Steel, glue tube fragment, yellow, corroded	Row # 85
1	Metal, Steel, indeterminate type fragment, corroded	Row # 87
2	Metal, Steel, tin fragment, yellow, corroded, "ANACIN"	Row # 86
1	Synthetic, Plastic, bottle cap fragment, yellow	Row # 88
1	Synthetic, Plastic, button whole, grey, four eye sew through, sunken panel	Row # 91
1	Synthetic, Plastic, button whole, white, four eye sew through, sunken panel	Row # 93
1	Synthetic, Plastic, button whole, white, four eye sew through, sunken panel	Row # 94

**APPENDIX D (Cont.)
ARTIFACT INVENTORY**

1 Synthetic, Plastic, cap/lid fragment, white	Row # 92
1 Synthetic, Plastic, hollow ware handle fragment, light green	Row # 90
1 Synthetic, Plastic, indeterminate type fragment, black	Row # 97
1 Synthetic, Plastic, indeterminate type fragment, brown	Row # 99
1 Synthetic, Plastic, indeterminate type fragment, black	Row # 100
1 Synthetic, Plastic, indeterminate type fragment, white	Row # 89
1 Synthetic, Plastic, indeterminate type fragment, grey	Row # 98
1 Synthetic, Plastic, wrapper fragment, yellow, M&Ms	Row # 96
1 Synthetic, Plastic, wrapper fragment, brown and blue, Snickers	Row # 95
Indeterminate	
10 Fauna, Shell - remains, oyster fragment	Row # 9
1 Mineral, Charcoal, waste material fragment	Row # 101
Historic	
1 Fired Clay - Ceramic, Porcelain, hollow ware body fragment, undecorated	Row # 11
1 Glass, Curved, bottle base fragment, aqua	Row # 24
2 Glass, Curved, bottle body fragment, medium blue-green	Row # 23
3 Glass, Curved, bottle base fragment, citron	Row # 25
2 Glass, Curved, bottle body fragment, aqua, melted	Row # 27
4 Glass, Curved, bottle body fragment, aqua	Row # 26
1 Metal, Ferrous metal, bolt fragment, corroded	Row # 75
1 Metal, Ferrous metal, bolt whole, corroded	Row # 74
1 Metal, Ferrous metal, hook whole, corroded	Row # 80
1 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 79
3 Metal, Ferrous metal, indeterminate type fragment, corroded	Row # 78
3 Metal, Ferrous metal, nail whole, wire, corroded	Row # 81
23 Metal, Ferrous metal, nail whole, cut, corroded	Row # 82
72 Metal, Ferrous metal, nail fragment, cut, corroded, point missing	Row # 83
29 Metal, Ferrous metal, nail fragment, cut, corroded, head missing	Row # 84
1 Stone, Flint, gunflint fragment	Row # 102

Total Artifacts in Context 2: 497

Hunter Research, Inc., Excavation Unit 4, Context 102

Catalog # 126

Historic

1 Composite, Mortar, structural sample, mortar sample #2	Row # 1
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Total Artifacts in Context 102: 1

Hunter Research, Inc., Excavation Unit 4, Context 103

Catalog # 127

Historic

1 Composite, Mortar, structural sample, mortar sample #3	Row # 1
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Total Artifacts in Context 103: 1

Total Artifacts in Excavation Unit 4 : 676

Total Number of Artifacts: 5845

*** Item Discarded in Laboratory**

Appendix E

RESUMES

RICHARD W. HUNTER
President/Principal Archaeologist, Ph.D., RPA

EDUCATION

Ph.D., Geography, Rutgers University, New Brunswick, New Jersey, 1999.
Dissertation Title: *Patterns of Mill Siting and Materials Processing: A Historical Geography of Water-Powered Industry in Central New Jersey*

M.A., Archaeological Science, University of Bradford, England, 1975

B.A., Archaeology and Geography, University of Birmingham, England, 1973

EXPERIENCE

1986-present President/Principal Archaeologist
Hunter Research, Inc., Trenton, NJ

Founder and principal stockholder of firm providing archaeological and historical research, survey, excavation, evaluation, report preparation, historic exhibit development and public outreach services in the Northeastern United States. Specific expertise in historical and industrial archaeology (mills, iron and steel manufacture, pottery manufacture), historical geography, historic landscape analysis, historic interpretive design and public outreach products. Participation in:

- Project management, budgeting and scheduling
- Proposal preparation and client negotiation
- Hiring and supervision of personnel
- Supervision of research, fieldwork, analysis and report preparation
- Historic exhibit development, popular and academic publications and public presentations

1999-2004 Faculty Member, Certificate in Historic Preservation
Office of Continuing Education, Drew University, Madison, NJ

Courses: The Role of Archaeology in Preservation
25 Years of Public Archaeology in New Jersey

1983-1986 Vice-President/Archaeologist
Heritage Studies, Inc., Princeton, NJ

Principal in charge of archaeological projects. Responsibilities included:

- Survey, excavation, analysis, and reports
- Client solicitation, negotiation, and liaison
- Project planning, budgeting, and scheduling
- Recruitment and supervision of personnel

1981-1983 Principal Archaeologist
Cultural Resource Group, Louis Berger & Associates, Inc., East Orange, NJ

Directed historical and industrial archaeological work on major cultural resource surveys and mitigation projects in the Mid-Atlantic region. Primary responsibility for report preparation and editing.

- 1979-1981 Archaeological Consultant, Hopewell, NJ
- 1978-1981 Adjunct Assistant Professor, Department of Classics and Archaeology, Douglass College, Rutgers University, NJ
- 1978-1979 Research Editor
Arete Publishing Company, Princeton, NJ
- Prepared and edited archaeological, anthropological, and geographical encyclopedia entries (*Academic American Encyclopedia*, 1980).
- 1974-1977 Archaeological Field Officer
Northampton Development Corporation, Northampton, England
- Supervised archaeological salvage projects executed prior to development of the medieval town of Northampton (pop. 230,000).
- Experience included:
- Monitoring of construction activity
 - Supervision of large scale urban excavations
 - Processing of stratigraphic data and artifacts
 - Preparation of publication materials
- 1969-1970 Research Assistant
Department of Planning and Transportation, Greater London Council

SPECIAL SKILLS AND INTERESTS

- water-powered mill sites
- canals and urban water powers
- iron and steel manufacture
- pottery manufacture
- historic cartography
- scientific methods in archaeology
- historic sites interpretation and public outreach

SELECTED PUBLICATIONS

"New York's Urban Archaeology. The Forts Landscape Reconstruction Project: Central Park's Revolutionary War Forts." *Archaeological Institute of America, New York Society News*, Winter 2015:6-8.

Sartori to Sacred Heart: Early Catholic Trenton. Sacred Heart Church [2014] (with Patrick Harshbarger).

"Historical Archaeology in Trenton: A Thirty-Year Retrospective." In *Historical Archaeology of the Delaware Valley, 1600-1850*, edited by Richard Veit and David Orr. University of Tennessee Press, Knoxville, Tennessee [2013] (with Ian Burrow).

"A Sugar Bowl of William Young & Sons or William Young's Sons." *Trenton Potteries* 13 (1):1-3 [2013].

"Internal Oxidation of Cast Iron Artifacts from an 18th-century Steel Cementation Furnace." *Journal of Archaeological Science* XXX, 1-8 [2012] (with Colin Thomas and Robert Gordon).

"Steel Away: the Trenton Steel Works and the Struggle for American Manufacturing Independence." In *Footprints of Industry: Papers from the 300th Anniversary Conference at Coalbrookdale, 3-7 June 2009*, edited by Paul Belford, Marilyn Palmer and Roger White. *BAR British Series* 523 [2010] (with Ian Burrow).

"Early Milling and Waterpower." In *Mapping New Jersey: An Evolving Landscape*, edited by Maxine N. Lurie and Peter O. Wacker, pp. 170-179. Rutgers University Press [2009].

"On the Eagle's Wings: Textiles, Trenton, Textiles, and a First Taste of the Industrial Revolution." *New Jersey History* 124, Number 1, 57-98 [2009] (with Nadine Sergejeff and Damon Tvaryanas).

"The Historical Geography and Archaeology of the Revolutionary War in New Jersey." In *New Jersey in the American Revolution*, edited by Barbara J. Mitnick, pp.165-193. Rutgers University Press [2005] (with Ian C.G. Burrow).

"Lenox Factory Buildings Demolished." *Trenton Potteries* 6 (2/3):1-9 [2005].

Fish and Ships: Lambertton, the Port of Trenton. New Jersey Department of Transportation and Federal Highway Administration [2005] (28-page booklet).

Power to the City: The Trenton Water Power. New Jersey Department of Transportation and Federal Highway Administration [2005] (24-page booklet).

Rolling Rails by the River: Iron and Steel Fabrication in South Trenton. New Jersey Department of Transportation and Federal Highway Administration [2005] (24-page booklet).

Quakers, Warriors, and Capitalists: Riverview Cemetery and Trenton's Dead. New Jersey Department of Transportation and Federal Highway Administration [2005] (24-page booklet) (with Charles H. Ashton).

"Keeping the Public in Public Archaeology." In: *Historic Preservation Bulletin*, pp. 6-9. New Jersey Department of Environmental Protection, Division of Parks and Forestry, Historic Preservation Office [2004].

"A Coxon Waster Dump of the Mid-1860s, Sampled in Trenton, New Jersey." In: *Ceramics in America*, edited by Robert Hunter, pp. 241-244. University Press of New England [2003] (with William B. Liebeknecht and Rebecca White).

"The Richards Face – Shades of an Eighteenth-Century American Bellarmine." In: *Ceramics in America*, edited by Robert Hunter, pp. 259-261. University Press of New England [2003] (with William B. Liebeknecht).

"The Pottery Decorating Shop of the Mayer Arsenal Pottery Company." *Trenton Potteries* 4(2):1-7 [2003].

"Minutes of the Potters Union (Part 2)." *Trenton Potteries* 4(1):1-5 [2003].

"Minutes of the Potters Union (Part I)." *Trenton Potteries* 3(4):1-5 [2002].

"Eighteenth-Century Stoneware Kiln of William Richards Found on the Lambertton Waterfront, Trenton, New Jersey." In: *Ceramics in America*, edited by Robert Hunter, pp. 239-243. University Press of New England [2001].

"William Richards' Stoneware Pottery Discovered!" *Trenton Potteries* 1(3):1-3 [2000]. Reprinted in *Bulletin of the Archaeological Society of New Jersey* 59:71-73 [2004].

"Trenton Re-Makes: Reviving the City by the Falls of the Delaware." *Preservation Perspective* XVIII (2): 1, 3-5 [1999]

"Mitigating Effects on an Industrial Pottery." *CRM* 21(9):25-26 [1998] (with Patricia Madrigal).

From Teacups to Toilets: A Century of Industrial Pottery in Trenton, Circa 1850 to 1940, Teachers Guide sponsored by the New Jersey Department of Transportation, 1997 (with Patricia Madrigal and Wilson Creative Marketing).

"Pretty Village to Urban Place: 18th Century Trenton and Its Archaeology." *New Jersey History*, Volume 114, Numbers 3-4, 32-52 [Fall/Winter 1996] (with Ian Burrow).

Hopewell: A Historical Geography. Township of Hopewell [1991] (with Richard L. Porter).

"Contracting Archaeology? Cultural Resource Management in New Jersey, U.S.A." *The Field Archaeologist* (Journal of the Institute of Field Archaeologists) 12, 194-200 [March 1990] (with Ian Burrow).

"American Steel in the Colonial Period: Trenton's Role in a 'Neglected' Industry." In *Canal History and Technology Proceedings IX*, 83-118 [1990] (with Richard L. Porter).

"The Demise of Traditional Pottery Manufacture on Sourland Mountain, New Jersey, during the Industrial Revolution." Ch. 13 in *Domestic Potters of the Northeastern United States, 1625-1850*. Studies in Historical Archaeology, Academic Press [1985].

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists (RPA) [formerly Society of Professional Archeologists] (accredited 1979; certification in field research, collections research, theoretical or archival research)

Preservation New Jersey (Board Member, 1994 - 2003)

New Jersey State Historic Sites Review Board (Member, 1983 -1993)

Society for Historical Archaeology

Society for Industrial Archaeology

Society for Post-Medieval Archaeology

Historical Metallurgical Society

Council for Northeast Historical Archaeology

Professional Archaeologists of New York City

Archaeological Society of New Jersey (Life Member; Fellow, 2011)

OTHER AFFILIATIONS

Mercer County Cultural & Heritage Commission (Commissioner, 2011 – present)

Trenton Downtown Association (Board Member, 1998 – present; Board Chair, 2007 - 2008)

Trenton Museum Society, (Trustee, 2011 – present)

Hopewell Township Historic Preservation Commission (Member, 1998 - 2006; Chair 2003 - 2004)

Hopewell Valley Historical Society (Trustee, 2014 – present)

PATRICK HARSHBARGER
Vice President

Principal Historian/Architectural Historian/Industrial Archaeologist, M.A., M.P.A.

EDUCATION

M.A., History, Hagley Fellow, University of Delaware, Newark, Delaware, 1990

- Fields of Study: History of Technology (focus on built environment, structural engineering and architecture); American Colonial History; American Labor History; European Industrialization

Museum Studies Certificate, University of Delaware, Newark, Delaware, 1990

M.P.A., Public Administration, Florida International University, Miami, Florida, 1988

- Focus on non-profit management

B.A. *magna cum laude*, American History, Brown University, Providence, Rhode Island, 1984

EXPERIENCE

2015-present Vice President
Hunter Research, Inc., Trenton, New Jersey

As a member of the firm's senior management team, Mr. Harshbarger participates in all aspects of business management, development and strategic planning.

2010-present Principal Historian/Architectural Historian
Hunter Research, Inc., Trenton, New Jersey

Technical and day-to-day managerial responsibilities for historical and archival research in support of historic architecture and archaeology. Participation in:

- federal Section 106, state and municipal preservation law compliance review
- historical architectural survey, evaluation and recording of buildings and structures
- historical research
- preservation planning
- public outreach
- historical exhibits and signage
- interpretive planning and development
- report preparation
- proposal preparation

1996-2016 National Editor, *Society for Industrial Archeology Newsletter*
(www.sia-web.org/siapubs/publications.html)

Full editorial responsibilities inclusive of identifying and providing assistance to contributing authors and photographers, copy editing and oversight of graphic design and production on a quarterly basis. The SIA is the leading North American organization for the documentation and preservation of industrial heritage.

- 1991-2010 Senior Historian/Preservation Planner
TranSystems Corp. (formerly Lichtenstein Consulting Engineers)
Langhorne, Pennsylvania and Paramus, New Jersey
- Served as one of two staff historians to a national engineering and transportation consulting firm specializing in historic bridges and roads, as well as general cultural resources management services and architectural surveys (Sections 106 and 4f), to a client base consisting mainly of local, state and federal agencies.
- 1991-2009 Historian
McKelvey Museum Services, Wilmington, Delaware
- On-call interpretive planning, exhibit development and collections management for historic sites and museums in the Mid-Atlantic region inclusive of historical research, meetings with trustees and staff, and report preparation and editing.
- 1990 Historian, National Park Service
Historic American Engineering Record, Boston, Massachusetts
- 1989 Architectural Historian Intern
Bucks County Conservancy, Doylestown, Pennsylvania
- 1986-88 Special Assistant/Newsletter Editor
Office of the Vice President, Florida International University, Miami, Florida
- 1984-1986 Deputy Director
Slater Mill Historic Site, Pawtucket, Rhode Island

CONTINUING EDUCATION AND CERTIFICATIONS

- Secretary of the Interior's Professional Qualifications Standards for Historians (36 CFR Part 61)
- Secretary of the Interior's Professional Qualifications Standards for Architectural Historians (36 CFR Part 61)
- Architectural History Seminar and Workshop, New Hampshire Division of Historical Resources, Manchester, New Hampshire, 2014.
- National Register Nomination Preparation, New Jersey Historic Preservation Office and National Register of Historic Places Joint Workshop, Trenton, New Jersey, 2011
- Iron and Steel Preservation Workshop Certificate, Lansing Community College, Lansing, Michigan, 2010, 2012 (also presenter)
- Section 106 Training Certificate, Ohio Department of Transportation, Columbus, Ohio, 2010
- HAZWOPER 24-hr. Training
- Section 106 Training Workshop, Pennsylvania Department of Transportation, Allentown, Pennsylvania, 2009
- Museum Studies Certificate, University of Delaware, Newark, Delaware, 1990
- Hagley Fellow in the History of Industry and Technology/Museum Studies, Hagley Museum & Library, Wilmington, Delaware, 1988-1991

SPECIAL SKILLS AND INTERESTS

- historic engineering and bridges
- historic transportation systems (roads, canals, railroads)
- preservation of historic machinery and tools
- industrial and commercial architecture
- engineering heritage
- industrial archaeology
- public history and heritage tourism
- photography

PROFESSIONAL AFFILIATIONS

Association for Industrial Archaeology (U.K.)
National Railway Historical Society
National Society for the Preservation of Covered Bridges
National Trust for Historic Preservation
Newlin Foundation, Vice Executive Trustee
Society for Commercial Archeology
Society for the History of Technology
Society for Industrial Archeology
Society for the Preservation of Old Mills
Vernacular Architecture Forum

AWARDS

New Jersey State Historic Preservation Award for *A Gentleman's Pursuit: The Commodore's Greenhouse* with the Morven Museum, 2018.
General Tools Award for Distinguished Service to Industrial Archeology, Society for Industrial Archeology, 2017.
Preservation Award, County of Passaic, State of New Jersey for Contributions to Historic Preservation, 2016.
Preservation Award, City of Paterson, New Jersey for Intensive-Level Architectural Survey of the Dublin Workers' Neighborhood, 2016.
Preservation Award, City of Paterson, New Jersey for Intensive-Level Architectural Survey of Paterson's Industrial Complexes and Mills, 2012.
New Jersey State Historic Preservation Award for Petty's Run Site Archaeological Explorations, 2010.

SELECTED PUBLICATIONS AND REPORTS

Co-author with Richard W. Hunter. *Sartori to Sacred Heart: Early Catholic Trenton*. Sacred Heart Parish, Trenton, New Jersey, 2014.

New Jersey Department of Transportation's Fernwood Service Station, Serving New Jersey's Highways Since 1922. New Jersey Department of Transportation, Trenton, New Jersey. 2014.

"Two Pioneering American Roadways." *Proceedings of the Institution of Civil Engineers – Engineering History and Heritage*. London, England, May 2010.

Editor. *Abstracts of American Truss Bridge Patents, 1817-1900*. Society for Industrial Archeology, Houghton, Michigan, 2009.

Robert John Prowse, New Hampshire State Bridge Engineer. New Hampshire State Historic Preservation Monograph Series. Concord, New Hampshire, 2009.

Co-author. *National Guidelines for Historic Bridge Rehabilitation and Replacement*. Washington, D.C.: American Association of State Highway and Transportation Officials, 2008.

"Defining Historic Roads." *Proceedings of the 6th Preserving the Historic Road in America Conference*. Albuquerque, New Mexico, 2008.

Historic Bridge Basics. South Carolina Department of Transportation. Columbia, South Carolina, 2004.

"Strategies for Historic Evaluation of Standard Highway Bridges, 1920-1960." *Proceedings of the Preserving the Recent Past 2 Conference*. Philadelphia, Pennsylvania, October 2000.

"So Your Dualized Highway is 50 Years Old? Is It Historic?" *Proceedings of the Preserving the Historic Road in America Conference*. Morristown, New Jersey, April 2000.

Editor and Co-author. *Delaware's Historic Bridges: Survey and Evaluation of Historic Bridges with Historic Contexts for Highways and Railroads*. 2nd Edition Revised. Dover, Delaware: Delaware Department of Transportation, 2000.

"Metal Truss Bridges and Their Builders in Historical Perspective: Some Thoughts from a Case Study of the Phoenix Bridge Company." *Spans of Time*. Historic Ithaca: Ithaca, New York, 1999.

"The Providence School Board Reform Movement, 1898-1924." *Rhode Island History*, Volume 44, Number 2 (May 1985).

JAMES S. LEE, III, M.A., RPA
Vice President
Principal Investigator/Archaeologist

EDUCATION

M.A., Archaeology, University of Durham, Durham, United Kingdom, 1996

B.A., Anthropology and History, Rutgers University, New Brunswick, New Jersey, 1995

EXPERIENCE

2015-present Vice President/Principal Investigator/Archaeologist
Hunter Research, Inc., Trenton, NJ

Vice President of firm providing archaeological and historical research, survey, excavation, evaluation, report preparation and public outreach services in the Northeastern United States. Responsible for:

- Project management, budgeting and scheduling
- Technical and synthetic writing
- Proposal preparation, contract negotiation and management
- Hiring and supervision of personnel
- Supervision of research, fieldwork, analysis and report preparation

2001-2015 Principal Investigator
Hunter Research, Inc., Trenton, NJ

Technical and managerial responsibilities for survey, evaluation and mitigation of selected archaeological projects. Technical and managerial responsibility for report production. Participation in:

- overall site direction and day-to-day management
- development and implementation of research, excavation and analysis strategies for prehistoric and historic archaeological sites
- supervision of cartographic and GIS product, graphic design and report layout
- hiring and supervision of personnel

2001 Crew Chief
Kittatinny Archaeological Research, Stroudsburg, Pennsylvania

- survey and excavation
- supervision of field personnel
- stratigraphic and artifact analysis

1997-2001 Principal Investigator/Project Manager
Cultural Resource Consulting Group, Highland Park, New Jersey

- overall site direction and day-to-day management
- development and implementation of research, excavation and analysis strategies for prehistoric and historic archaeological sites
- report and proposal preparation
- hiring and supervision of personnel

1997-2000 Laboratory Supervisor
Cultural Resource Consulting Group, Highland Park, New Jersey

Technical and managerial responsibilities for laboratory components of archaeological projects. Participation in:

- management of laboratory operations
- supervision of laboratory personnel
- computerization of artifact data
- prehistoric and historic ceramic analysis
- preparation of artifact inventories and writing of artifact sections of reports

1996-1997 Field Technician
Cultural Resource Consulting Group, Highland Park, New Jersey

SPECIAL SKILLS AND INTERESTS

- canals and associated water control structures
- waterpowered mill sites
- iron manufacture
- prehistory of the northeastern United States
- prehistoric lithic technology
- historic sites interpretation and public outreach

CERTIFICATIONS

Secretary of the Interior's Professional Qualification Standards for Archaeologists (36 CFR Part 61)
Register of Professional Archaeologists
OSHA 40-hour Initial Training, 2002
OSHA 8-hour Refresher Course, 2012

PROFESSIONAL AFFILIATIONS

Society for Industrial Archaeology
Archaeological Society of New Jersey, Member at Large
Society for Pennsylvania Archaeology
New York State Archaeological Association
Canal Society of New Jersey
Warren County Morris Canal Committee
Eastern States Archaeological Federation
Middle Atlantic Archaeological Conference

SELECTED PRESENTATIONS

"The Fishkill Supply Depot: Archaeological Synthesis" Paper presented to the Friends of the Fishkill Supply Depot, October 25, 2015.

"Archaeological Investigations at the Tulpehacken Nature Center, Abbott Marshlands, Mercer County, New Jersey." Paper presented to the Archaeological Society of New Jersey, March 21, 2015.

"The Last 100 Years at Morris Canal Plane 9 West." Paper presented to the Canal Society of New Jersey, November 21, 2014 (with James Lee Jr.).

"Ephrata Tract Archaeological Assessment." Paper presented to the Moravian Historical Society, October 20, 2014.

"Archaeological Investigations in the Shadow of the Gap, I-80 Weigh Station Site (28Wa290)." Paper presented to the Society for Pennsylvania Archaeology, Forks of the Delaware Chapter 14. April 3, 2013.

"Exploring the Industrial Archaeological Resources of Waterloo Village." Paper presented to the Canal Society of New Jersey, March 15, 2013 (with Richard W. Hunter).

"Archaeological Investigations at Morris Canal Lock 2 East, Wharton, New Jersey." Paper presented to the Canal Society of New Jersey, March 16, 2012.

"Delaware and Raritan Canal Lock #1, Hamilton Township, Mercer County, New Jersey." Paper presented to the Canal Society of New Jersey, December 1, 2010 (with Richard W. Hunter).

"The Archaeological Potential of the Morris Canal." Paper presented to the Archaeological Society of New Jersey, March 19, 2007.

"Planes and Plans: The Morris Canal in Warren County." Paper presented to the New Jersey Historic Preservation Conference, April 23, 2004.

Topographical Map of Central Park Extension from 106th to 110th Streets & from V to VIII Ave.

1860 Manuscript map on file (DPR-1747), Municipal Archives of the City of New York, New York, New York.

Unfinished Map of New York Island

1776 Manuscript map on file, Library of Congress. Electronic Document, <https://www.loc.gov/resource/g3804n.ar115800/>, accessed September 2019.

Unfinished Map of New York Island

1778 Manuscript map on file, Library of Congress. Electronic Document, <https://www.loc.gov/resource/g3804n.ar116800/>, accessed September 2019.

Vazquez, Sandra

1995 Central Park North Woods, Trial Excavations at Blockhouse #1, Summary. Report on file, Central Park Conservancy, New York, New York.

Women's Auxiliary to the American Scenic and Historic Preservation Society

1904 *A Historic Sketch of Certain Defenses of New York City during the War of 1812-1815*. American Scenic and Historic preservation Society, New York, New York.