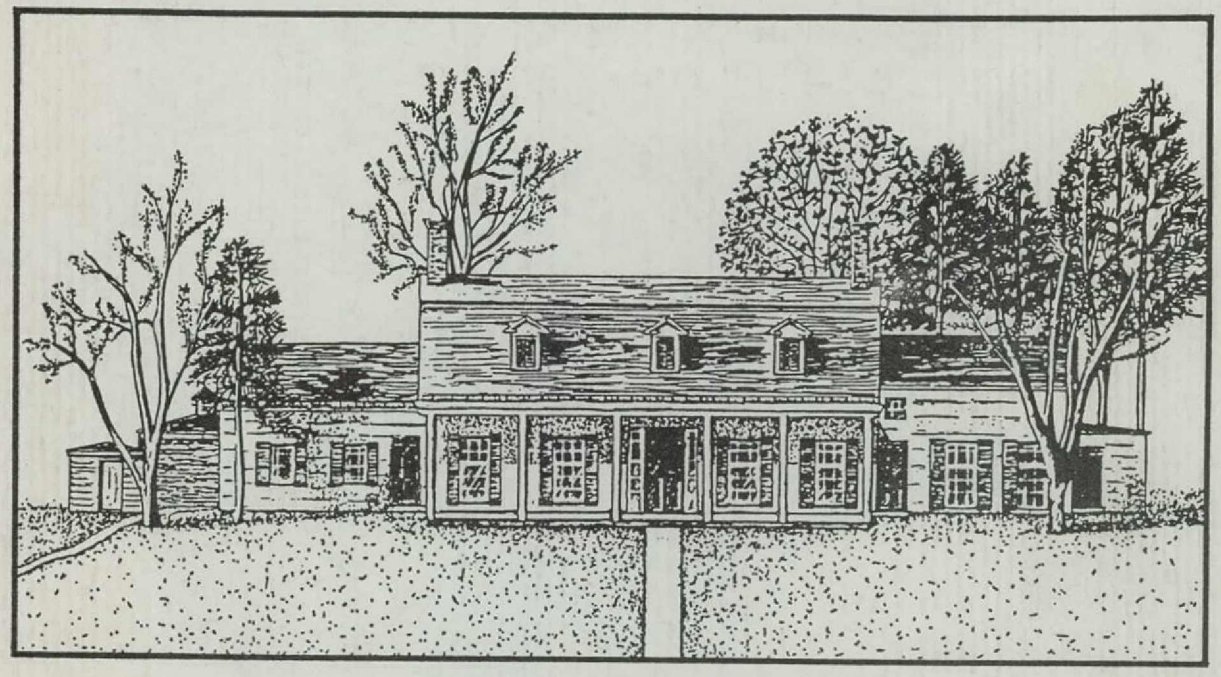
The VanDeventer-Fountain House Site
Ca. 1786 to 1901
Staten Island, New York



Volume I

Prepared By:

Lockwood, Kessler & Bartlett, Inc.
Syosset, New York
&
The Cultural Resource Group
Louis Berger & Associates, Inc.
East Orange, New Jersey

Prepared For:

Department of the Navy
Northern Division
Naval Facilities Engineering Command
Philadelphia, Pennsylvania

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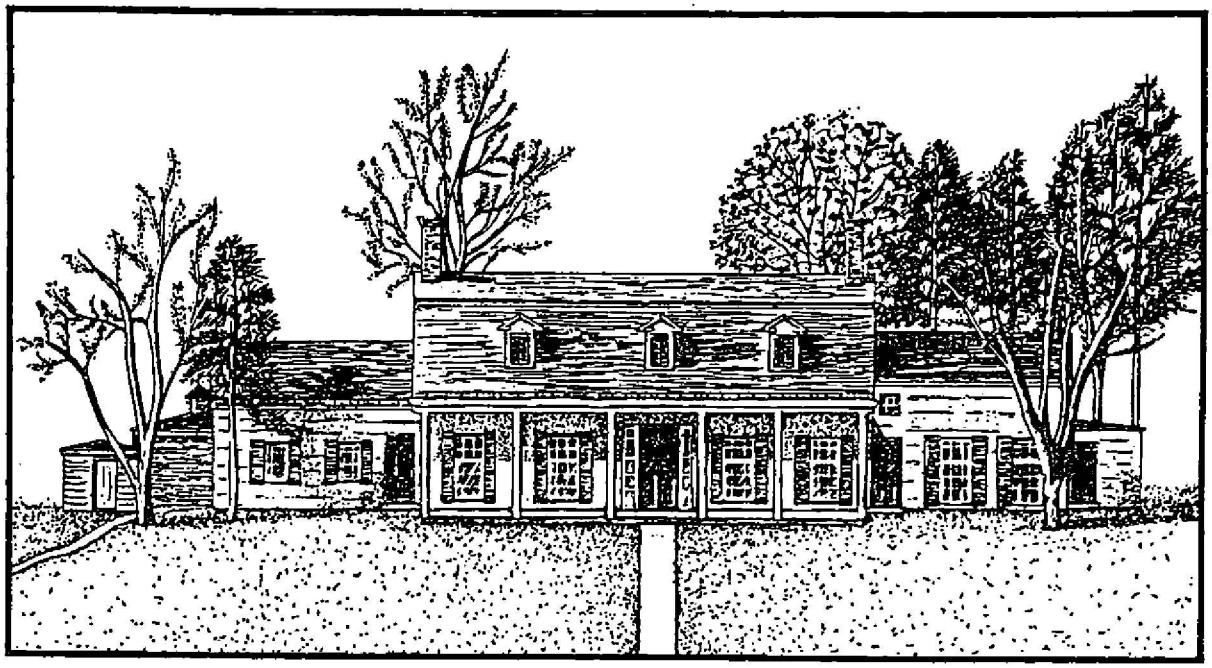

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THE VANDEVENTER-FOUNTAIN SITE
(A085-01-0007)
ARCHAEOLOGICAL DATA RECOVERY
RICHMOND COUNTY
STATEN ISLAND, NEW YORK

PREPARED FOR:

THE DEPARTMENT OF THE NAVY
NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
PHILADELPHIA, PENNSYLVANIA

PREPARED BY:

LOCKWOOD, KESSLER & BARTLETT, INC.
SYOSSET, NEW YORK
AND
THE CULTURAL RESOURCE GROUP
LOUIS BERGER & ASSOCIATES, INC.
EAST ORANGE, NEW YORK

MARCH 1990

ABSTRACT

A Phase III historical and archaeological data retrieval program was conducted by the Cultural Resource Group of Louis Berger & Associates, Inc. on the VanDeventer-Fountain House Site (A085-01-0007), Naval Station Staten Island, Staten Island, New York. Investigations of the site have contributed to the current understanding of prehistoric and rural lifeways in Staten Island. The study also provides a comparative data base for future archaeological investigations of Middle and Late Woodland sites and late eighteenth- to late nineteenth-century farmsteads. Prehistoric research domains consisted of determining site occupation and use, and the comparisons with contemporaneous sites on Staten Island and the general region. Specific historic research issues included comparisons between the consumer behavior of the site with the contemporaneous Hamlin family in northwestern New Jersey and urban households in New York City; an examination of the urban/rural continuum; and the study of the spatial arrangement of the farmstead over time.

ACKNOWLEDGEMENTS

Many individuals contributed to the successful completion of the VanDeventer-Fountain Data Retrieval Program. Edward M. Morin served as Principal Investigator during field and laboratory work. Jay R. Cohen provided invaluable assistance in directing the excavations as Field Supervisor. Dr. Amy Friedlander directed and reported on all historical research for the project and was assisted by Ingrid Wuebber and Martha Bowers.

One group of individuals deserves extensive praise. No archaeological project can hope to succeed without the dedicated support of the field crew. The situation at the VanDeventer-Fountain Site was no different, and all field archaeologists deserve special thanks. For their high level of commitment, we wish to thank the following field personnel:

Charles Blanchard	Robert Jacoby
John V. Bukoski	Meta Janowitz
Charles Dunton	John Martin
Lisa Elsinger	Theodore Neff
Patience Freeman	Marie-Lorraine Pipes
Paul C. Fournier	Joanne Saker
Mallory A. Gordon	Victor Stolberg
William Hinds	David Susice

Another group of individuals that deserves special recognition is the laboratory staff. All analyses were conducted under the direction of Suzanne Rimmler Kahn, Laboratory Supervisor, and Marian E. Craig, Assistant Laboratory Supervisor. Ms. Craig also supervised the conservation procedures undertaken by Byron Simmons and the computer management system. Dr. Michael Alterman and Judson Kratzer undertook the analyses of the prehistoric artifacts. Meta Janowitz, Material Specialist, conducted the historic ceramic analyses with the aid of Sharla Azizi. The glass analyses were conducted by Mallory A. Gordon, Material Specialist, with the assistance of John J. Killeen. Marie-Lorraine Pipes, Laboratory Assistant, supervised the analyses of the remaining artifact types with the support of the following Laboratory Technicians, who were also involved in the general artifact processing procedures:

Paul C. Fournier	Rudy Alexander Ortiz
Robert Jacoby	Joanne Saker
Paul Muto	Nadia Shevchuk

Production of this report was a joint effort involving numerous individuals. Principal authors of the report were Edward M. Morin, Jay R. Cohen, and Dr. Amy Friedlander. Contributing authors

included Cheryl A. Holt, Dr. Michael Alterman, Mallory A. Gordon, Meta Janowitz, and Marie-Lorraine Pipes. Editing and report production was carried out by Lee Nicoletti, Production Manager, with the assistance of Suzanne Szanto, Report Coordinator and Technical Editor, Michael Timpanaro, Production Assistant, and Word Processing Operators Jacqueline Farmer and Joanie Jernigan. Drafting of the final figures was completed by Tim Sara and Tony Masso. Photographic documentation, both in the field and for the report, was a joint effort by Rob Tucher and Tony Masso.

Special thanks go to Dr. John A. Hotopp, Director of the Cultural Resource Group of Louis Berger & Associates, Inc., for his support and advice during all phases of this project. Also, a number of LBA's staff archaeologists provided helpful advice and informal assistance during the course of the project. These individuals include Terry Klein, Assistant Director, Dr. R. Michael Stewart, and Benjamin Resnick.

Some specialized studies related to the project were undertaken by consultants. These consultants include Analytical Services for Archaeologists (Alexandria, Virginia) and Lisa E. Penet (Long Island, New York).

Completion of this project and report were facilitated by the helpful cooperation of several people outside of the Cultural Resource Group who deserve mention for special contributions. Sylvester A. Cellebrini and Rowland Girvan of Lockwood Kessler & Bartlett, Inc., and Robert Ostermueller of the Naval Facilities Engineering Command, U.S. Navy, Northern Division, offered constant support and assistance during the project. Grateful appreciation also is extended to Lieutenant Sharon Smith, Officer-in-Charge, Lieutenant Commander Heindricks, Chief Harris, and Ralph F. Tinari, Deputy Resident Engineer in Charge of Construction of Naval Station New York, for their help and additional logistical support throughout the entire project. A final thank you goes to John Corcia of J.A.C. Excavating for his assistance during the machine-excavation stage of the project.

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I. INTRODUCTION

The Cultural Resource Group of Louis Berger & Associates, Inc. (LBA), conducted a program of historical research and archaeological data recovery at the VanDeventer-Fountain House Site (A085-01-0007), Naval Station Staten Island, Staten Island, New York. This study was undertaken for Lockwood, Kessler, & Bartlett, Inc., who are under contract to the Northern Division, Naval Facilities Engineering Command, Philadelphia, Pennsylvania. The proposed construction of housing, administrative, and other personnel facilities by the Navy would impact this National Register eligible historic site.

The study was performed to mitigate the impact of the proposed development, as set forth by the August 6, 1986, Memorandum of Agreement signed by the Navy, Advisory Council on Historic Preservation, and the New York State Historic Preservation Officer.

A. ENVIRONMENTAL SETTING

The VanDeventer-Fountain House Site is located in the southwestern section of the Naval Station Staten Island (Figure 1.1). It is bounded by Lasher Road to the north, Camp Road to the east, and recreational areas to the south and west (Figure 1.2). Lower New York Harbor is approximately 600 feet south of the site. The project area is situated within the Atlantic Coastal Plain province of Staten Island. The general vicinity of the site is characterized by a Precambrian crystalline bedrock, which is overlain by cretaceous clays and glacial deposits. The bedrock is the Manhattan formation mica schist extensively intruded by granite and serpentinite, and may be overlain by layers of cretaceous silty clay (Department of the Navy 1984:3-3).

Two types of Pleistocene glacial deposits, a terminal moraine and outwash, form the surface deposits overlying the bedrock and cretaceous clays within Naval Station Staten Island. The Harbor Hill moraine covers the northern two-thirds of the Naval Station, while the outwash deposits cover the southeastern one-third, including the project area. The outwash deposits, consisting primarily of stratified, permeable beds of reddish brown to gray, medium to fine sands, and sands and gravel, form a gently sloping plain, extending from the moraine to the shoreline.

The VanDeventer-Fountain House Site is situated on a gently sloping lawn, with several sycamore and poplar trees scattered across the north and south ends of the site. East and west of the site are stands of poplar, oak, and maple trees. Secondary growth within these stands consist of berry and poison ivy vines, as well as a variety of small saplings.

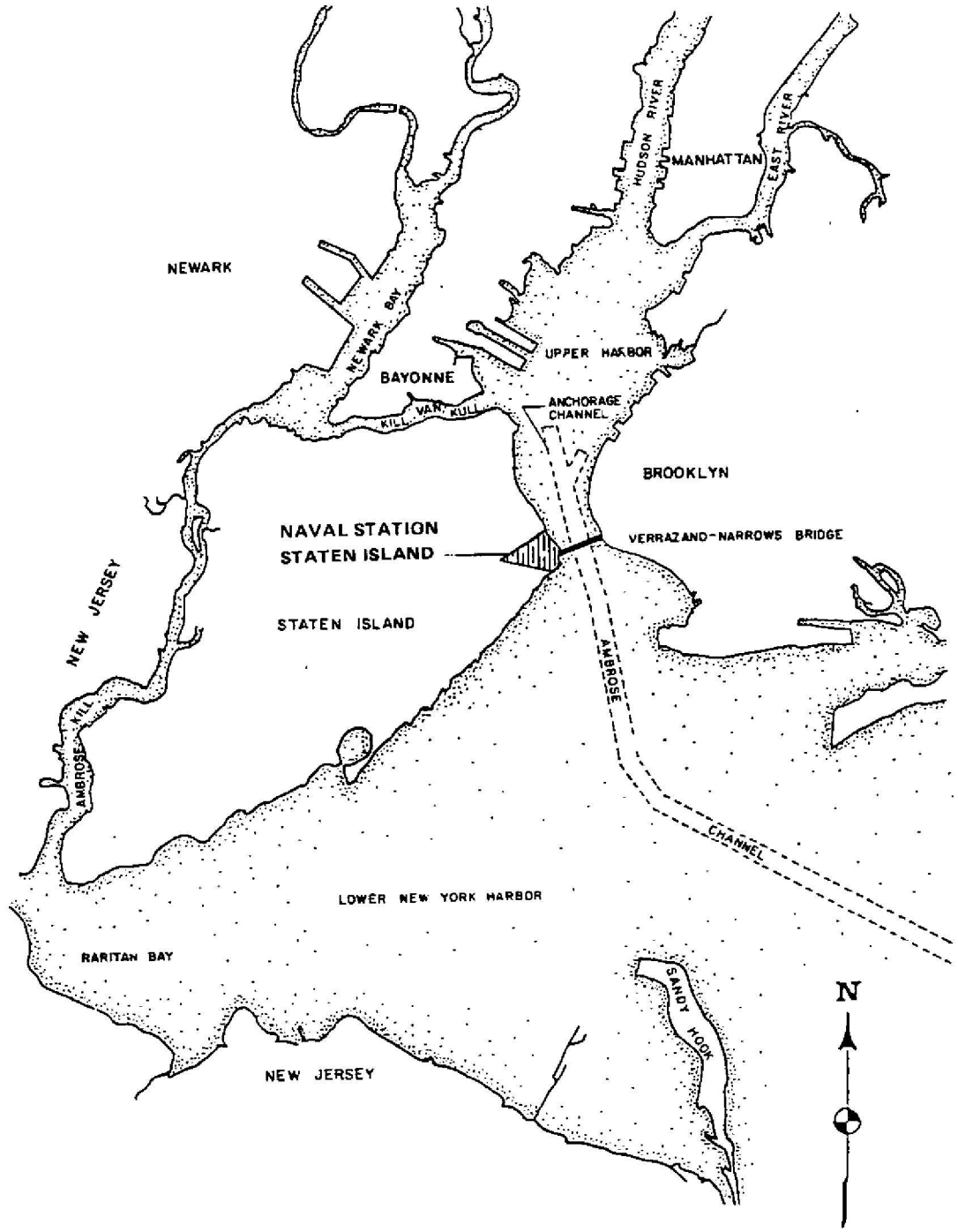


FIGURE 1.1. Project Location

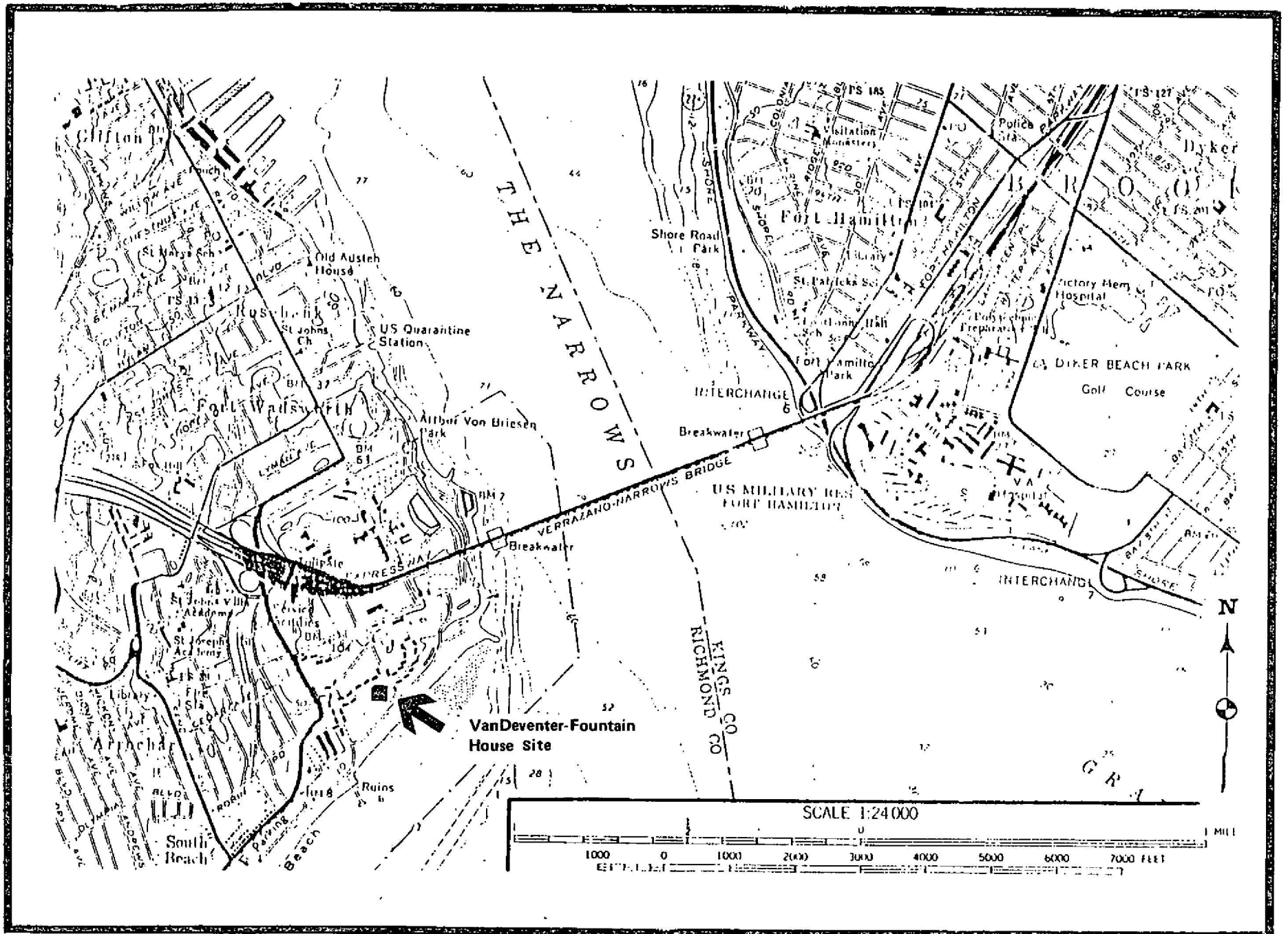


FIGURE 1.2: Location of VanDeventer - Fountain House Site (A-085-01-0007), Naval Station, Staten Island, N.Y. SOURCE: USGS, The Narrows Quadrangle, 7.5 Minute Series

B. PREVIOUS INVESTIGATIONS

As part of the preparation of the Environmental Impact Statement for the Surface Action Group Homeporting, Stapleton-Fort Wadsworth Complex, Staten Island, Dr. Bert Salwen of New York University directed a historical and archaeological survey of Fort Wadsworth in 1984. The survey involved background research on the entire facility and the field testing of ten test areas within the fort that had potential to contain intact prehistoric and/or historic remains. Background research indicated that a structure dating to the nineteenth century, the VanDeventer- Fountain House, occupied the test Area D (Figure 1.3). The house had been razed in the early twentieth century by the Army (Department of the Navy 1984: Appendix C).

The focus of archaeological fieldwork in Area D was to verify the location of the house and to obtain data on the integrity of artifactual deposits and features within the site. A total of 25 shovel tests were placed within Area D (Figure 1.4). These tests exposed an area of disturbance and/or filling 100 feet south of Lasher Road. However, shovel tests placed south of this area revealed intact deposits dating to the eighteenth and nineteenth centuries, in addition to a possible prehistoric component. Many of the shovel tests produced materials that appear to be related to the VanDeventer-Fountain House. These materials consisted of domestic refuse of ceramics, glass, bone, and shell.

One of the shovel tests (110S/28E) was expanded into a three-foot excavation unit in order to sample an area of the site that appeared to contain eighteenth-century and prehistoric materials in separate strata. A second unit (115S/28E) was opened near the first in order to examine these strata more fully and obtain a larger sample of materials within these strata.

As a result of Dr. Salwen's investigations, a Phase II program of background research and site testing was conducted in the fall of 1985 by the Cultural Resource Group of Louis Berger & Associates, Inc. Through the background research, ownership of the tract in which the VanDeventer-Fountain property was located was traced to 1759, when it was in the possession of John VanDeventer. The tract remained in the VanDeventer/Fountain family until 1881, when it was purchased by Henry Mouquin of New York City. He later sold the property, in 1901, to the United States Government as part of the Endicott-era expansion of the Fort Wadsworth reservation (presently Naval Station Staten Island). Seven years later, the Army razed the structure.

A turn-of-the-century photograph of the VanDeventer-Fountain House (filed at the Staten Island Institute of the Arts and Sciences), shows a five-bay one-and-one-half-story main block with gambrel "Flemish" roof, flanked by smaller (three-bay) one- story, gable-roofed units (see Plate 3.1). Such a dwelling could very

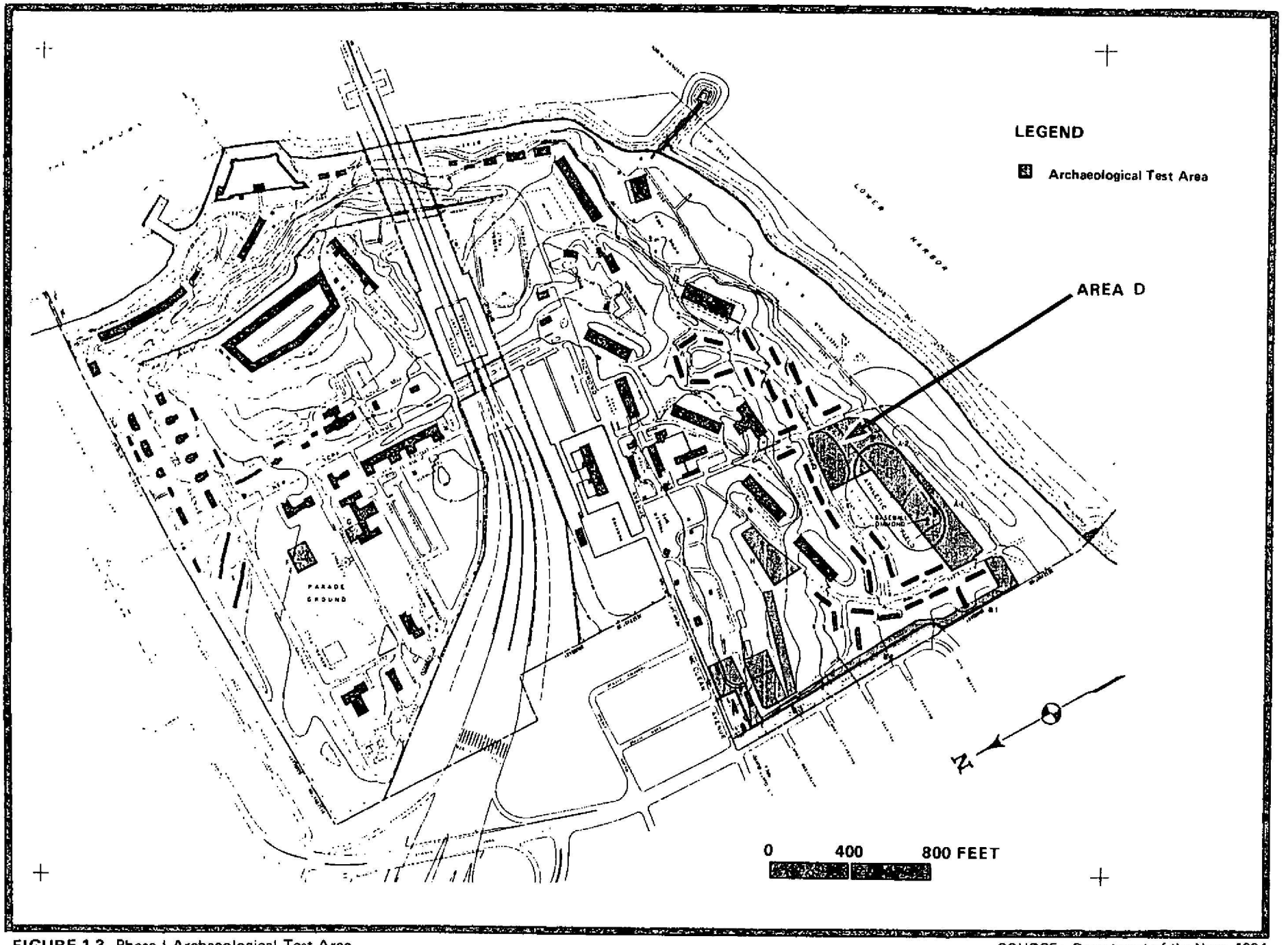


FIGURE 1.3. Phase I Archaeological Test Area

SOURCE: Department of the Navy, 1984

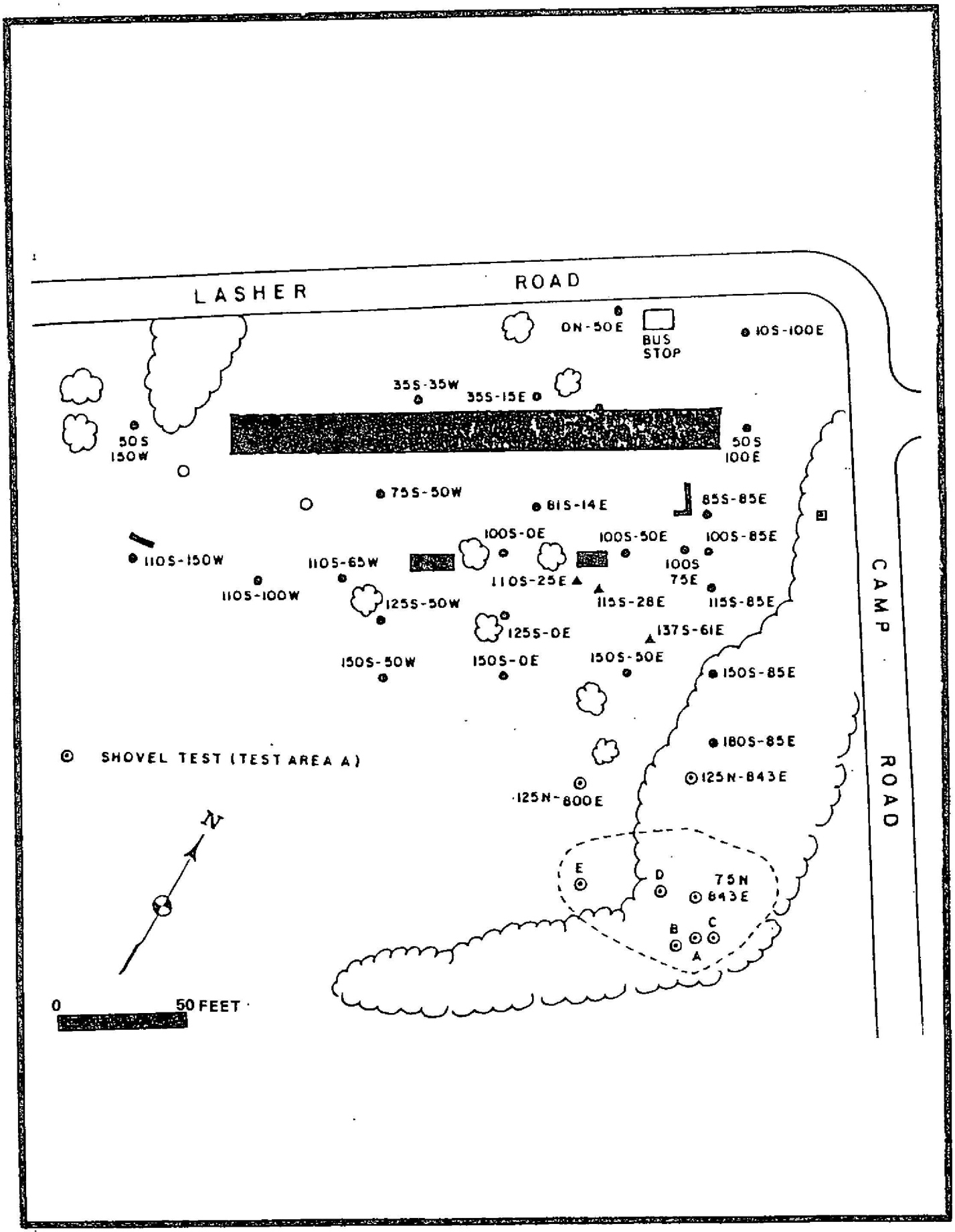


FIGURE 1.4: Test Area D, Vandeventer-Fountain House Site. Location of Phase I Shovel Tests and Test Units

well have been built on Staten Island at almost any period of the eighteenth century, although the house as shown was almost certainly the product of more than one building phase extending into the nineteenth century. Given the overall style and form of the house, it is highly unlikely that it was built as a suburban villa, and instead represents, as does the Alice Austen House further up the Narrows, the evolution of an eighteenth-century vernacular, rural dwelling to the rather different requirements of wealthy Victorian suburbanites.

Phase II archaeological investigations at the VanDeventer- Fountain House Site were based in part on the results of the previous investigations and on the historical background research. The initial field task was to define more closely the spatial bounds and context of the site. This was accomplished through excavation of a series of shovel tests placed along nine transects spaced at 20 to 50 foot intervals (Figure 1.5). Individual tests were placed at minimally 20 foot intervals along each transect. A total of 74 shovel tests were required to adequately characterize the boundary and context of the site. Upon completion of the shovel testing program, a total of five (5 x 5 foot) test units were excavated.

Cultural material associated with the main house and outbuildings, as well as a possible prehistoric component, extended across an area 120 feet north/south by 200 feet east/west. The northern area of the site, just south of Lasher Road, was apparently disturbed by twentieth-century construction activity. This disturbance, documented in the northern shovel tests, extends to a depth of approximately 2.0 feet below the current surface. Although the area north of the main structure was disturbed, the possibility still remained that this area contained deep features (e.g., privies, wells, cisterns) associated with the house and outbuildings. The western edge of the site was disturbed from the construction of a sewer line, while the ground surface southwest of the site had been deflated from construction of a playing field.

The shovel tests and excavation units exposed a deposit of sheet trash, consisting of small ceramic sherds (no more than two inches square), glass, bone, metal, shell, kaolin smoking pipes, and brick fragments. This deposit occurred in those shovel tests and units that were south of the area disturbed by twentieth- century construction. The frequency of material in this sheet midden was low to moderate, indicative of a historic yard surface(s). In addition, several walls were exposed in the southern half of the site (see Figure 1.5). These walls were clearly associated with the main house and two outbuildings, both of which are present in the photograph and an 1894 map of the area. Testing revealed the outline of the house with a cellar approximately six feet deep filled with debris from the 1907/08 demolition. It was not possible to determine if the cellar extended the full length and width of the house, given the limited scope of the testing program. One of the two outbuildings consisted of a 10 x 10 foot mortared stone

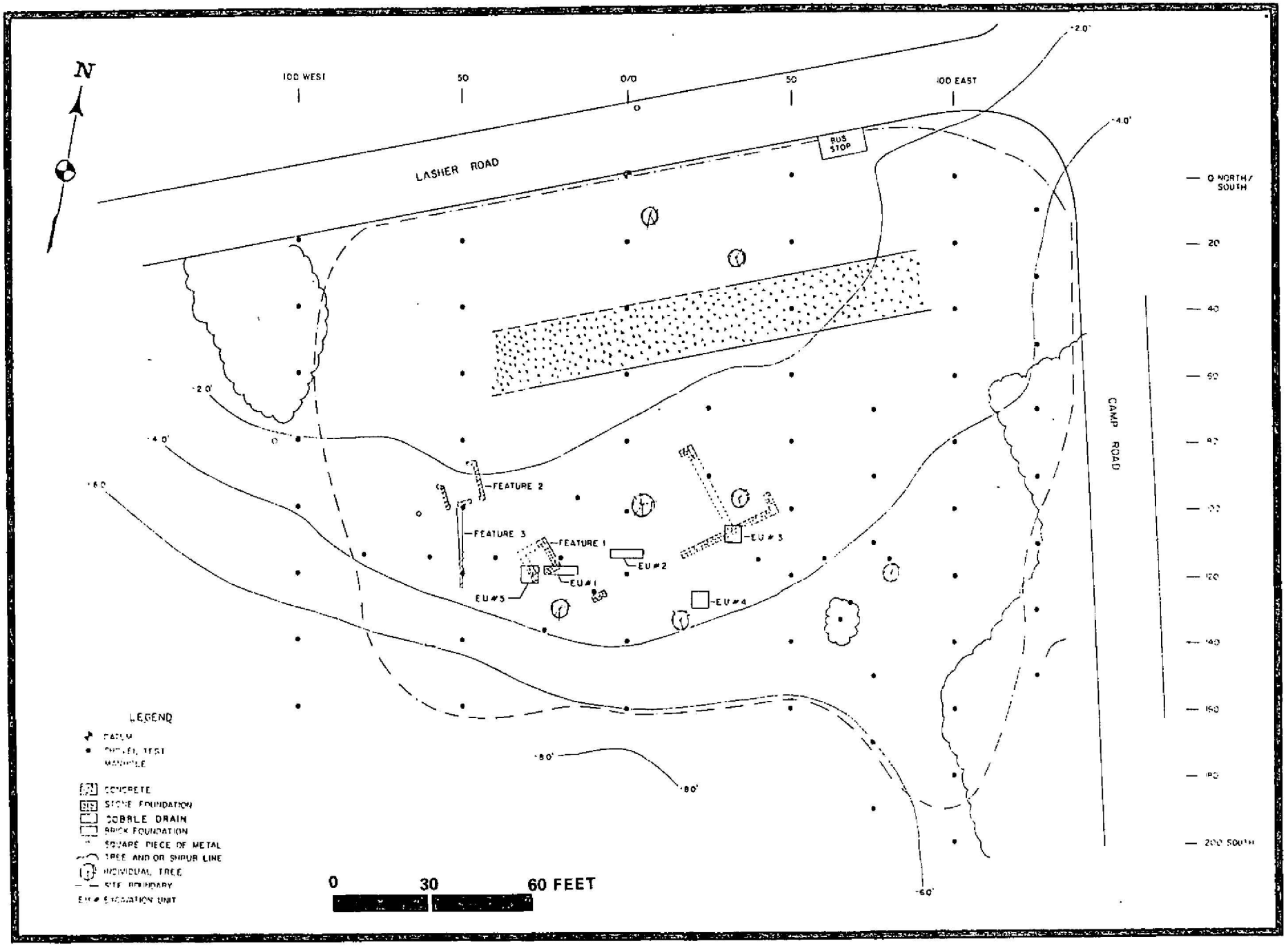


FIGURE 1.5: Phase II Site Plan

foundation that extended five feet below the ground surface. The second outbuilding consisted of a section of brick foundation of an undetermined structure (see Figure 1.5).

The analysis of artifacts recovered during Phase II indicated that the uppermost deposits within the site consisted of a mixture of eighteenth- to twentieth-century materials. Below these soils, the majority of artifacts dated to the nineteenth century, with some domestic materials dating to the eighteenth century and a few to the seventeenth century. Prehistoric materials appeared to cluster in the southern portion of the site, but at low frequencies. The assemblage consisted of ceramics, flakes, bifaces, and a core, presumably associated with the Woodland Period.

The Phase II study concluded that the VanDeventer-Fountain House Site had the potential to provide additional significant information on the history and possibly the prehistory of the New York metropolitan area, and particularly Staten Island. Historical issues include the use of space within a farmstead on Staten Island during the eighteenth and early nineteenth centuries, the nature of rural consumer behavior, and how these farms were transformed into suburban villas and summer houses for the wealthy. It was suggested that the prehistoric component could provide data on the configuration of Woodland occupation in this area of Staten Island and how this occupation relates to regional Woodland settlement. Because of its research potential, the site was considered potentially eligible for listing on the National Register of Historic Places (Louis Berger & Associates 1985a:ii- iii).

C. DATA RECOVERY EFFORTS

Since the VanDeventer-Fountain House Site would be impacted by the proposed Naval construction activities, and given the presence of potentially significant archaeological remains as outlined in previous investigations, a data recovery program was developed that focused on research issues raised during the Phase II study (see Chapter II for detailed discussion). In order to address these issues, LBA designed a three-stage field program of archaeological data recovery, supplemented by additional historical research.

The field effort, which ran from October 5 to December 7, 1987, included: 1) hand clearing of the buried structural walls of the house and associated outbuildings; 2) mechanical stripping of the previously identified mixed yard deposits in order to locate additional structures, trash pits, deep features (e.g., wells, privies, and cisterns), and prehistoric remains; and 3) the placement of excavation units and backhoe trenches within the structures, associated yard areas, and features.

The walls of various structures were exposed by shovel-scraping. The house was found to consist of: 1) an irregularly shaped rectangular foundation (main structure), measuring 50 feet east-

west, by 30 feet north-south; 2) an eastern extension off the main structure (east bay), measuring approximately 30 feet north- south by 15 feet east-west; 3) a 10-foot-square stone foundation of an outbuilding (Feature 1), west of the main structure; 4) a 12-foot-square brick outbuilding (Feature 2) northwest of the house; 5) a cobble pavement/drain (Feature 3); 6) a possible privy (Feature 5), measuring approximately 5 x 8 feet; 7) a brick pavement immediately north of the main structure and Feature 1; 8) a brick cistern (Feature 4), measuring 6 feet in diameter, west of the house; and 9) a second brick cistern (Feature 6), located adjacent to and east of the east bay (Figure 1.6). Backhoe stripping the previously identified mixed surface deposits resulted in locating 1) two localized shell middens and a concentration of bottle glass north and west of the brick outbuilding (Feature 2); 2) two 4-foot circular stains and a series of wood posts south of the house; and 3) the extent of the relatively recent military disturbances north and southwest of the house foundations.

The placement of excavation units within the features produced a variety of artifactual material. The two shell midden trash deposits contained refuse dating from the late eighteenth to early nineteenth centuries, and are possibly associated with the VanDeventer/Fountain tenure of the property.

The three intact deep features were excavated to sterile subsoil or the bottom of each feature. The two cisterns, Features 4 and 6, appeared to be filled with demolition rubble from the destruction of the house associated with Henri Mouquin, a wealthy restaurateur. The material from both features contained similar assemblages dating to the turn of the twentieth century. The third deep feature, the brick-lined privy (Feature 5), contained several fill deposits, dating to the turn of the twentieth century. These fills overlay two domestic deposits. The upper deposit consisted of kitchen-related refuse that included ceramics, bottles, metal fragments, eggshell, large amounts of bone (mammal, bird, and fish), as well as enormous amounts of burned and unburned coal. The lower deposit was primarily domestic personal items dating to the late nineteenth century. Materials included ceramic toothpaste jars, ointment pots, tablewares, patent medicine, water and wine bottles, tumblers, buttons, combs, egg-shell, metal, and bone. These deep deposits also were associated with Mouquin ownership of the property.

Hand and machine excavation identified late nineteenth- to early twentieth-century fill deposits within the main structure and east bay cellars of the VanDeventer-Fountain house. These fills, consisting of loose unconsolidated building rubble and mortar, overlay burnt wood floors in both cellars. A 10 foot by 10 foot stone outbuilding foundation (Feature 1), east of the main structure, yielded various demolition deposits associated with the destruction of the house. The outbuilding contained a variety of burned materials overlying a brick cellar floor. Access to the

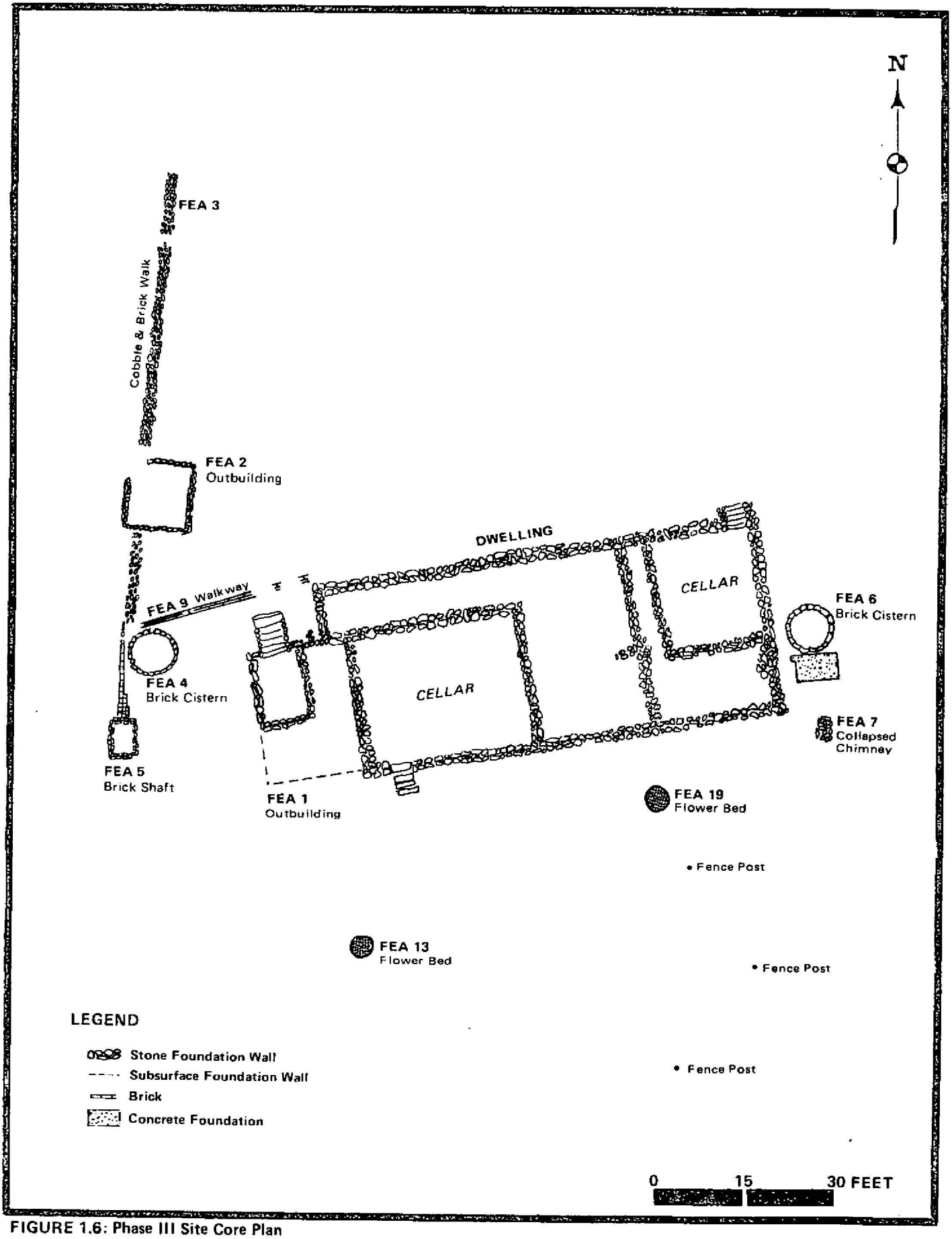


FIGURE 1.6: Phase III Site Core Plan

cellar was by brick and stone stairwell on the north side of the feature F(see Figure 1.6).

A late eighteenth- to early nineteenth-century horizontal yard deposit was identified during unit excavation, east and south of the VanDeventer-Fountain House. This deposit, exposed approximately 1.0 foot below surface, consisted of numerous bone fragments, ceramic sherds (e.g., creamware, redware, delft, and slipware), kaolin pipe fragments, bottle glass, buttons, metal fragments, oyster shell, nails, gunflints, as well as several prehistoric artifacts. The historic component of this assemblage was probably associated with the VanDeventer/Fountain tenure of the property. The prehistoric assemblage consisted of several lithic bifaces and flakes (quartz, chert, jasper, and argillite), one of which was a chert Rossville projectile point (ca. 500-100 BC). In addition, several fragmentary prehistoric pottery sherds were recovered, of which several exhibited cord-wrapped stick surface decoration (Late Woodland Period). The presence of the projectile point and the pottery sherds suggested that the prehistoric assemblage reflected a multicomponent occupation at the VanDeventer-Fountain House Site area. However, excavation did not locate any prehistoric features or identify any purely prehistoric contexts.

The following chapters detail the research approach, documentary and field efforts, analytical procedures, and results of the data recovery program undertaken at the VanDeventer-Fountain House Site. Chapter II presents an overview of research in rural historical archaeology and history, with an emphasis on recent work within the coastal New York region. The potential for data obtained from this project to contribute to the allied scholarly disciplines is also examined, thereby providing a broad discussion of this project's research significance. Chapter II includes a detailed discussion of the project's research design, outlining the major research concerns, research questions, data requirements, and methods to address the research questions. The historical data collected for this study are summarized in Chapter III. Chapter IV summarizes the methods and results of the archaeological field investigation. Chapter V details the analysis of the artifactual assemblage, and Chapter VI presents the analysis on household diet. Finally, Chapter VII includes the results of the historic research, field investigations, and data analysis as they relate to the project's primary research objectives.

II. RESEARCH DESIGN

A. INTRODUCTION

The Phase I and II historical background studies demonstrated that the VanDeventer-Fountain House Site served as a farm since the late eighteenth century, becoming a summer residence for a household(s) from New York City during the mid-nineteenth century. The site appears to have continued to function as a residence until the property was sold to the U.S. government in 1901. The background research also provided preliminary data on the occupants of the site. These occupants appear to be "wealthy" farming families, and then during the mid-nineteenth century, wealthy suburbanites who used the site as a summer residence.

Historical research conducted during Phase III investigations, which are discussed in Chapter III, refined these conclusions somewhat. Although they have, in the main, survived, LBA presently believes that the transition to an occasional residence, or one that was used on a part-time basis, may have occurred somewhat later in the nineteenth century than had been believed at the conclusion of the Phase II studies. Use of the site during the middle decades of the century may have been characterized by episodic occupations by tenants and/or different members of the Fountain family.

Several structures that existed within the site have been documented in late nineteenth century photographs. The overall form and style of the main house, as evident in these photographs, indicate that the structure could have been built during almost any period of the eighteenth century, although the house as shown was almost certainly the product of more than one building phase extending into the nineteenth century. The house appears not to have been built as a suburban villa, but instead represents the evolution of eighteenth century vernacular, rural dwelling to the rather different requirements of wealthy Victorians escaping from urban life.

The Phase I and II archaeological investigations of the site revealed intact structural features, which appear to relate to both the farming and summer residence uses of the property. The foundations of the main house, additions to the main house, and two associated outbuildings are extant. The main house also contains a cellar. Artifactual deposits within the site consist of an upper layer of mixed refuse and demolition rubble, ranging in date from the eighteenth to twentieth century, overlaying a second deposit of eighteenth and nineteenth century materials. The uppermost of these latter deposits appear to represent mixed refuse contexts. The lowermost deposit, which overlays sterile subsoil, is the least mixed of the site's deposits and contains predominantly eighteenth century materials with some dating to the early nineteenth century. This last deposit, and possibly

strata immediately above it, appear to represent a layer of sheet trash that may have been deposited on a yard surface(s). The artifacts are small in size and exhibit characteristics of materials exposed to the elements. These artifacts consist of domestic refuse (ceramics, bottle glass, smoking pipe fragments, bone, shell) and architectural materials (window glass, nails, brick fragments). The presence of this yard surface(s) suggested that other structural features not located during the Phase I and II efforts were extant within the site. Such features would include out-buildings, wells, privies, etc. The shovel testing interval used in both phases could have missed such features. The only efficient way to locate these features is by stripping the upper mixed deposits across the entire site, a technique rarely used in Phase II investigations.

Archaeological research in New York City and other cities (Rockman et al. 1983, Geismar 1983, Klein and Garrow 1984, Louis Berger & Associates, Inc. 1985b) has demonstrated the informational value of deep subsurface features. They often contain rich artifact-bearing deposits that can provide data on the consumer behavior and activities of the household(s) that discarded the materials into the feature. Of special importance is the high frequency of dietary materials that are often recovered from these contexts. These deposits are often some of the most important data sources for addressing many of the current research topics in historical archaeology, such as the nature of rural versus urban consumer behavior.

The informational value of deep, stratified features frequently resides in the temporal controls which permit assignment of the various strata to known historic occupational episodes. However, Lewis and Haskell (1981) have pointed out that the formation processes associated with these features may not have been as direct or as straight-forward as has been supposed. The accumulation of materials in the privy that they excavated at Middleton Place in Dorchester County, South Carolina, represented the reuse of the privy as a refuse disposal area during the abandonment of the site. As such, its potential to provide information relative to daily life was limited (Lewis and Haskell 1981: 44).

The sheet trash across the site also has some research potential. This context can provide data on the trash disposal patterns of rural farmsteads on Staten Island, which can then be compared to patterns found at other rural sites in the region. Such research provides data on how individuals in the eighteenth and early nineteenth century used space within their respective properties. King and Miller (1987) have recently developed an analytical approach to seventeenth-century materials recovered from the plowzone based on comparisons of artifact frequencies, categorized by function and by ware type, within tightly-datable middens and among several middens within the site. This approach enabled them to identify activity areas and changes in activity areas that appear to correspond to known changes in the uses of the

site. Additionally, Beaudry (1986) has called attention to the need to interpret archaeology broadly so as to include features of the historic landscape. Such mundane elements as gateways, fences, and drains can contain information important to reconstructing the historic uses of space. The main house and outbuildings can also provide information on the use of space within the property. Of special importance is how these structural elements may show the site's transformation from a rural farmstead in the eighteenth and early nineteenth century to a summer residence occupied by urbanites after 1880.

In addition to historic artifact materials, both the Phase I and II archaeological studies recovered prehistoric materials. These artifacts included lithic debitage, stone tools and ceramic sherds (i.e., associated with the Woodland Period). No intact prehistoric deposits were found, but the site has the potential to contain these types of deposits, in addition to subsurface features, such as hearths and trash pits. Therefore, the prehistoric artifacts from this site may provide data on the configuration of Woodland occupations in this area of Staten Island. The majority of archaeological research on Staten Island has focused on the western portions of the island. Study of the materials from the VanDeventer-Fountain House Site will contribute to the current Staten Island data base. Specific research topics may include settlement patterning and lithic procurement strategies.

Based on the results of the Phase I and II investigations, and on the current research concerns on both the prehistory and history of the New York metropolitan area, LBA has developed a series of research issues that were used to guide the data recovery program. These research issues are detailed in the following sections.

B. PREHISTORIC RESEARCH ISSUES

The prehistoric settlement of Staten Island is known through many years of collecting and several important site excavations. The earliest known occupation of Staten Island is represented by the Port Mobil Site. This Paleo-Indian occupation, dated ca. 8000 BC, has been interpreted as a small resource procurement encampment (Funk 1977; Eisenberg 1978). Although the Port Mobil Site presently overlooks the Arthur Kill, sea levels were lower during Paleo-Indian times and this waterway would not have existed when the site was occupied (cf. Edwards and Merrill 1977). The occupation represented at the Port Mobil Site probably represents a hunting camp rather than a marine-oriented gathering station. The artifact assemblage included fluted points, unfluted trianguloid points, scrapers, knives, borers, and gravers.

The distance from high-quality lithic sources may have limited the extent of Paleo-Indian occupation in coastal New York (cf. Gardner 1977; Goodyear 1979). Other Paleo-Indian sites in the

region may have been destroyed by coastal geomorphologic changes that occurred subsequent to this cultural period. Given the scarcity of known Paleo-Indian remains from the area, the potential for recovering Paleo-Indian remains from the project area is considered low.

Environmental climatic changes at the end of the Pleistocene and early Holocene necessitated adjustments in human settlement and subsistence patterns. The Archaic period is characterized by small groups of hunters-and-gatherers who relocated their settlements often in response to resource availability.

Several Early Archaic sites have been identified on Staten Island. The Old Place Site, the Ward's Point Site, and the Richmond Hill Site all produced Kirk components. In addition, the Richmond Hill Site produced a Palmer component. Radiocarbon dates associated with the Kirk components range from 5310 BC to 6300 BC. A radiocarbon date of 7410 BC from Richmond Hill is probably associated with the Palmer occupation (Ritchie and Funk 1971, 1973:38-39).

Middle Archaic remains are extremely rare on Staten Island. This is partly indicative of low population density in the region during this time and partially the result of unclear typological definitions for this period. So little is known about the Middle Archaic occupation of the region that it is often linked with either the Early or Late Archaic in discussions of prehistory (Kraft and Mounier 1982). Several Kanawha and LeCroy-like points have been recovered from the Ward's Point area of Staten Island (Jacobson 1980:56).

Late Archaic sites, which are more common on Staten Island, are characteristically situated on tidal inlets, coves, and bays. These site remains reflect greater population density and new adaptive patterns. Site location and contents suggests that Late Archaic hunter-gatherer groups exploited various marine resources, including shellfish and fish. Changes that occur in Late Archaic toolkits reflect a broadening of resources used; these changes include the manufacture of fishing gear, such as net-weights and fishhooks, and an increase in the use of groundstone and cobble tools (Ritchie 1980:143). The increased utilization of marine and estuarine resources at this time is associated with the stabilization of coastal environments (Edwards and Merrill 1977).

The Archaic remains found on Staten Island are chiefly represented by the narrow point tradition, which includes Poplar Island and Bare Island types. Links with these cultural traditions suggest affinity with the Middle Atlantic region through New Jersey (Ritchie 1980:145). Many of the points characteristic of the Late Archaic occupation of Staten Island are made of argillite, which does not occur locally. The nearest source of this material is within the Lockatong Formation of central New Jersey, which is exposed above and below the Palisade Sill south

of the George Washington Bridge (Didier 1975). Other artifacts associated with so-called Bare Island components on Staten Island include bannerstones, steatite bowls, grooved axes, and cylindrical pestles and hammerstones (Ritchie 1980:149).

The Terminal Archaic period, ca. 1300 - 700 BC, is represented by the introduction of soapstone vessels and distinctive fishtail type points. A complex mortuary tradition associated with Terminal Archaic sites on Long Island, however, has not been identified to date on Staten Island. Terminal Archaic sites on Staten Island have been associated with shell middens (Silver 1984). The appearance of shell middens, which is characteristic of subsistence practices in coastal areas of New York, continues through the Woodland period.

Woodland occupation on Staten Island is characterized by the introduction of ceramic technology. Changes in pottery temper, vessel form, and surface treatments are useful chronological indicators. The earliest ceramics recognized in coastal New York are grit-tempered wares similar to Vinette I. Middle Woodland ceramics include shell-tempered wares with cord and net impressions; Late Woodland ceramics include various collared vessels with incised, as well as dentate and cord-marked, decoration.

While Early Woodland occupants appear to have followed a hunting and gathering lifeway, plant cultivation became increasingly important during the later Woodland periods. Changes in subsistence practices and population growth led to settlement agglomeration which culminated in the appearance of villages. Several researchers have examined how agricultural practices in coastal New York during the late prehistoric and contact period effected settlement patterns (Ceci 1979, 1982; Silver 1980).

The Burial Ridge Site, located in the Tottenville section of Staten Island, provides a good example of the range of occupations that can occur within a single archaeological site. Collections from Burial Ridge include a large variety of projectile point types, dating from the Early Archaic through the Late Woodland. The various ceramic wares that have been recovered are diagnostic of all phases of Woodland occupation. Frequencies of types indicate that the most intensive prehistoric occupations of this site area occurred during the Late Archaic and Middle through Late Woodland periods (Jacobson 1980).

Likewise, a collection of Native American artifacts from the vicinity of Fort Wadsworth, housed at the Staten Island Institute of Arts and Sciences, consists of 186 stone artifacts and 13 sherds that represent a wide spectrum of time. Projectile point types within this collection indicate utilization of the area from at least 3000 BC. until ca. AD 1500. Ceramic types identified in this collection represent the entire span of Woodland occupation (Department of the Navy 1984:C-6).

Skinner, who produced the earliest summaries of Native American sites and collections on Staten Island (Skinner 1903, 1906, 1909a, 1909b, 1912), recorded several aboriginal sites in the Arrochar area of Staten Island, which is in the vicinity of Fort Wadsworth; however, little is recorded about these sites except their location. During the 1960s, avocational archaeologists located prehistoric remains associated with a pit feature just outside the western boundary of Fort Wadsworth. These remains included over 200 ceramic sherds, as well as triangular and side-notched points, net-sinkers, a full-grooved axe, and a bone fish-hook (Anderson and Sainz 1965). Most of the prehistoric ceramics and the triangular points are representative of Late Woodland occupation; the remaining artifacts, for the most part, appear to date to the Early and Middle Woodland.

Phase I cultural resource investigations at Fort Wadsworth, under the direction of Dr. Bert Salwen, New York University, located several prehistoric artifacts in the area of the VanDeventer-Fountain (Fountain-Mouquin) house. These artifacts, from Test Area D, included a fragment of a basalt pestle, a flaked chert pebble, three flakes, and several sherds of Native American ceramics. These remains, like all of the other Native American specimens located during this survey, were sparse and widely separated (Department of the Navy 1984).

Phase II investigations of the VanDeventer-Fountain Site, conducted by LBA in 1985, recovered a total of 26 prehistoric artifacts. This collection included 3 argillite bifaces, 1 quartz core, 18 flakes, 3 ceramic sherds, and 1 bead. All but one of the flakes were of chert or jasper; the remaining flake was of argillite. One of the sherds was clearly tempered with shell, which is characteristic of ceramic wares dating to the Middle to Late Woodland periods. All of the prehistoric artifacts recovered from Phase II testing, with the exception of two flakes, occurred in association with historic and/or recent materials. No artifact clusters or features were identified; however, most of the prehistoric remains were recovered from the southern portion of the site (LBA 1985:39-41).

The baseline prehistoric research and results of Phase I and Phase II testing of the VanDeventer-Fountain Site area provided a framework for developing a Phase III research design. The following questions are presented for evaluating the significance of the prehistoric materials that may be preserved at the site.

> What prehistoric periods are represented at the VanDeventer-Fountain Site? Are there any features and/or intact deposits that can be associated with particular periods of occupation?
>
> What types of occupation are represented at the site? Is there evidence that utilization of the site changed through time?

What portions of prehistoric settlement systems are represented by the archaeological deposits located at the VanDeventer-Fountain Site?

Are any subsistence remains preserved and, if so, what types of environments and activities do they represent?

How do the cultural remains at the VanDeventer-Fountain Site compare with other known prehistoric sites on Staten Island and the Middle Atlantic region?

What aspects of group interactions and/or population movements are represented by the archaeological remains at the site?

C. HISTORICAL RESEARCH ISSUES

The Phase III investigation of this site offers an excellent opportunity to examine issues relating to consumer behavior and use of space in several comparative frameworks. These frameworks comprise the urban-rural continuum (cf. Zierden 1985) and possible expressions of status in the layout of the late eighteenth-early nineteenth century farmstead. Discussion of issues relating to the urban-rural continuum are most likely to be addressed through analysis of consumer behavior whereas issues related to the treatment of space are obviously approached through architectural remains.

Louis Berger & Associates analysis of the Thomas Hamlin Site in northwestern New Jersey concluded that a prosperous farmer expressed his high status (defined by his social, economic, and political position relative to his neighbors) not through acquisition of household consumer goods but through acquisition of additional land and livestock and possibly by enlarging the dwelling house (Louis Berger & Associates, Inc. 1986). The Hamlin site dated to the late eighteenth-early nineteenth century and the results of this analysis are thus comparable to the data potentially to be retrieved from the VanDeventer-Fountain Site.

The VanDeventer-Fountain Site is much closer to a major urban center than the Hamlin Site was and thus if differences are discerned between the assemblages, these differences might be ascribed to proximity to New York City. Baugher and Venables (1986) argue that market access and hence consumer behavior, as expressed primarily in tablewares, was affected by socio-economic status and by political events (e.g., the Revolutionary War) but not by distance. It should be observed in this regard, however, that proximity to New York City may have affected tastes and preferences. A full range of goods was available to residents of northwestern New Jersey, but the Hamlins appeared to have made a decision not to purchase the majority of the available durable goods (e.g., procelain dishes). Thus, consumer choices may be

reflective of mindsets, which were, in turn, affected by proximity to urban places.

The Charleston Museum has investigated several urban and rural sites in Charleston and the adjacent rural parishes. Zierden (1985) has suggested that the variation between urban and rural behavior should be viewed as a continuum rather than as a dichotomy. She has further argued that the country plantations may not have been as elaborate as the planters' town homes where social competition may have driven conspicuous consumption in architecture and furnishings as well as in dress and diet. The setting of the VanDeventer-Fountain Site, on Staten Island where it is separated by water from New York City, resembles the geographical relationship between Charleston and the outlying plantations. Numerous sites that have been excavated in New York City afford the opportunity to examine this continuum in a northern setting. Not only are differences between the urban sites and the VanDeventer-Fountain Site interesting but the nature and magnitude of these differences can be profitably compared with those that have already been addressed in Charleston.

It is entirely possible that the dynamic that Zierden described in the South Carolina Low Country surrounding Charleston will not be replicated in this part of the Greater New York area. This may be due to the socio-economic difference between the occupants of the VanDeventer-Fountain Site and the Low Country planters who maintained homes in Charleston as well as on their plantations. Occupants of the VanDeventer-Fountain Site were probably year-round residents. On the other hand, the continuum that Zierden has posited may, in fact, be specific to Southern cities and their surrounding plantations, given the historical circumstances that resulted in an urban elite that was composed of the elite planters whose families were bound in a web of marriages.

Considerable work has been done on the spatial arrangements of farmsteads. For example, Manning (1984) has examined a series of variables associated with the spatial arrangement of farmsteads in the New Jersey inner coastal plain. These variables include layout, style of barn, direction of orientation, ethnicity of owners, size, construction materials, and presence of tenant houses (Manning 1984:54-66). In her survey of extant farms in the inner coastal plain, Manning found that the majority of the farms appeared to be organized around courtyards (Manning 1984:66).

Phase II studies of the VanDeventer-Fountain Site suggest a more formal arrangement of structures, with the dwelling house prominently situated overlooking the water where it commanded an imposing view. In this regard, it is similar to the siting of southern plantation mansions, which, like this site, combined somewhat ceremonial functions with agricultural utility. The Hamlin dwelling house, by way of contrast, was not placed in a physically prominent position, and the arrangement of the buildings was similar to that associated with an ordinary farm, as described by Manning (1984). Like the earlier discussion of con-

sumer behavior and values, the siting of the dwelling house at the VanDeventer-Fountain Site potentially reflects a more sophisticated system of values, obtained either because of the family's status or because of the proximity to New York City.

Yet another spatial expression of the relationship between urban and rural settings is associated with the transition of the property from farm to villa. In the second quarter of the nineteenth century, urban families began to establish summer/weekend homes in nearby rural areas in Brooklyn and on Long Island and Staten Island. This transformation occurred at the VanDeventer-Fountain Site after about 1880, based on Louis Berger & Associates' Phase III historical investigation of this property. (It had earlier been hypothesized that this shift took place after 1845. Upon further reflection, the ambiguities in the existing information preclude assigning this transition to the mid-nineteenth century although it is possible that it, in fact, occurred before 1880, when part-time use is known to have characterized the occupation of the property.) The specific manifestations of this transformation, which presumably affected the entire complex as well as the dwelling, will be discussed in the next chapter (III); at this point it should be observed that these transformations in the use of space can be interpreted from the perspective of the urban-rural continuum, which dominate the analysis of both artifactual and architectural remains dating to the late eighteenth and early nineteenth centuries. Creation of villas where there had formerly been working farms occurred as part of the expansion of the influence of New York City, which culminated in incorporating all of Staten Island into the Borough of Richmond.

Based on these considerations and on prior work that has been conducted at this site, the following research questions have been posited. These questions guided the Phase III field effort.

Research Question 1:

Was the consumer behavior of the occupants of the VanDeventer-Fountain Site similar to that associated with the contemporaneous Hamlin family (i.e., late eighteenth-early nineteenth century)?

Research Question 2:

> Was the consumer behavior of the occupants of the VanDeventer-Fountain Site similar to that defined for contemporaneous households in New York City?

Research Question 3:

> Based on a review of the literature on Charleston, is the comparison between urban and rural sites in Southern settings similar to or different from the similarities or variations observed in the Greater New York area?

The data base required to examine these research questions is predominantly archaeological. Consumer behavior will be measured in terms of the types, variability and economic value of the materials recovered from the VanDeventer-Fountain House Site. The results of these measurements will then be compared to similar data sets from other archaeological sites, including the Hamlin farmstead in northwestern New Jersey (Louis Berger & Associates, Inc. 1986) and sites in New York City (e.g., Barclays Bank, 175 Water Street, Telco Block, and the Assay Site (cf. Louis Berger & Associates, Inc. 1987)). Information on the sites in Charleston, South Carolina will be obtained from published reports by Zierden and others (e.g., Zierden and Hacker 1987).

"Consumption" involves types and costs of food remains, food service and preparation items, and other goods. "Consumer behavior" refers to how individuals and households purchased, used, and disposed of material goods. In this study of consumer behavior, it is assumed that the quality, quantity and variability of material goods recovered from deposits result from the types of consumer actions that a household chose to follow (Klein and Garrow 1984). The proposed consumer behavior study will examine similarities and differences in the quality, quantity, and diversity of artifactual assemblages (cf. Shephard 1983), associated within the VanDeventer-Fountain Site households over time.

"Quality" is defined in terms of cost. When possible, a Miller analysis (Miller 1980) will be conducted on the assemblage to identify the economic value of ceramic materials. Additional techniques to identify quality will be used such as identification of ceramic sets (cf. Klein and Garrow 1984).

Quantity of materials consumed by a household involves the number of artifacts within functional groups (kitchen vessels, teaware, storage vessels) and presence of specific artifact types (i.e., personal items, horse tack, tools). Analytical procedures to identify functional groups and artifact types will include South's pattern analysis (South 1977), and a minimum vessel count (cf. Klein and Garrow 1984). South's pattern analysis and frequencies of artifacts by functional group will also be used to measure the variability of artifact types within a household assemblage.

Archaeological data will therefore be derived from: (1) pattern analyses (cf. South 1977) of artifact assemblages from the domestic activities of rural and urban households, (2) analyses of vessel form and function, (3) identification of dietary patterns, and (4) economic scaling of ceramic assemblages. The latter involves the Miller analysis (Miller 1980), set analysis (cf. Klein and Garrow 1984) and a study of porcelain costs. Investigation of dietary patterns is based on the types of floral and faunal remains within the domestic assemblages, the frequency of these materials, the proportion of different genera and species, and the types of manmade modifications exhibited by these materials.

Analysis of vessel form and function is rather straightforward. This involves grouping of glass and ceramic vessels into accepted form (e.g., plate, bowl, tea cup, bottle, vial) and function (e.g., pharmaceutical, food serving, hygiene) categories (cf. Biedleman et al. 1983, Klein and Garrow 1984). Pattern analyses simply follows the format established by South (1977), making modifications where necessary. Comparisons are made at both the artifact group and class levels. In addition, household assemblages from several urban sites in New York City will be used as comparative data in an attempt to address the issue of rural versus urban consumer behavior.

Historical research required to address these topics included the search for probate records and the delineation of the structure of the households that occupied the site. The nature of these households was placed within the context of contemporary society on Staten Island and the greater New York area. This effort has, however, been limited to available descriptions; no original contextual research has been undertaken. Historical research during this data recovery program complemented the results of the Phase II investigations, providing a fairly detailed reconstruction of the site's occupancy history, and the size, age structure, composition, and income level of the site's households.

The remaining research questions examine the issue of the spatial arrangement of the farmstead over time.

Research Question 4

> Does the relationship between the dwelling and the dependencies, outbuildings and barns reflect, in the late eighteenth and early nineteenth centuries, purely functional considerations; or does the position of the house relative to the setting evidence formal, architectural considerations?

Research Question 5

> What is the evidence of the functional transformation of the site from a farm to a seasonal residence for urban dwellers?

Again, the data sets required for these questions are primarily archaeological. The data recovery program should provide information on the lay-out of the farm, and possibly the date of extant structures associated with both the farm and summer residence phases of the site. In addition to the plotting and dating of structural elements within the site, LBA will examine the distribution of refuse across the farmstead. Refuse disposal patterns may provide data on the existence of activity areas within the site that may not be evident in the extant structural remains. Landscaping features are still another aspect of the farm's spatial arrangement that will be studied.

Historical data requirements for these two research questions consisted of any documentation on the internal configuration of and activities present at the farm and summer residence. Some data were found in tax records, deeds, and maps but the input of the historical research component to this set of issues has been relatively slight.

III. HISTORICAL RESEARCH

A. METHODS

Phase II historical research established the site's historic context and chronology of occupational episodes. Subsequent investigations conducted as part of the Phase III effort elaborated upon these results particularly with regard to the eighteenth- and late nineteenth-century occupations, periods during which the property was occupied as a working farm and as a country villa. During the middle decades of the nineteenth century, the 3.95-acre property, then known as Fountain's Cottage, was owned jointly by several heirs of Herman Fountain, who himself had inherited it from Cornelius and Elizabeth VanDeventer Fountain. The property is believed to have been leased during this time, although James Guyon Fountain's household was associated with it at least on a part-time basis from 1870 through 1875. Henri Mouquin, who occupied the property from about 1881 through 1901, was a wealthy New York City restaurateur, who apparently maintained a year-round presence at this location.

Research was conducted at the New York Public Library (Genealogy and Local History Section), the Staten Island Institute of Arts and Sciences, Richmond County Clerk's Office, and the New York Historical Society.

B. HISTORICAL CONTEXT

From 1661 to 1664, Staten Island was part of the Province of New Netherlands. Early efforts at European occupation under David Pietersen DeVries (1639-1641) and Cornelius Melyn (1641-1643; 1650-1655) met resistance from the aboriginal population resulting in the "Peach War" of 1655, which drove Europeans from the island. In 1662, a cluster of dwellings and a small blockhouse were established on a site above New York Bay, a short distance south and west of the high ground overlooking the Narrows. This settlement became known as Oude Dorp, or Old Town, and was located a short distance south of the project area. The settlers, who were chiefly Dutch and French-speaking refugees from the Palatinate, thrived, using the flat lands for crops and the uplands for pasturage (Goldstone and Dalrymple 1976:471; Black 1982:9, Bayles 1887:58; Leng and Davis 1930:104).

Great Britain seized the Dutch colony in 1664, and the Native American claims were extinguished six years later. The county of Richmond, comprising the entire island, was created in 1683. Settlement increased rapidly, drawing upon Dutch, Huguenot, and English sources. It developed as an agricultural and fishing area with the county seat of Richmond Town emerging as the principal village. Products included beef, pork, wheat, rye, and apples, as well as fish, oysters, and clams. Salt hay was harvested from the

salt meadows in Northfield, Southfield, and Westfield Townships. Despite the diverse origins of the original European inhabitants, the English had achieved a majority by the middle of the eighteenth century (Akerly 1843; Bayles 1887).

In July of 1776, British forces landed on Staten Island and established a military rule that lasted until the close of the Revolutionary War in 1783. The island served as a staging area for British forays into Long Island and New Jersey and as a source of produce, wood, and fodder for the military and civilian population on Manhattan (Cohn 1962; Black 1982). The British established an artillery post, including a star-shaped fort and several smaller, supporting positions, at the point of the Narrows, called "Flagstaff Hill" (Black 1982:23-25). With the end of the war, these defenses were abandoned. The State of New York acquired this site in 1794 as part of their plans for a comprehensive system of defenses for New York Harbor. Interest flagged but then revived in 1807 under joint state and Federal auspices due to increased hostility between the United States and Great Britain. Additional land was purchased and a water battery, Fort Richmond, was built on the Point by 1810. A pentagonal casemate fort, Fort Tompkins, was built on Flagstaff Hill in 1814 (Black 1982:38-44). This is located northeast of the project area.

Following the War for Independence, residents of Staten Island initially re-established the Colonial agrarian socioeconomic system. However, in the 1830s, wealthy New Yorkers "discovered" the island and created fashionable bathing resorts and summertime retreats along the shoreline areas. As transportation modes improved, communities, such as New Brighton, Stapleton, and Clifton, gradually developed into year-round suburbs for New Yorkers, many of whom spent at least part of the week in the city and part of the week in the country. This transition, from farms to suburban villas, as these rural retreats were known, was facilitated by real estate developers like Daniel Low, who established the Staten Island Association to encourage development along the eastern shore. In some cases, farmhouses, like the Austen House at Clifton, were remodeled as Victorian "cottages" (Goldstone and Dalrymple 1976:473; Louis Berger & Associates, Inc. 1983:33). By the early 1840s, the eastern shore of Staten Island as far as Fort Richmond was "almost a continuous village...occupied by country seats and town plots" (Akerly 1843:199). Within a decade, the strip containing the project area was occupied by a series of hilltop and waterfront estates. This community was variously known as Clifton, Stapleton, and Arrochar (Bornet 1854; King 1959).

The 1840s also witnessed the expansion of the military presence at the Narrows. The Federal government acquired the state lands in 1847 and expanded the reservation in a series of transactions in the late 1840s and 1850s. This was accompanied by a building program that resulted in Battery Weed, a second Fort Tompkins, and quarters for the troops. Another period of expansion occur-

red after 1892. Ten transactions between 1892 and 1901 more than doubled the size of the facility, and the massive Endicott-era batteries, which commanded the view over New York Bay south of the Narrows, replaced the dwellings that had lined the shoreline. The gatehouses on Richmond Avenue, symbols of the nineteenth-century suburban occupation, were subsequently converted to military housing.

C. SITE HISTORY

Most of the land now included in the Fort Wadsworth military reservation is believed to have been contained in grants belonging to Thomas Walton and Thomas Stilwell, which dated to the late seventeenth century. John VanDeventer subsequently gained control of the area (Black 1982:21). By the era of the American Revolution, the point overlooking the Narrows immediately southeast of the Fort was labeled "Vanderventer's [sic] Point" (Figure 3.1). VanDeventer evidently moved to Staten Island between 1730, when his child was baptized in a Dutch Reformed Church in New York City, and 1734, when his father-in-law's will described him as a "Gent[leman] of Richmond County" (VanDeventer 1943:229; New York Historical Society 1895:144-45).

John VanDeventer (1697-1758) was the third generation of a Dutch family, whose progenitor, Jan Pierterz van Deventer, migrated to New Netherlands prior to 1692. Cornelius, John's father, was born in New Utrecht on Long Island before 1666; he may have left Long Island for a new farm on Staten Island since his wife Anna Jan van Thuyl was resident of the island (Van Deventer 1943:229; Bradley 1947:76-93). On the other hand, it was not uncommon for the economic and social connections of Dutch families to span locations in Manhattan, Staten Island, and Long Island. Indeed, John VanDeventer himself continued to buy property in lower Manhattan after he is believed to have established his permanent residence in the vicinity of the project area (John Vandeventer to Abraham Huisman, November 22, 1739, DePeyster Papers, Vol. XIII). At the time of this transaction, he was described as a "shipbuilder."

His connection with Staten Island was strengthened, however, by his marriage to the daughter of Abraham Lakermans, who lived on a "plantation" in the vicinity of Old Town, or Ould Dorp. Lakermans, too, held property in Manhattan but the center of his interests was clearly Staten Island where he had a mill, as well as his principal residence. In a time in which marriage and family defined spheres of social and economic influence, it is telling that the husbands of three of Lakermans's daughters resided on Staten Island and that the home farm was divided among the three women after his death (New York Historical Society 1895:144-45).

John VanDeventer was survived by four children: Abraham (d. prior to 1768); Cornelius (d. 1786); Catherine; and Ann, who

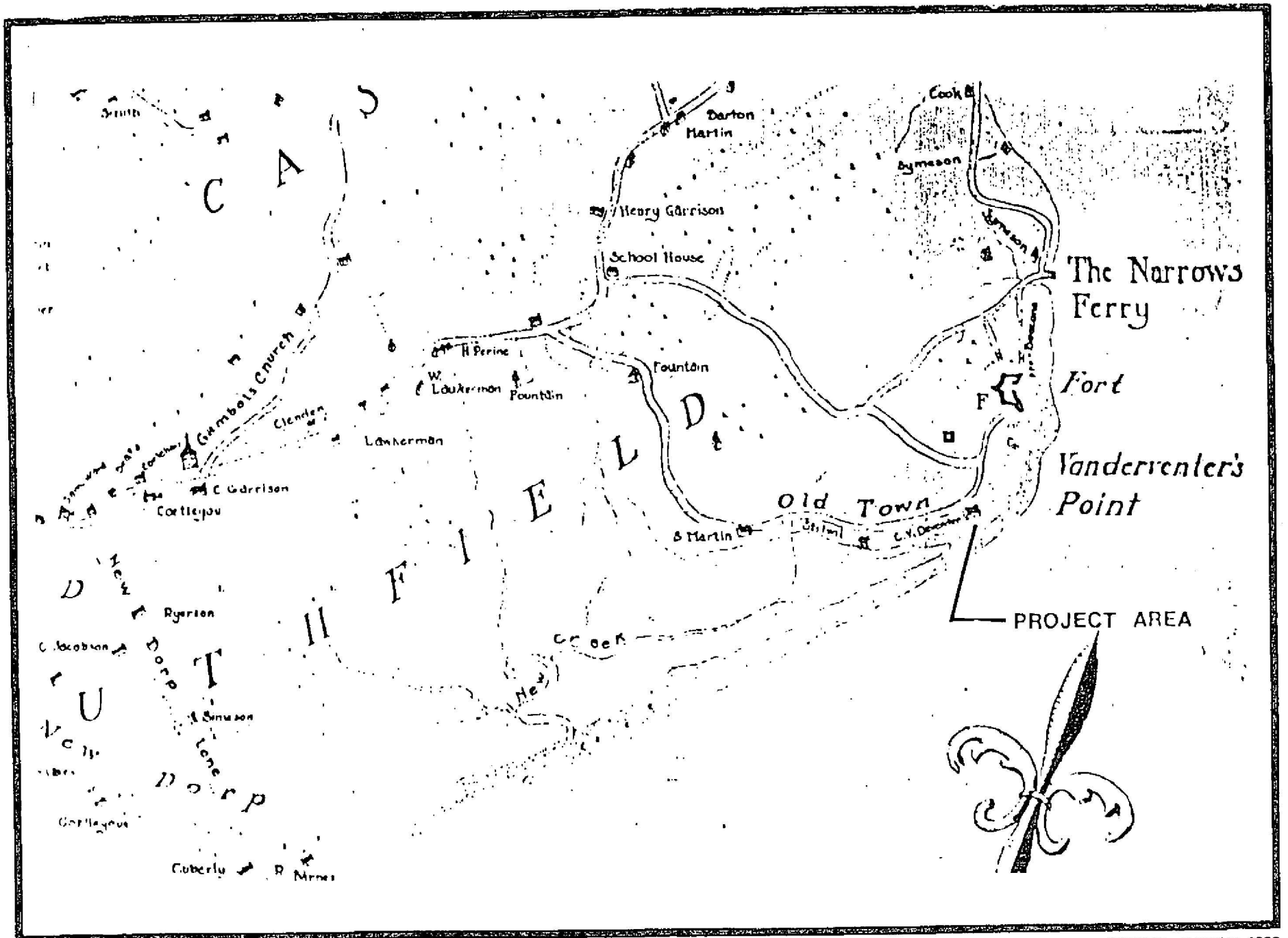


FIGURE 3.1: Project Area and Vicinity, 1775-1783

SOURCE: McMillan, 1933

married Christian Jacobson in 1766. Abraham married Mary Simonson on January 18, 1763, and died within five years, survived by his widow and a daughter, Elizabeth; his brother Cornelius died in 1786 without issue. Abraham and Cornelius had inherited their father's farm which they appear to have operated jointly. Cornelius, left in possession of the entire property when his brother died, bequeathed the one-half of the property that had belonged to his brother to his niece Elizabeth and one-half to his sisters Catherine and Ann. The tract was divided into two roughly triangular parcels, and much of the northeasterly tract, which had descended to Catherine and Ann, was gradually subsumed into Fort Wadsworth. Elizabeth and her husband Cornelius Fountain, whom she had married in 1784, are believed to have occupied the southwesterly tract overlooking the bay where the main farm complex was located (New York Genealogical and Biographical Society 1909:IV:170; New York Historical Society 1906:54; Bradley 1947:76-193; VanDeventer 1943:229; Richmond Co. Wills, Bk. 8, p. 298; Black 1982:30, 44, 109).

Cornelius Fountain was a member of a large and prominent family on Staten Island. His immediate family, however, occupied land historically owned by his wife's family, the VanDeventers. Cornelius appears in the 1790 Federal census, where his household consisted of one adult male (i.e., Cornelius); one minor male (i.e., his son Abraham VanDeventer); two females (i.e., his wife Elizabeth and daughter Hannah); and four slaves (U.S. Government Printing Office 1908). Ownership of slaves, while certainly not unknown in this region, was relatively rare and on the eve of American independence tended to characterize people of relatively high social and economic status (Jones 1980:205). By 1800, the household had expanded to 17 persons: Cornelius, Elizabeth, Hannah, Abraham, and a new daughter Maria; plus a man and woman over the ages of 45; a woman between the ages of 16 and 26; a teenage boy between the ages of 10 and 16; three boys under the age of 10; 5 slaves, and 1 "other free person" (U.S., Bureau of Census 1800). The household decreased in size between 1800 and 1810. Abraham, who had been given a portion of the farm to work on his own, appears to have left his father's household, which comprised Cornelius and Elizabeth, Hannah and Maria, an unidentified boy between the ages of 10 and 16, and four slaves (U.S., Bureau of Census, New York State 1810; Richmond Co. Deeds, Bk. G, p. 447).

Elizabeth Fountain died in 1813 and Cornelius died two years later. Their son Abraham advertised the property for sale with intent to partition it as part of the disposition of his father's estate. In June of 1815, it was described as a farm comprising about 100 acres, located at the Narrows, and being "in possession" of Abraham "V.D." Fountain (New York Gazette and General Advertiser, June 22, 1815, Staten Island Historical Society). Another notice, dated November 2, 1816, described Abraham as a "tenant on land of Cornelius Fountain, dec'd" (Commercial Advertiser, November 2, 1816, Staten Island Historical Society). Whether the land was ever partitioned among the heirs is not

clear, which may have occasioned the disputed and conflicting titles that characterize land transactions associated with the project area in the middle decades of the century.

By 1820, Abraham had married Mary Guyon and established a family. In addition to themselves, their household in that year included a woman between the ages of 16 and 26 (possibly his sister Maria), a teenage girl between the ages of 10 and 16 (perhaps their daughter Eliza), a boy under the age of 10 (probably their son William Austin), and four slaves (U.S., Bureau of Census 1820). One person was reported as being engaged "in commerce."

Between 1820 and 1830, both Maria and Eliza left Abraham's household. In the Federal census of 1830, Abraham reported an eight-person household, which included himself; his wife Mary; sons William Austin, James Guyon, and Herman; daughter Anna; and two unidentified females, one between the ages of 10 and 15, and another between the ages of 16 and 20 (U.S., Bureau of Census 1830). Abraham died three years later, leaving his wife; three adult children: William, James, and Eliza Fountain Stephens; and two minor children, Herman and Anna (Richmond Co. Deeds, Bk. 10, p. 316).

Mary Guyon Fountain held on to the property for at least two years after her husband's death. In the New York State Census of 1835, "Widow M[ary] Fountain" reported an eight-member household which included 4 men and 4 women. One of the men was eligible to vote and one person, either a man or a woman, was "Colored" and not subject to tax. She reported, in addition, 115 acres of improved land, 14 neat cattle, 3 horses, and 9 hogs (New York State 1835).

Although the disposition of Abraham's estate is not entirely clear, it is obvious that between 1835 and 1842, it was partitioned into a series of smaller parcels, some containing less than 10 acres each. Prior to 1842, a part of the Fountain farm lying on Ravine Road appears to have come into the possession of Eliza Fountain Stephens, and her husband, who sold it that year to David Hagg (Richmond Co. Deeds, Bk. 10, p. 316). In September of 1843, another parcel, containing about eight acres, which had been mortgaged, was purchased at the Merchants Exchange in New York City for Mary Fountain (Abraham's widow) and her children William, James, Herman, and Ann. The parcel was conveyed to them in a deed dated October 6, 1843 (Richmond Co. Deeds, Bk. 10, p. 316).

In 1845-1846, a tract described as the "Fountain Farm" was partitioned into at least four lots, each of which extended from Richmond Road to the bay. Lot #3, which contained 6.87 acres and a dwelling house, was assigned to the second son, James Guyon Fountain, a New York City commission merchant (Richmond Co. Deeds, Bk. 15, p. 446; Doggett's New York City Directory 1845-46:135; 1846-47:145; 1847-48:154). Rights to this lot appear to have been transferred to his younger brother Herman, who sold the

northern portion of the lot, fronting Richmond Road, to Philip Schieffelin in 1852 (Richmond Co. Deeds, Bk. 25, 639). Unfortunately, the Blood map (1845) only labels the property as belonging to the "Fountains Heirs" (Figure 3.2) and the Butler map (1853) identifies it as "Fountain" (Figure 3.3). Herman Fountain was, however, listed in the 1850 Federal census as a resident of Southfield. He was then 25 and lived with a 70-year-old Black man named Coffee Lang (U.S., Bureau of Census 1850). Herman attempted to sell the remainder of this lot to Sarah Jenkins in 1853 but the deal appears to have fallen through (Richmond Co., Deeds, Bk. 31, p. 644; Bk. 32, p. 274).

Part of the transformation of the property from a working farm to a villa involved remodeling the dwelling as well as subdividing the real estate. A photograph of the structure, taken at the end of the century (Plate 3.1), shows a vernacular "Dutch" or "Flemish" main block of plastered masonry with an eighteenth-century style gambrel roof, the flared eaves of which are supported by wooden posts, thus creating a long veranda. Similar frame appendages, representing other phases of construction, are attached to each gable end, resulting in the linear, "additive" composition characteristic of much eighteenth- and early nineteenth-century vernacular construction in the New York-New Jersey area. Mid-nineteenth-century "modernizations" appear in the pedimented roof dormers, the sidelights flanking the entrance, and the elongated windows extending nearly to floor level in the main block facade. Partial confirmation of the dating of these changes is obtained from the 1854 bird's eye view of this area, which shows a series of elaborate residences in this vicinity in addition to the VanDeventer/Fountain house (Figure 3.4).

Herman died around 1860 and the property reverted to James Guyon Fountain, who may have used it as a country home although it was leased for a three-year period between 1872 and 1875 (Richmond Do., Deeds, Bk.96, p. 555). The 1873 Beers atlas, however, associates the property with "G. Fountaine" (Figure 3.5). This may be James Guyon Fountain, who was known by his middle name. At age 47 in 1870, Guyon Fountain described himself as a "Broker." He lived with his mother Mary, age 76; sons Guyon and Emile, ages 18 and 12, respectively; daughters Marnie (age 16) and Anna (age 11); and one domestic servant, Bridget Malyon (U.S., Bureau of Census 1870). Fountain appeared in the 1875 New York State Census, where he reported himself as a ship broker who worked in New York. His mother had died, but three daughters still lived with him (New York State 1875).

In 1875, Elizabeth Fountain Stephens, the oldest of the five children of Abraham VanDeventer and Mary Guyon Fountain, acquired sole rights to the 3.75-acre lot, called the "Fountain Cottage Property" (Richmond Co., Deeds, Bk. 110, p. 485; Bk. 131, p. 54; Bk. 129, p. 60, p. 287; Bk. 130, p. 264). She sold it to her daughter Mary who, in turn, sold it to Henry (usually spelled "Henri") Mouquin, a resident of New York City (Richmond Co.,

SOURCE: Blood, 1845

FIGURE 3.2. Project Area and Vicinity, 1845

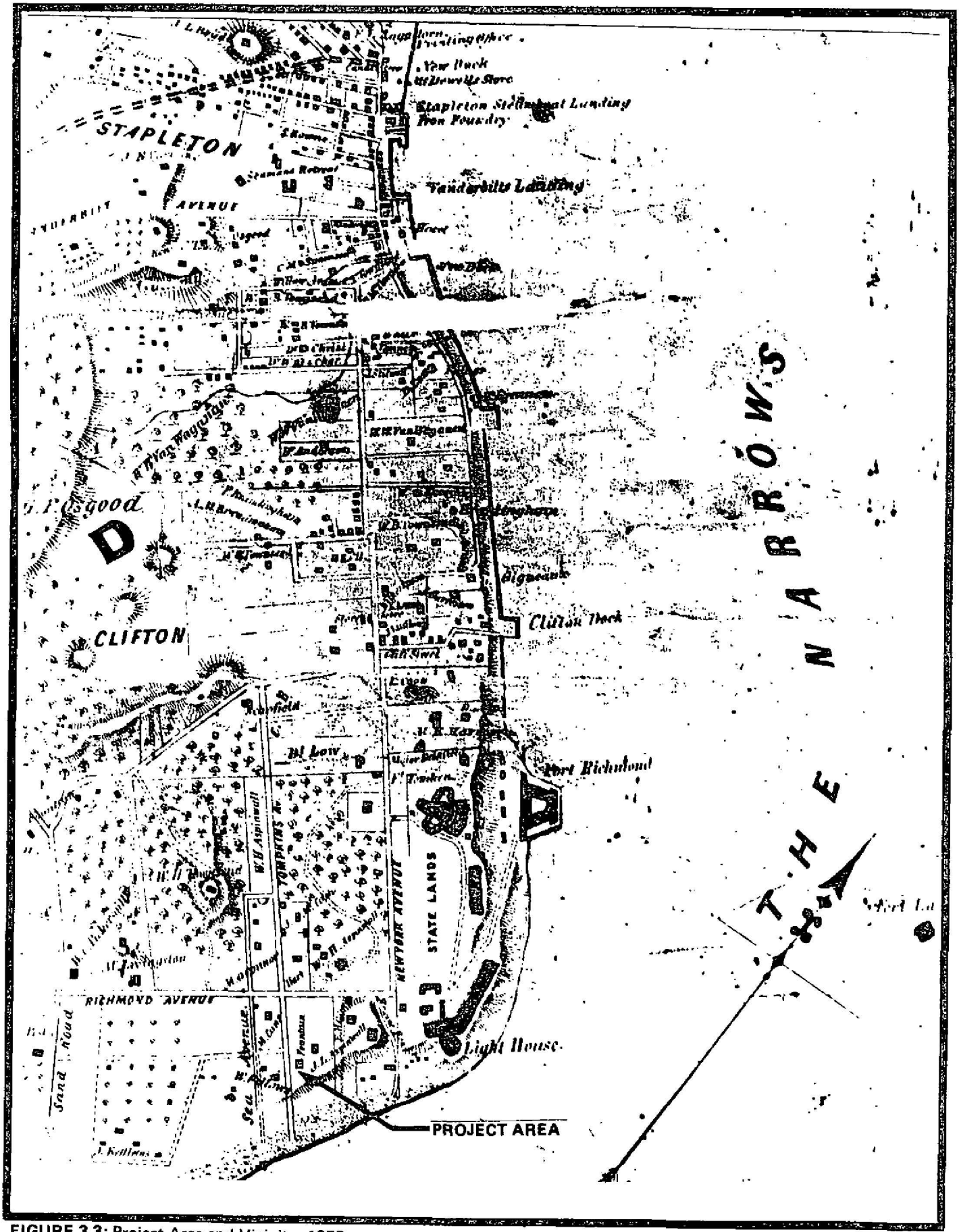
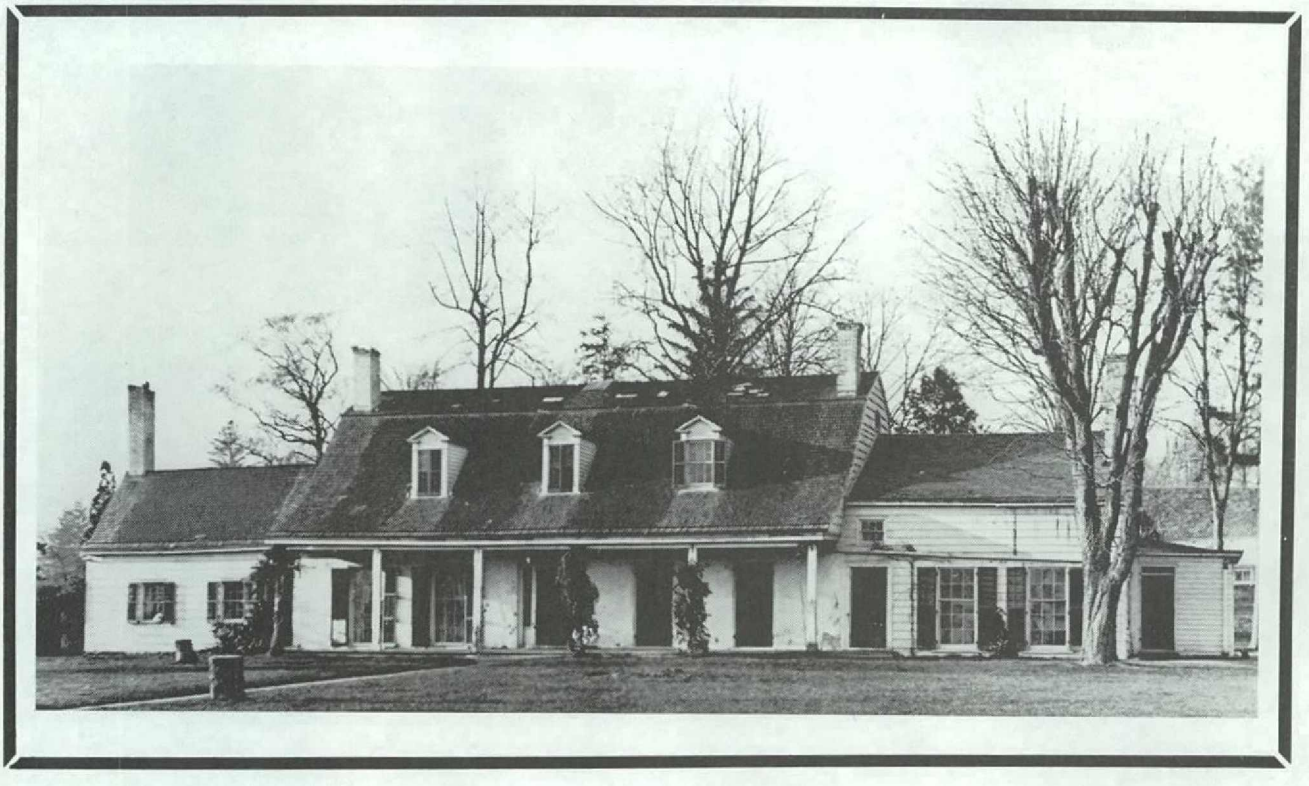


FIGURE 3.3: Project Area and Vicinity, 1853

SOURCE: Butler, 1853

PLATE 3.1: Two Views of VanDeventer-Fountain House and Associated Outbuildings (circa 1900).



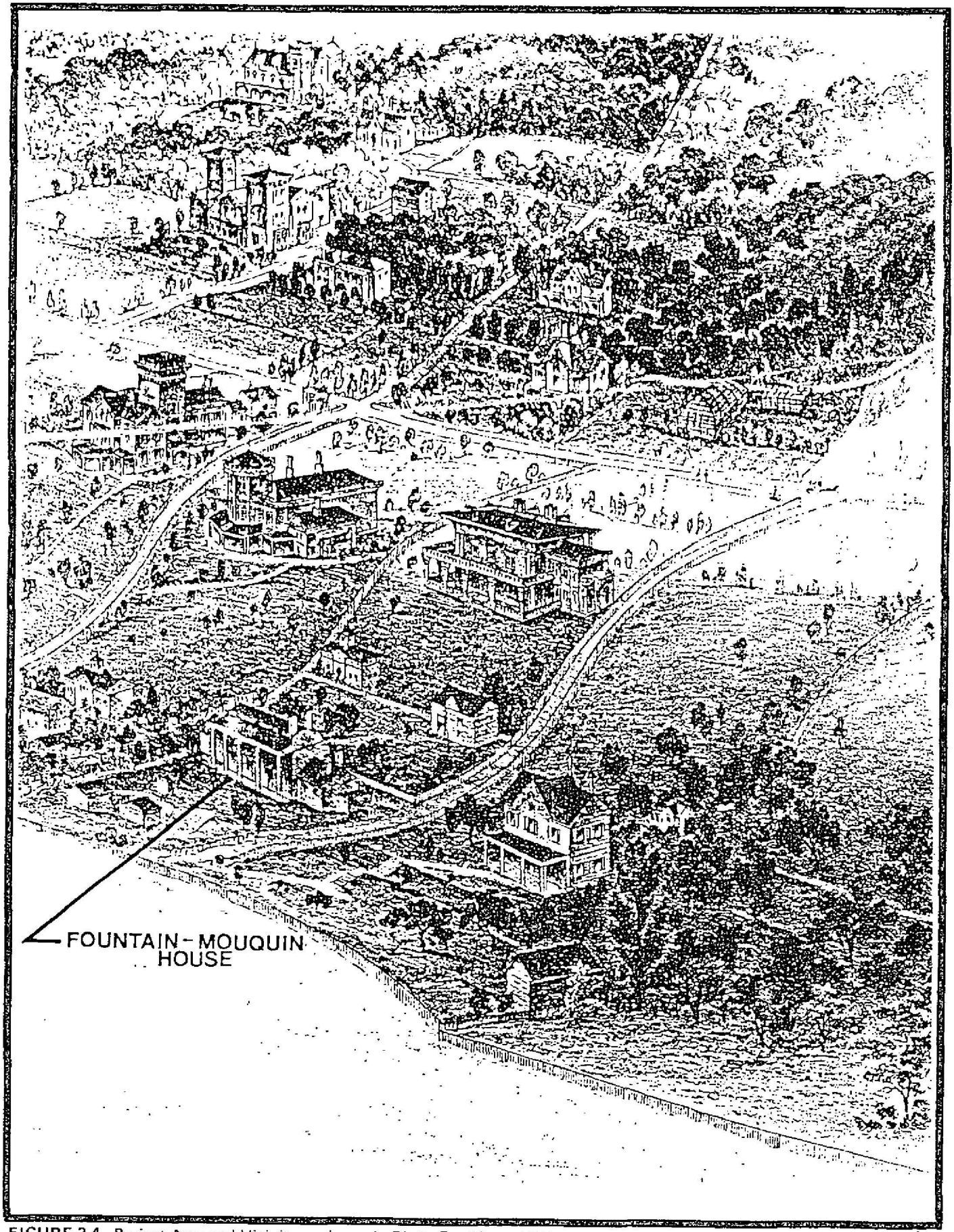


FIGURE 3.4. Project Area and Vicinity as shown in Bird's Eye View, 1854

SOURCE: Bornet, 1854

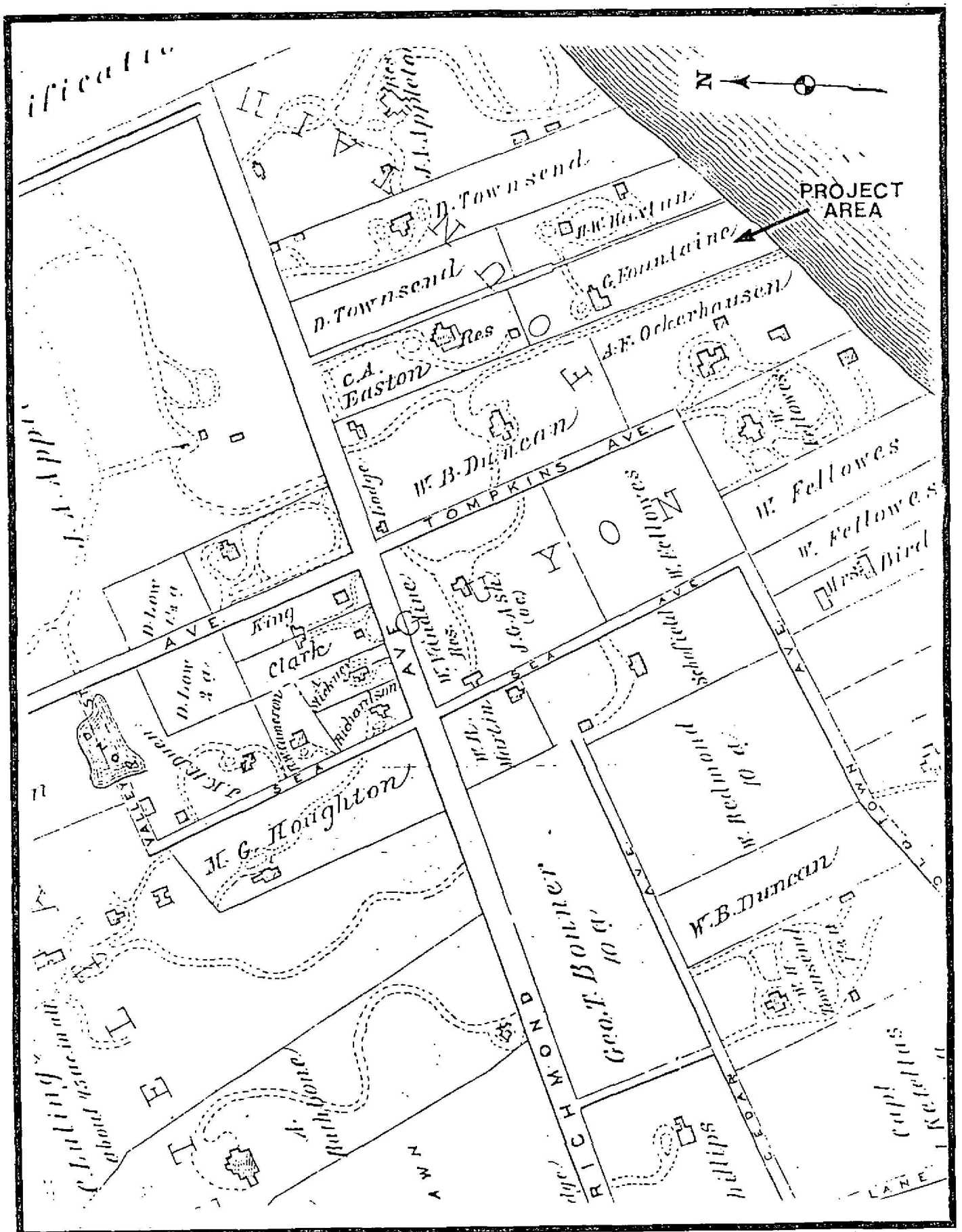


FIGURE 3.5: Project Area and Vicinity, 1873

SOURCE: Beers, 1873

Deeds, Bk. 138, p. 299, p. 313). Mouquin held the property until 1901, when he sold it to the U.S. Army, which was then expanding its presence at Fort Wadsworth (Richmond Co., Deeds, Bk. 288, p. 10).

Mouquin was a colorful figure in New York City's restaurant life, so colorful, in fact, that when he died in 1933, he was written up on the front page of the New York Times, even though it had been many years since he had lived in the city. Mouquin was born in Vaud, Switzerland, not far from Lausanne, on October 11, 1837. His father and grandfather were both hotelkeepers and vintners, whose establishment, it was reputed, had been frequented by royal patrons, including Louis Napoleon. At the age of 17, Henri left home for Paris, where he had met with the Prince, by this time Emperor of France. From Paris, Mouquin went on to Havre and took a German steamship to New York (New York Times, December 25, 1933).

Mouquin's first job was as a waiter at Delmonico's. He gave that up and wandered around the country for a while, ending up as far west as St. Louis. He returned to New York City in 1857 and invested his savings in a restaurant on Nassau Street. In 1859, he married Marie Grandjean, also a native of Vaud. He expanded the enterprise, eventually opening a restaurant in Fulton Street and then a "chic pastry shop" that grew into a restaurant on West 46th Street near Sixth Avenue, where another Mouquin restaurant was located. Mouquin obviously prospered and when he died in 1933, his estate was valued at over $900,000 (New York Times, December 25, 1933; Chappell 1925:79-80). In his heyday, Mouquin was said to have been "the largest importer of wines" in the country and was hailed for the elegant simplicity of his cuisine, superior service, and fine quality of the vintages he served (New York Times, January 24, 1932). He began to buy land near Williamsburg, Virginia, in 1871, and by the time he retired to his farm there after 1901, he had amassed 1,200 acres (New York Times, January 24, 1932).

City directory entries for Mouquin date to 1859, when he described himself as involved in "liquors" at 95 Fulton Street with a residence at 79 Leonard Street (Trow's New York City Directory 1859:580). Over the years, he was variously described as a dealer in wines, liquors, and cheeses as well as the proprietor of an "eating house" (see for example, Trow's New York City Directory 1878:1012). The first reference to his residence being located in Staten Island occurred in the 1885 directory (Trow's New York City Directory 1885:1254). This is consistent with information contained in the Beers (1887) atlas, which shows Mouquin as the occupant of the project area (Figure 3.6). He remained listed at a Staten Island address through 1902 (Trow's New York City Directory 1902:959). Directories typically lagged by at least one year, however, and it is unlikely that Mouquin remained at the Staten Island residence after he sold it to the Army in 1901. In fact a letter was sent to Mouquin by the Army on October 5, 1901, stating that he was expected to vacate the pre-

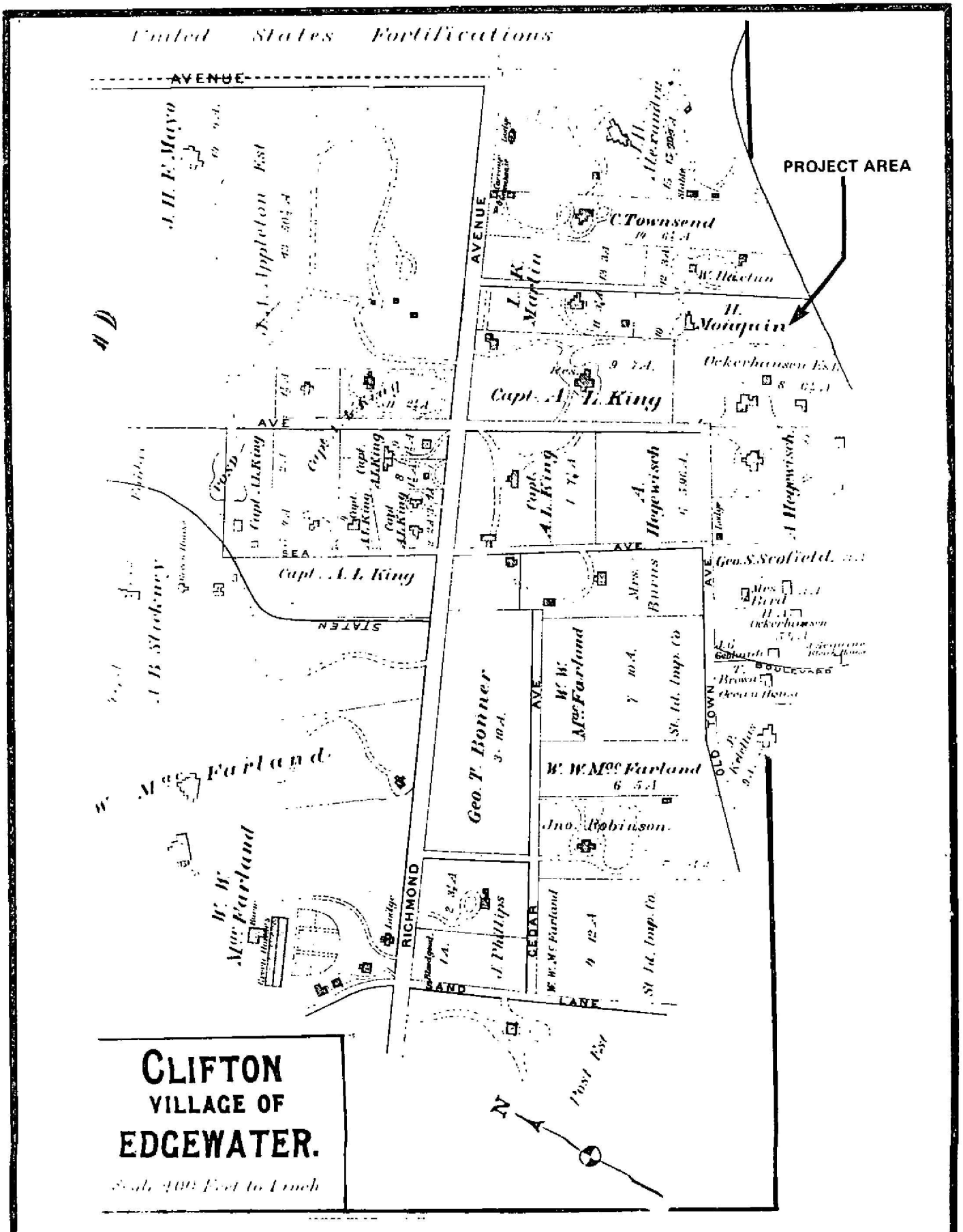


FIGURE 3.6: Project Area and Vicinity, 1887

SOURCE: Beers, 1887

mises on or before the twenty-first. The letter further stated that he was not to remove any permanent fixtures, shrubbery, or plants because they wanted the house ready for immediate occupation until it was time to destroy it for defensive purposes (U.S.E.O.C.R.6.77, Entry #821, Vol. 1:50). By the publication of the next directory in 1903, he had moved to Virginia and his sons had taken over the business (Trow's New York City Directory 1903: 994). Mouquin maintained a presence in New York, however, listing his residence as the Hotel Navarre in 1911 (Trow's New York City Directory 1911-1912:1050).

The VanDeventer-Fountain House was described, at the time of its purchase, as an old colonial stone structure with low ceilings and no modern sanitary arrangements (U.S.E.O.C, RG. 77, Entry #802, Box 49, File 20, 1902:141).

D. SUMMARY AND CONCLUSIONS

In 1908, the Army took down the VanDeventer-Fountain House (Leng and Davis 1930:897), thus completing the transformation which had begun during the American Revolution of the Staten Island shoreline near the Narrows from civilian to military use. The sequence of civilian occupations associated with the property conforms to the pattern observed elsewhere in the greater New York area (see, for example, Louis Berger & Associates 1985c). These comprise use as a working farm from about 1730/34 through 1835; subdivision between 1842 and 1852 into smaller units used as weekend country and year-round suburban villas as transportation systems improved and access to the city became easier.

Use as a country/suburban residence characterized the property until it was subsumed into Fort Wadsworth in 1901, and two episodes can be distinguished during this period. The first is the somewhat ambiguous occupation by heirs of Abraham VanDeventer Fountain after 1860; there is conflicting evidence of both rental and owner occupation during this period, particularly in the 1870s. After 1881, however, Henri Mouquin clearly enjoyed exclusive proprietorship of the property. While he did not appear in the 1900 or the 1910 Federal censuses as a resident of Staten Island, he did give Arrochar or Stapleton, Staten Island, as his residence in the New York City directories, in which he was regularly listed. Listing in a city directory represented a form of self-advertisement. Although it is not unlikely that he had a place to stay in the city, he clearly considered the Staten Island address his principal residence and went there frequently.

All three uses - agricultural, country/suburban, and military - reflect the extent to which a regional system of social, economic, political, and strategic networks defined New York Bay and the rivers that flowed into it. The VanDeventer/Lakermans/ Fountain families extended their social and economic relationships from Long Island across Manhattan to Staten Island by the end of the seventeenth century. Although agriculture receded to

the fringes of the greater metropolitan area over the course of the nineteenth century, former farms were subdivided to house a population whose economic livelihood was centered in the city. Finally, Fort Wadsworth itself was an element in a system of forts designed to protect the New York City harbor.

IV. ARCHAEOLOGICAL FIELD DATA AND INTERPRETATION

A. FIELD METHODS

The Phase III field strategy had the following objectives: 1) locate foundation and internal partition walls of the house and outbuildings; 2) identify intact historic domestic refuse deposits; 3) recover datable artifact assemblages; and 4) locate and explore undisturbed Native American artifact assemblages and features. These goals were met through a three-stage field strategy: 1) exposure of foundation walls; 2) machine stripping of yard areas; and 3) hand excavation of test units.

The first stage consisted of exposing the tops of the foundation walls to the VanDeventer-Fountain house and associated outbuildings in order to determine internal site configuration. Overburden removed from these walls was not screened because it contained a mixed deposit of eighteenth- to twentieth-century material. Once the walls of the main house and outbuildings were exposed, a detailed map of each structure was made. Then, a grid system was established across the site, following the orientation of the structures. A transit and engineer-scaled tapes were used to lay out the grid for systematic unit excavation.

Stage 2 entailed the use of heavy machinery (Dynahoe 190 equipped with a four-in-one clamshell bucket) to strip the yard areas around the house and associated outbuildings of overburden in order to locate prehistoric and/or historic features and deposits The final field stage involved excavating a maximum of 30 test units, which varied in size from 3 x 3 feet to 3 x 10 feet, comprising a total area of 675 square feet. These units were used to investigate any features and associated artifactual deposits exposed during Stage 2, in addition to examining the house and two outbuildings identified during the Phase II study. Heavy machinery was also used to test the house for structural information. At the completion of this stage, the project area's landscape was restored, as nearly as possible, to its pre-excavation contours.

Unit excavation was conducted by shovel scraping unless fragile remains were encountered, in which case trowels were used. During excavation, soil strata were defined according to distinct textural characteristics, color (based on Munsell color charts), and artifact content in order to distinguish different depositional episodes. All excavated soils were screened through 1/4-inch hardware mesh, and a 2.5-gallon soil sample was retained for flotation from each unit. In the case of disturbed soils, the entire stratum was removed by shovel without screening. Excavation proceeded until sterile subsoil was reached. Profiles were then drawn for each unit. Artifacts recovered during excavation were bagged separately according to unit and feature stratum, and sent to the laboratory for processing. Those artifacts

that needed immediate conservation were separated from the general collection in order to be treated by the project conservator.

All excavation units were examined carefully for cultural features. When a feature was encountered, it would be bisected, with one-half excavated by natural stratigraphic layers, or by arbitrary 0.4-foot levels where natural stratigraphy was not apparent. Excavation continued until the base of the feature was encountered. A profile was drawn, after which the remaining half of the feature was excavated, again by natural stratigraphic layers. A 2.5-gallon flotation sample was taken from each stratum within a feature.

A Provenience Form was completed for each level excavated within a stratum for both test units and features. The form recorded specific observations and tentative interpretations of how the level being excavated related to associated deposits and features. Regardless of what was recovered, each level was assigned a catalogue number in the field. Provenience information recorded for each catalogue number included: excavation unit/area designation, stratum, level, feature number, a description of the deposit, opening and closing elevations, date the level was opened and closed, types of samples taken, and the number of artifact bags.

Color slides and black-and-white photographs were taken by the staff photographer and site supervisors of plan views and profiles of all units and features, in addition to general site overviews. All data pertinent to each photograph were recorded on a photographic record form.

Figure 4.1 illustrates the distribution of excavation units, and the location of the machine-stripped yard areas. The configuration of the VanDeventer-Fountain House and associated outbuildings, exposed during hand-clearing of the walls, is also shown. An unexpected characteristic of the site, not evident from the earlier Phase II study, was the structural complexity of the house. The extant structural remains consisted of an irregularly shaped rectangular foundation (main structure) measuring 50 feet east-west by 30 feet north-south; an eastern extension (east bay) measuring approximately 30 feet north-south by 15 feet east-west; and a 10-foot-square outbuilding with a stone foundation. (Feature 1) adjacent to the main structure. Based on a ca. 1900 photograph of the site, Feature 1 had been incorporated into the main house. Hand-clearing and machine-stripping exposed several outbuildings and deep features. These included a 12-foot-square brick outbuilding (Feature 2) northwest of the house, a cobble walkway (Feature 3) north and south of Feature 2; a brick shaft (Feature 5) measuring approximately 5 feet by 8 feet; a brick walkway that extended north of Feature 5 and joined with the cobble walkway (Feature 3); a second brick walkway immediately north of the main structure and Feature 1; a six foot diameter

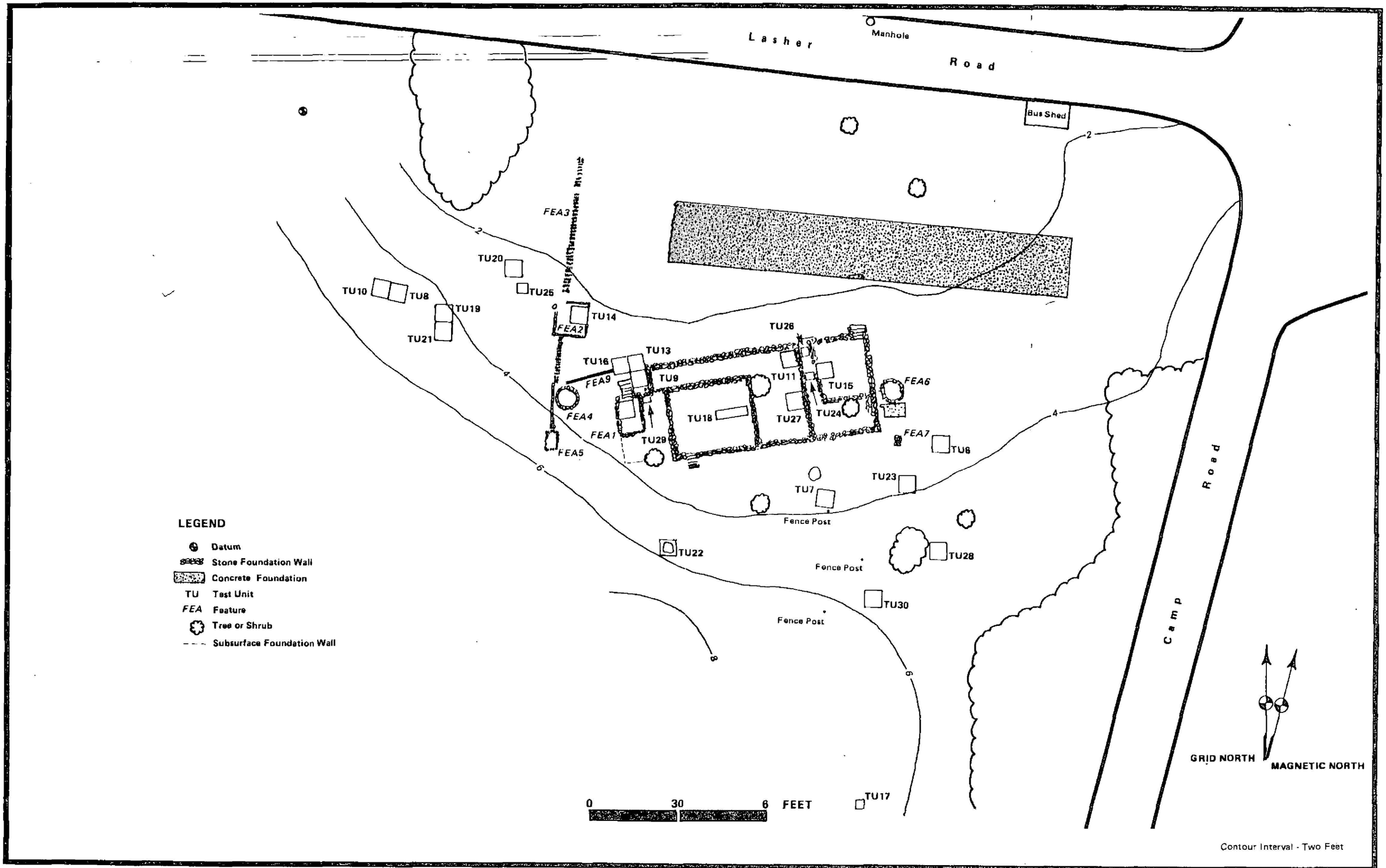


FIGURE 4.1: Phase III Site Plan

brick cistern (Feature 4) west of the house; and a second brick cistern (Feature 6) adjacent to the east bay (Figure 4.1).

Mechanical stripping of the yard areas (Stage 2) exposed: two localized shell middens/trash deposits containing eighteenth- to early nineteenth-century materials, and a concentration of nineteenth-century bottle glass north and west of the brick outbuilding (Feature 2); two 4-foot diameter circular soil stains and a series of wood posts south of the house; and areas disturbed by early twentieth-century military construction activities north and southwest of the house.

B. FIELD RESULTS

1. Stratigraphy

Relatively uniform stratigraphy was observed in the excavation unit profiles across the site. Typically, three types of stratigraphic deposits were documented: 1) grading; 2) demolition rubble; and 3) natural soils. It should be noted however, that these deposits were not exclusive to the yard areas of the site, but also occurred within portions of the house.

The grading deposits, for the most part, extended across the entire site and consisted of a very dark brown loamy sand that varied from 0.4-1.0 feet in thickness. These deposits exhibited slight variation across the site. The deposits on the eastern portion of the site tended to contain more organic soils than those overlying the structures, while those overlying the structures and deep features contained more gravel and burnt cinders. Regardless of the variation, the grading deposits were the result of the demolition of the VanDeventer-Fountain house by the Army in 1907/08 and subsequent construction activities.

Demolition rubble, consisting primarily of brick, rubble masonry, burnt cinders, and associated architectural debris, was located beneath the grading deposits within the house, outbuildings, and deep features. This deposit was a result of the VanDeventer-Fountain complex being razed in 1907/08 by the Army. Deposits within the structures and deep features ranged in depth between 2.8 and 6.5 feet.

A buried horizontal deposit, consisting of several cultural bearing subsoil strata, was documented west, south, and east of the main house. This deposit (i.e., A-horizon) was less disturbed by the grading activity south and east of the house than to the west of the house. The yard deposit was much darker and smoother in texture than the overlying grading soils and consisted of very dark brown to very dark grayish brown silty sand, approximately 0.4 feet thick. A noticeable increase in artifactual material was observed in the field upon encountering this deposit. Recovered materials included both prehistoric and historic artifacts.

Subsoils, or glacial outwash deposits (B-horizon), were evident across all areas of the site and were located below the cultural bearing strata. These deposits typically consisted of dark yellowish brown, strong brown, and dark reddish brown to reddish brown sands. Very few artifacts were recovered from the subsoil deposits.

2. Features

Eighteen features were documented during the data recovery program (Table 4.1). The features included a 9-by-12-foot outbuilding, a 12-foot-square outbuilding, a cobble and brick pavement, two brick cisterns, a stone and brick shaft, a brick walkway, a clay-lined cistern, four circular pits, three postmolds, two shell middens, a possible prehistoric stone pile, and various foundation walls and structural features. In the following section, each of the above mentioned features are discussed individually. Date ranges and function of features are presented in Table 4.1. Analyses used to define these ranges and functions are described in Chapter V. The main house foundation walls were not assigned feature numbers, and will be discussed in Chapter V, Section D.

Feature 1, located three feet west of the house, was first encountered during Phase II testing (Figure 4.1). The feature consisted of a mortared-stone foundation estimated to be 10 x 10 feet. The interior walls were dressed and extended to a depth of 5.4 feet below the surface. This indicated that the structure had a cellar. It was hypothesized that Feature 1 was an outbuilding, not attached to the house, and functioned as a cold storage facility (Louis Berger & Associates 1985:32).

Phase III field efforts entailed hand-clearing overburden over all walls, in order to delimit the feature's configuration. As a result, Feature 1 was found to measure 9 x 12 feet, with a brick stairwell and a stone threshold located in the north wall. This appeared to represent an entryway into the structure's cellar. In order to sample the interior deposits and establish the feature's construction sequence, Unit 12 was placed within the northwest corner of the feature. Excavation documented four distinct layers of ash and cinders (Table 4.2). This burned deposits covered a series of sandy demolition fills (Strata 6 thru 11) that consisted of varied amounts of brick, mortar, nails, window glass, and heavily corroded metal (Figure 4.2). Directly below the demolition fill was a layer of burned wood (Stratum 12). This deposit appeared to be the remnants of the upper floor that had collapsed into the cellar. Underlying the burned wood was an additional layer of demolition, consisting of decomposed mortar and large quantities of brick (Stratum 13). A heavily worn brick floor (Stratum 14) was encountered below this demolition. The floor deposit had been dry-laid into a thin layer of gray/brown sand (Figure 4.2; Plate 4.1). Both the brick floor and stone foundation walls were built into the subsoil (Strata 14 and 15).

TABLE 4.1

FEATURE LIST

FEATURE NUMBER	FUNCTION	LOCATION	DATE RANGE
1	Outbuilding	Unit 12	1840 to 1849
2	Outbuilding	Unit 14	Pre-1894
3	Cobble and Brick Walkway	North and South of Feature 2	Unknown
4	Brick Cistern	West of Feature 1	Unknown
5	Brick Shaft	Southwest of Feature 1, and Main House	Pre-1894
6	Brick Cistern	East of Main House	Unknown
7	Possible Collapsed Chimney	East Yard Area	Unknown
8	Shell Midden	West Yard, Units 8,10	1786 to 1815
9	Possible Walkway	North of Feature 1	Unknown
10	Stone Cluster	South Edge of Site	Possibly Prehistoric
11	Clay Lined Cistern	Units 9, 13, and 16	1800 to 1849
12	Shovel Test Pit	Units 19 and 21	1984
13	Flower Bed	South Yard, Unit 22	Unknown
14	Circular Stain	South Yard, Unit 30	Unknown
15	Shell Midden	East Yard, Unit 20	1786 to 1815
16	Fence Post	South Yard Area	Unknown
17	Fence Post	South Yard Area	Unknown
18	Fence Post	South Yard Area	Unknown
19	Flower Bed	South Yard Area	Unknown

TABLE 4.2

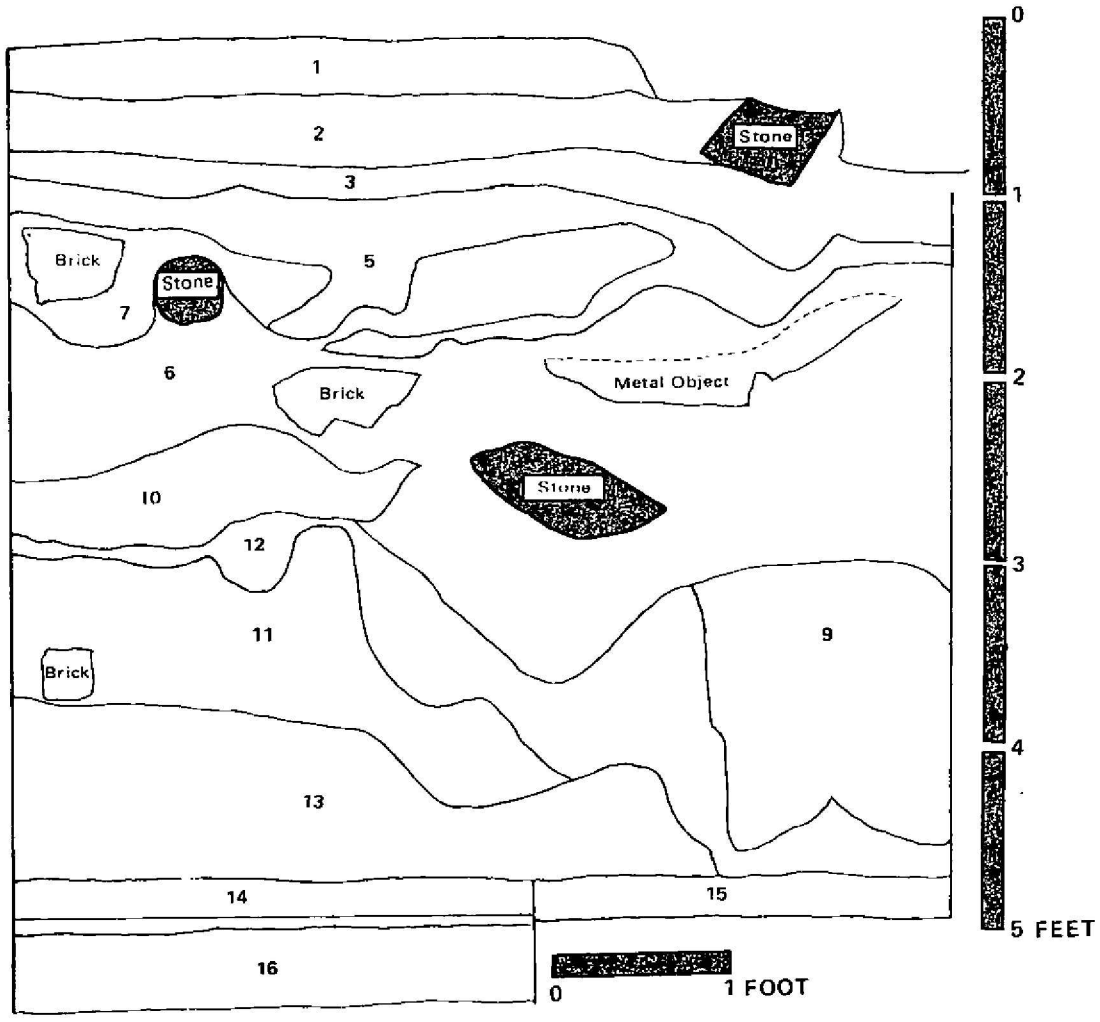
EXCAVATION UNIT 12 STRATIGRAPHY

STRATUM NUMBER	MUNSELL NUMBER	MUNSELL COLOR	TEXTURE	DESCRIPTION	DEPTH
1	10YR 3/1	Very dark gray	Silty sand	Grading	0.38' to 0.73'
2	10YR 3/2	Very dark gray brown	Smaller angular gravel	Grading	0.56/0.73' to 0.64/0.8'
3	10YR 3/2	Very dark gray brown	Sandy silt w/gravel	Grading	0.64/0.8' to 0.7/0.9'
4	10YR 3/2	Very dark gray brown	Sand w/ gravel	Grading	0.7/0.9' to 0.81/1.27'
5	2.5Y 8/0, 10YR 3/3, 10YR 5/6	White, dark brown and yellowish brown	Ash and cinder	Burn level	0.81/1.27' to 1.1/1.28'
6	10YR 3/2	Very dark gray brown	Silty sand	Demolition rubble	1.1/1.27' to 2.0/2.45'
7	7.5YR 6/4, 7.5YR 5/4	Light brown	Silty clay, clay	Demolition rubble	1.03/1.64' to 1.36/1.95'
8	10YR 3/4	Dark yellowish brown	Silty sand	Demolition rubble	1.6/2.02' to 2.07/2.34'
9	10YR 3/2	Very dark gray brown	Silty sand	Demolition rubble	2.4/2.69' to 3.01/3.8'
10	7.5YR 4/2	Brown	Loamy sand	Demolition rubble	2.35/2.55' to 3.63/4.0'
11	10YR 5/3, 10YR 7/2	Brown, and light gray	Sand	Demolition rubble	2.95/3.2' to 3.05/3.45'

TABLE 4.2 (Continued)

12	--------	Black	Charred wood	Burnt/wood floor	3.01/3.8' to 3.4/3.82'
13	10YR 4/2, 10YR 8/3	Dark gray-ish brown	Sand	Demolition rubble	3.81/4.2' to 4.6/4.68'
14	2.5Y 2/0	Black	Brick and sand	Brick floor and sand bedding	4.4/4.68' to 4.71/4.86'
15	10YR 5/2	Gray brown	Sand	Floor bed-ding or subsoil	4.71/4.86' to 4.83/4.98'
16	7.5YR 4/2	Brown to dark brown	Sand	Subsoil	4.83/4.98' to 5.21/5.35'

EXCAVATION UNIT 12 STRATIGRAPHIC PROFILE SOUTH WALL



Stratum 1 - 10YR 3/1 Very Dark Gray Silty Sand, LANDSCAPE GRADING
Stratum 2 - 10YR 3/2 Very Dark Gray Brown Small Angular Gravel, LANDSCAPE GRADING
Stratum 3 - 10YR 3/2 Very Dark Gray Brown Sandy Silt with Gravel, LANDSCAPE GRA
Stratum 4 - 10YR 3/2 Very Dark Gray Brown Sand with Gravel, LANDSCAPE GRADING
Stratum 5 - 2.5Y 8/0, 10YR 3/3, and 10YR 5/6 White, Dark Brown and Yellowish Brown Ash and Cinder, BURN LEVEL
Stratum 6 - 10YR 3/2 Very Dark Gray Brown Silty Sand, DEMOLITION RUBBLE
Stratum 7 - 7.5YR 6/4 and 7.5YR 5/4 Light Brown Silty Clay and Clay, DEMOLITION RUBBLE
Stratum 8 - 10YR 3/4 Dark Yellowish Brown Silty Sand, DEMOLITION RUBBLE
Stratum 9 - 10YR 3/2 Very Dark Gray Brown Silty Sand, DEMOLITION RUBBLE
Stratum 10 - 7.5YR 4/3 Brown Loamy Sand, Demolition Rubble
Stratum 11 - 10YR 5/3 and 10YR 7/2 Brown and Light Gray Sand, DEMOLITION RUBBLE
Stratum 12 - Black Charred Wood, BURNT WOOD FLOOR
Stratum 13 - 10YR 4/2 and 10YR 8/3 Dark Grayish Brown Sand, DEMOLITION RUBBLE
Stratum 14 - 2.7Y 2/0 Black Brick and Sand, BRICK FLOOR AND SAND BEDDING
Stratum 15 - 10YR 5/2 Gray Brown Sand, FLOOR BEDDING OR SUBSOIL
Stratum 16 - 7.5YR 4/2 Brown to Dark Brown Sand, SUBSOIL

FIGURE 4.2: South Stratigraphic Profile, Excavation Unit 12, Feature 1

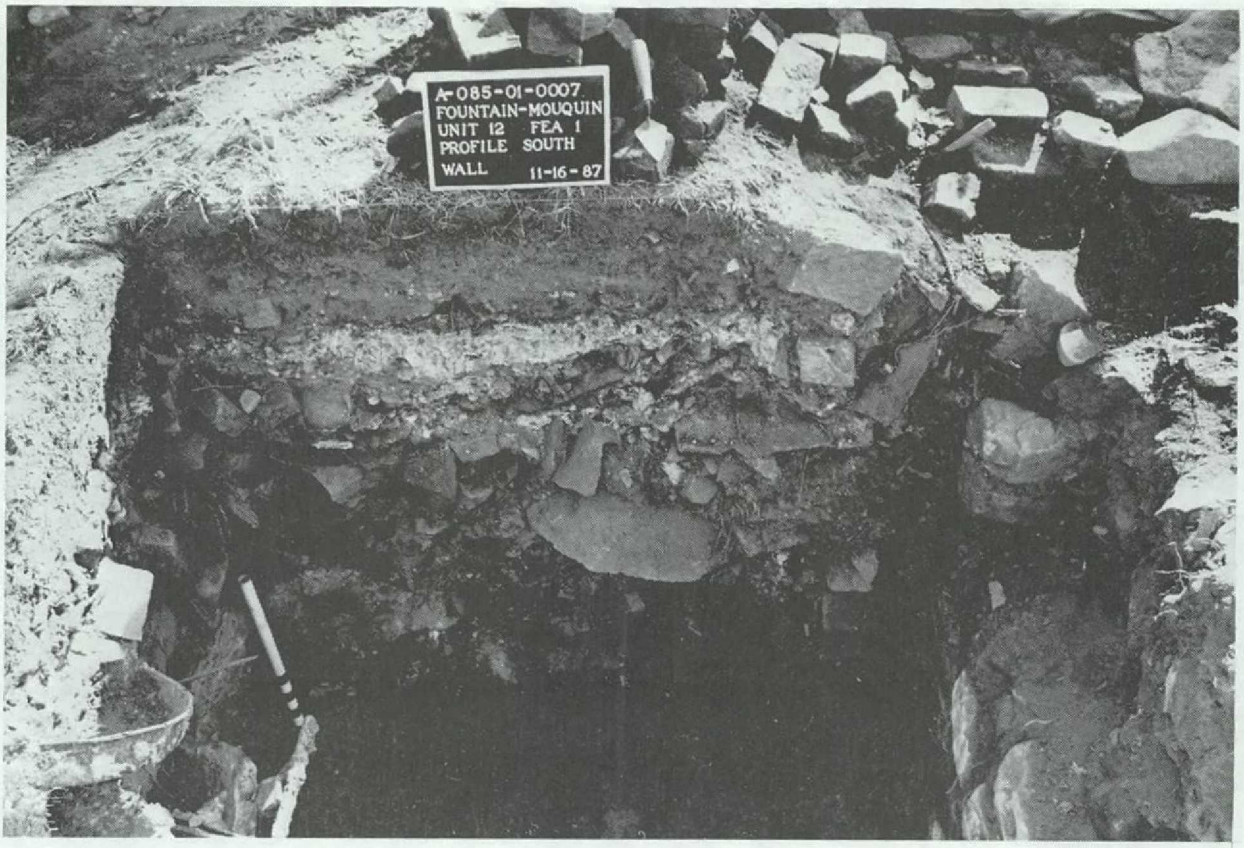


PLATE 4.1. South Wall Profile of Unit 12 (Feature 1) Showing Demolition Fill and Brick Floor.

Based on its location and association with other structural features, Feature 1 appears to have stood separately from the house at one time and was later attached to it (see Chapter V, Section D for a more detailed discussion). Analysis of artifactual material recovered from the feature could not determine its function.

Features 2 and 3 were first encountered during Phase II testing. Shovel stripping during Phase II uncovered a linear brick and cobble surface that sloped toward its center and dipped to the south (Feature 3, Figure 4.1). In addition, a brick foundation (Feature 2), measuring 12 x 12 feet, was exposed at the north end of the brick and cobble surface. The northwest corner of the structure was found to have been truncated by the installation of a sewer line. The Phase II report surmised that Feature 2 was an outbuilding of unknown function, while Feature 3 probably represented a drain associated with it (Louis Berger & Associates 1985:32).

During Phase III testing, Features 2 and 3 were re-exposed by hand clearing the overburden from the structure's walls and the brick and cobble drain (Plate 4.2). Further clearing north of Feature 2 uncovered an additional 42-foot section of cobble drain (Figure 4.1). It was unclear if the cobbles originally abutted the structure, because this area had been disturbed by a sewer line.

Unit 14 was placed within Feature 2 to sample the interior deposits and determine if the structure contained a cellar. Excavation revealed that the grading deposit (Stratum 1) overlying the structure was consistent in depth and content with other areas of the site (Table 4.3). This, in turn, overlay varied deposits of demolition debris (Strata 2, 3, 4, and 5) that filled what turned out to be the structure's cellar (Figure 4.3; Table 4.3). The most prevalent artifacts from these deposits were brick, mortar, and coal. Much of the debris came from Stratum 4, which also contained a large amount of roofing materials (i.e., flashing and asphalt shingles) and spirits bottles. However, the densest concentration of brick and mortar was contained in Stratum 5, Level 1, where over 80 kg of brick and 26 kg of mortar were recovered. The large amounts of brick recovered from these deposits clearly indicate that the feature's superstructure was brick. This is confirmed in a circa 1900 photograph of the house which shows Feature 2 as a brick structure (Plate 4.3). Many of the artifacts from Strata 3, 4, and 5 exhibited signs of being burned. The demolition deposits yielded a mean ceramic date (MCD) of 1870, but a glass terminus post quem (TPQ) of 1906.

The demolition deposits overlaid remnants of a possible builder's trench (Stratum 6), and very densely packed sand (Stratum 7). No diagnostic artifacts were recovered from the builder's trench; however, both prehistoric and historic materials were recovered from the hard-packed sand. Historic materials (nails, corroded metal, and bone) were found in the first 0.1 foot of Stratum 7, while prehistoric artifacts (argillite flakes) were located in

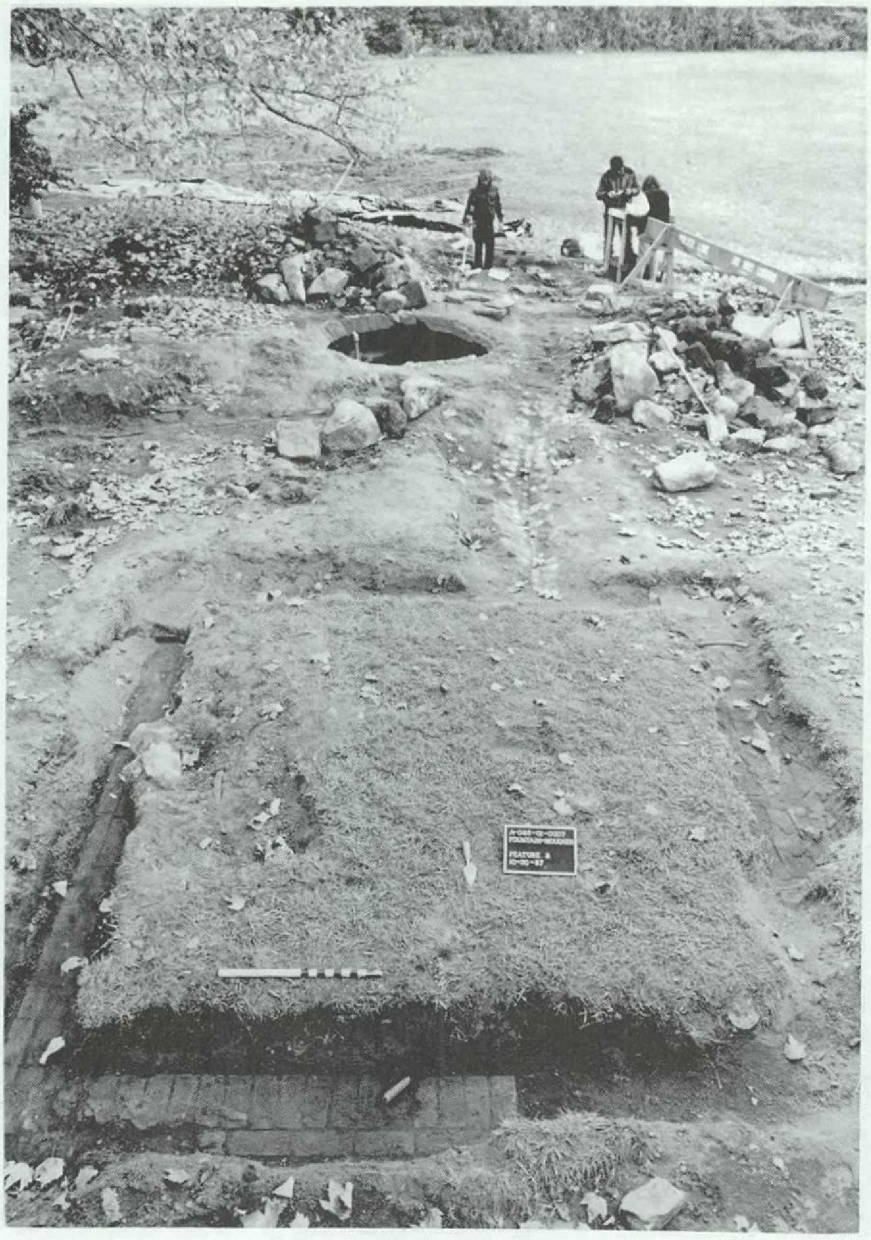


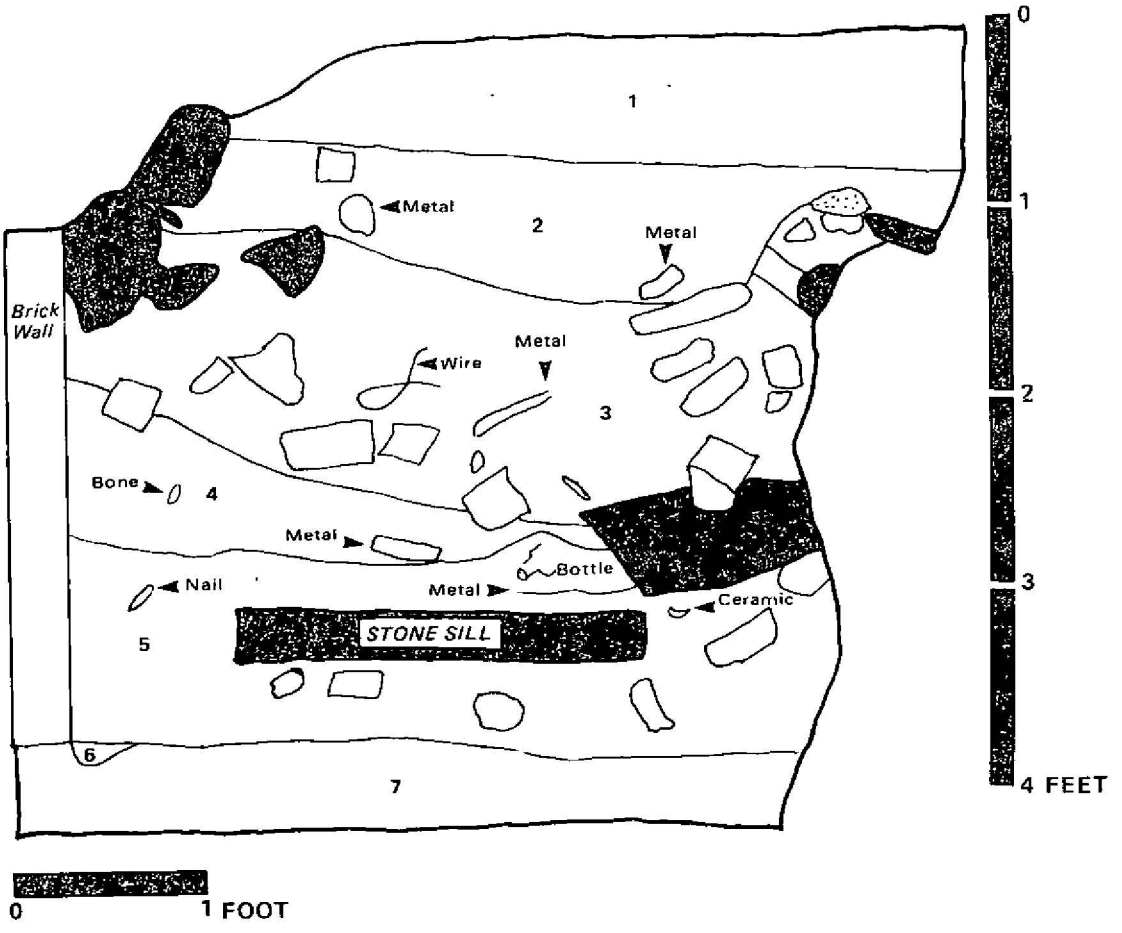
PLATE 4.2: Foreground Feature 2. Background Cobble Walk (Feature 3), Cistern (Feature 4) and Brick Shaft (Feature 5) Looking South.

TABLE 4.3

EXCAVATION UNIT 14 STRATIGRAPHY

STRATUM NUMBER	MUNSELL NUMBER	MUNSELL COLOR	TEXTURE	DESCRIPTION	DEPTH
1	10YR 2/1	Black	Sandy silt	Grading	0.05/0.58' to 0.55/0.77'
2	10YR 2/1, 7.5YR 4/4	Black, and brown to dark brown	Sandy silt	Demolition debris	0.55/0.77' to 0.89/0.97'
3	10YR 2/2	Very dark brown	Sandy silt	Demolition debris, cellar fill	0.89/0.97' to 1.83/2.17'
4	10YR 2/1, 7.5YR 4/4	Black, and brown to dark brown	Sandy silt	Demolition debris, cellar fill	1.83/2.17' to 3.20'
5	10YR 3/2, 10YR 2/2, 7.5YR 4/4	Very dark brown to very dark gray brown, and brown	Silty sand	Demolition debris, cellar fill	3.20' to 3.85/3.92'
6	10YR 3/3	Dark brown	Sand	Builder's trench	3.82/3.87' to 3.91/4.00'
7	7.5YR 4/4	Brown to dark brown	Sand	Subsoil	3.85/4.00' to 4.33/4.40'

EXCAVATION UNIT 14 STRATIGRAPHIC PROFILE SOUTH WALL



Stratum 1 - 10YR 2/1 Black Sandy Silt, LANDSCAPE GRADING

Stratum 2 - 10YR 2/1 and 7.5 YR 4/4 Black and Brown to Dark Brown Sandy Silt, DEMOLITION DEBRIS

Stratum 3 - 10YR 2/2 Very Dark Brown Sandy Silt, DEMOLITION DEBRIS, CELLAR FILL

Stratum 4 - 10YR 2/1 and 7.5YR 4/4 Balck and Brown to Dark Brown Sandy Silt, DEMOLITION DEBRIS, CELLAR FILL

Stratum 5 - 10YR 3/2, 10YR2/2, and 7.5YR 4/4 Very Dark Brown to Very Dark Gray Brown and Brown Silty Sand, DEMOLITION DEBRIS, CELLAR FILL

Stratum 6 - 10YR 3/3 Dark Brown Sand, BUIDERS TRENCH

Stratum 7 - 7.5YR 4/4 Brown to Dark Brown Sand, SUBSOIL

Stone

Brick

Mortar

FIGURE 4.3: South Stratigraphic Profile, Excavation Unit 14, Feature 2

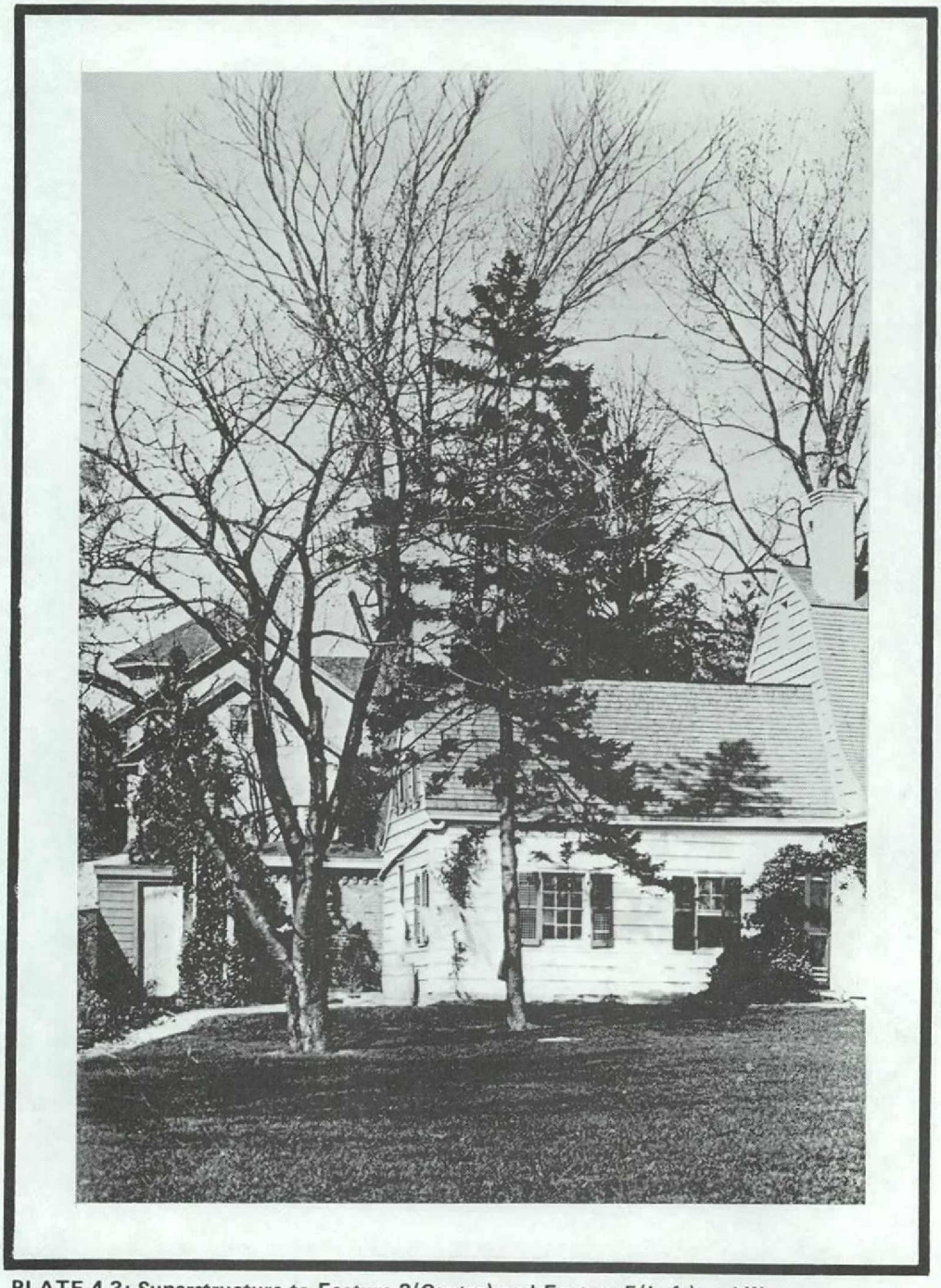


PLATE 4.3: Superstructure to Feature 2(Center) and Feature 5(Left) and Western Extension(ca.1900) Looking North.
Source: Photograph on File at the Staten Island Institute of Arts and Sciences.

the northwest corner of the unit. The depositional sequence within the unit indicated that the brick walls of the structure were pushed inward. This would suggest that the structure was probably razed by the Army when they tore the house down in 1907/08.

Several characteristics of Feature 2 suggest that it originally may have functioned as an ice house and was later used for storage. First, the structure measured 12 x 12 feet, the dimensions suggested by The Home & Farm Manual, an 1884 edition on farmhouse and outbuilding architecture, for an ice house (Periam 1984:373). Second, the brick foundation extends 2.5 feet below the surface and rests on glacial outwash sands that also served as the structure's floor. B.D. Halstead, in Barn Plans and Outbuildings, recommends constructing the foundation of ice houses two feet deep in dry gravelly or sandy soil (Halstead 1906:241). Finally, a circa 1900 photograph of the structure shows a cupola on the roof (see Plate 4.3). This may have acted as a roof ventilator, a feature recommended by Halstead in ice houses that drew off excess warm air. In addition, Halstead provides a cross section of a filled ice house that closely resembles Feature 2 as seen in the circa 1900 photograph (Figure 4.4). The structure was built sometime prior to 1894, since it was present on a map of the area dating to that time period (Figure 4.5). The artifactual assemblage from Feature 2, unlike the architectural form did not provide information on the function of the structure.

Feature 4 is a brick cistern, six feet in diameter, located approximately eleven feet west of the house and Feature 1 (Figure 4.1). The cistern was first identified during the shovel-scraping stage of the data recovery effort. Removal of the overburden revealed three rows of mortared-brick sloping upward towards the center of the cistern (Plate 4.4). This would indicate that a brick dome once capped the cistern. The cistern's bricks appeared to be machine-made, even though there is considerable variation in temper, width, and size. A ceramic drain pipe, approximately 4 inches in diameter, exits the cistern to the southwest toward the brick pavement (see Figure 4.1, Feature 3). It is hypothesized that the pipe probably functioned as a means of directing water overflow from the cistern away from the house.

Once the outline of the cistern was determined, it was bisected east/west, with the south half excavated first. The cistern was covered by grading deposits (Stratum 1), which overlaid several strata of demolition debris filling the interior of the mortar-lined cistern (Figure 4.6; Table 4.4). Much of the material recovered from these deposits, including the building stones, showed signs of burning. Stratum 2 was characterized by a very dark brown (10YR 2/2) sandy loam with a large quantity of building stone mixed with brick and mortar rubble. A cast iron pipe jutted out from the southern wall and extending down the length of the cistern. The pipe was probably attached to a pump

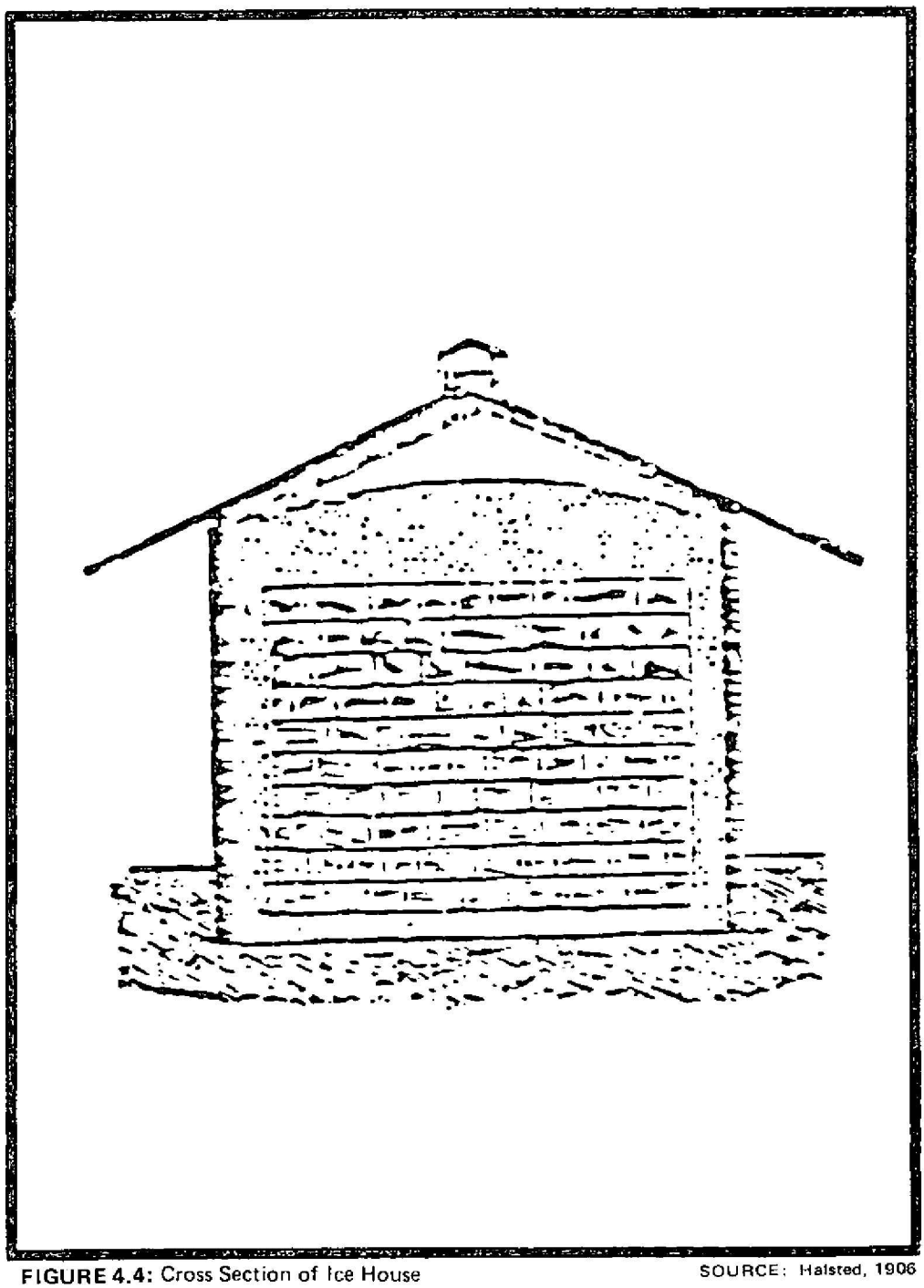


FIGURE 4.4: Cross Section of Ice House

SOURCE: Halsted, 1906

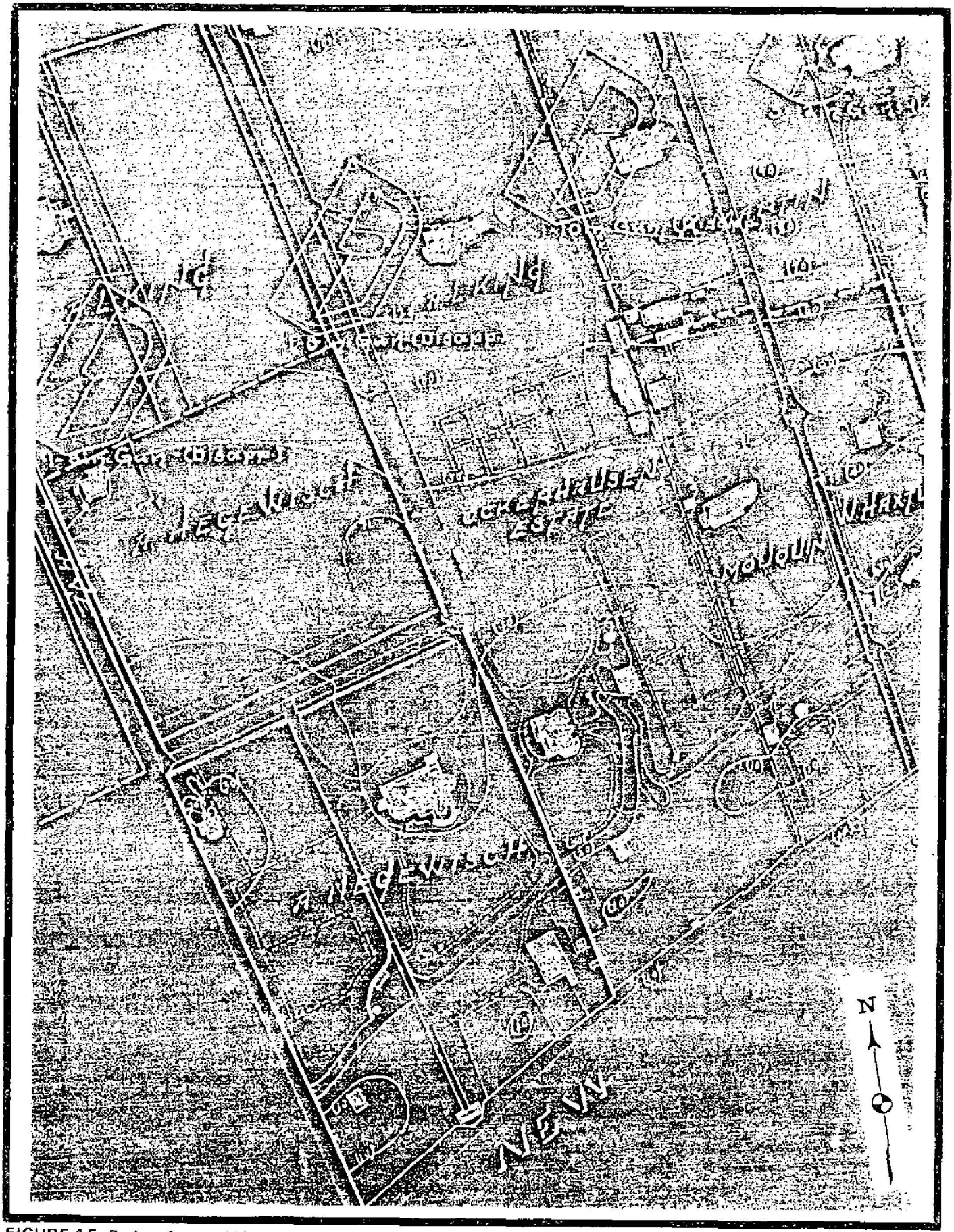


FIGURE 4.5: Project Area and Vicinity, 1894

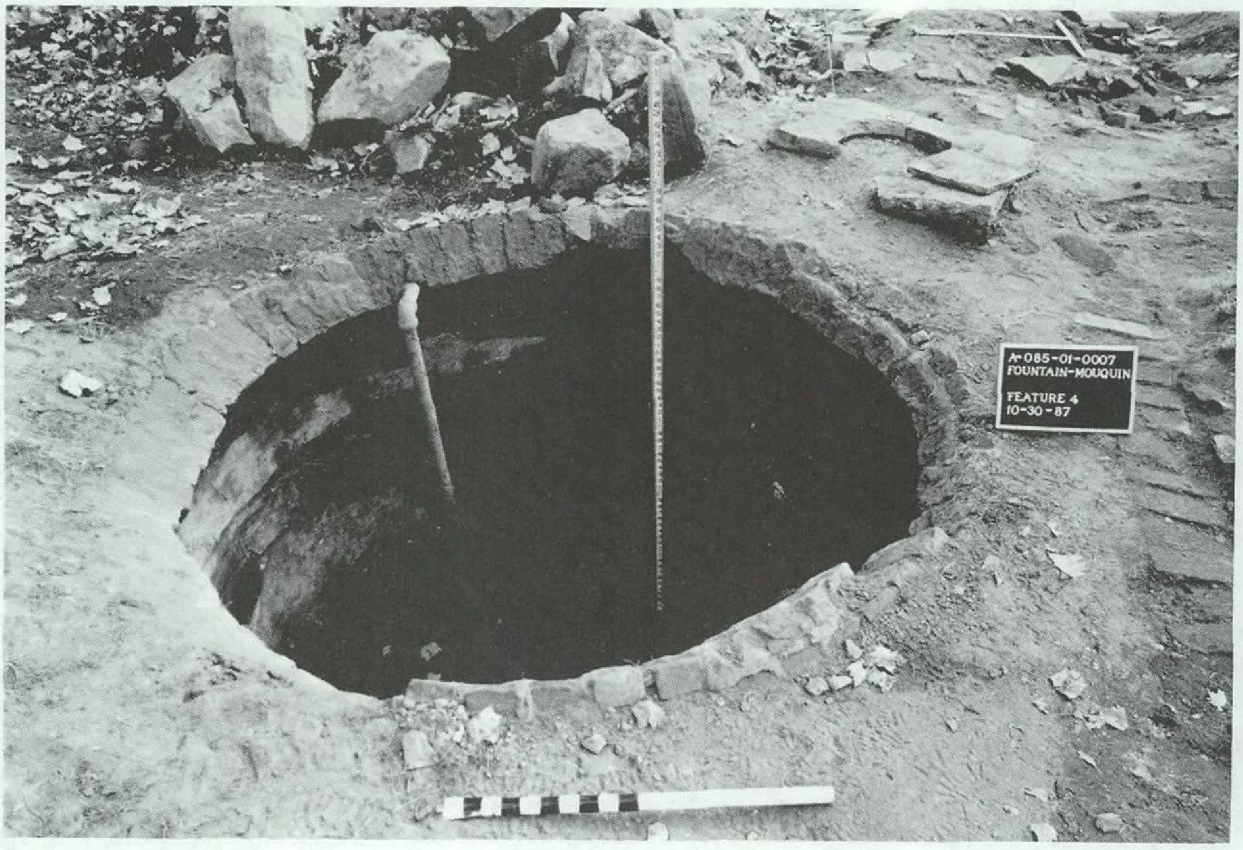
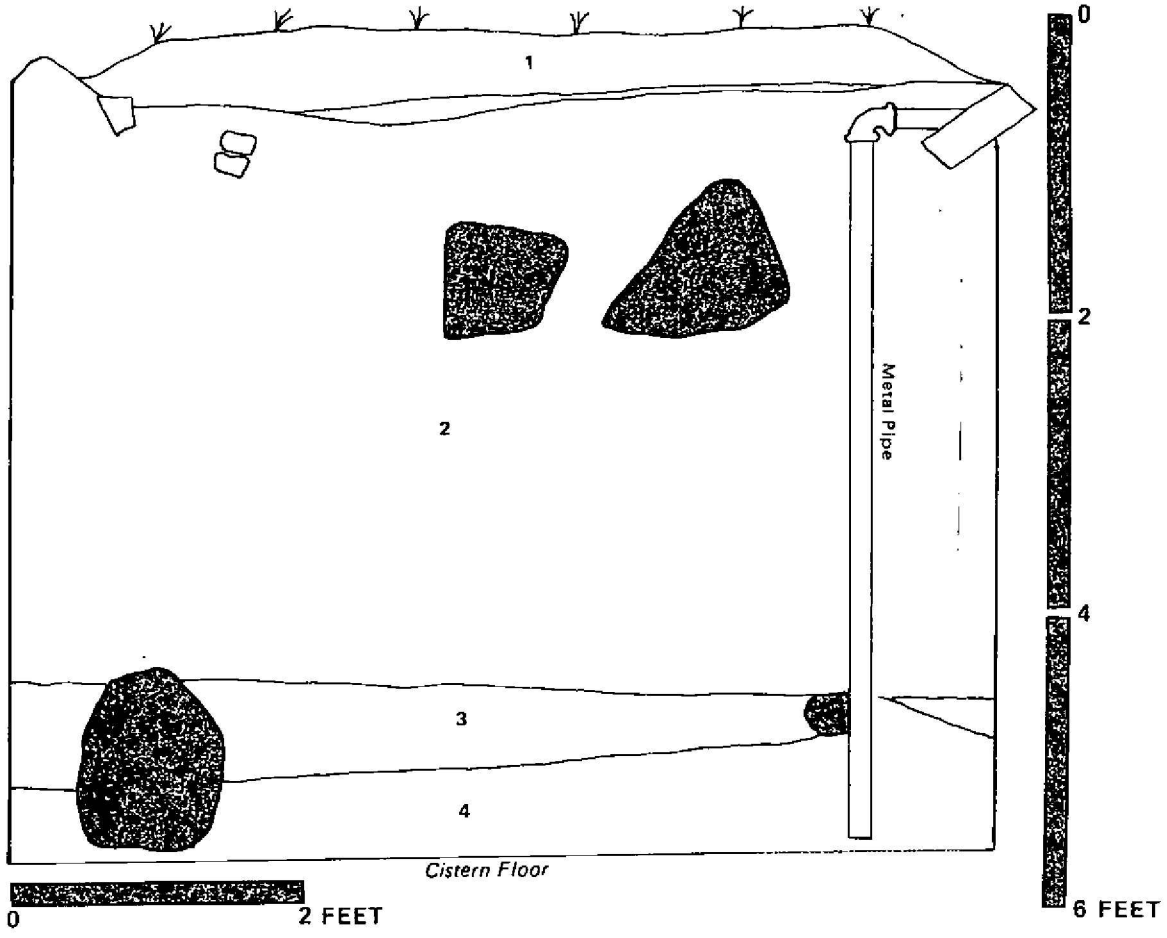


PLATE 4.4: Western Brick Cistern(Feature 4) Looking South .

BRICK CISTERN, FEATURE 4 STRATIGRAPHIC PROFILE NORTH WALL



Stratum 1 - 10YR 3/3 Dark Brown Sandy Loam, LANDSCAPE GRADING

Stratum 2 - 10YR 2/2 Very Dark Brown Sandy Loam, DEMOLITION DEBRIS–BUILDING STONE

Stratum 3 - 10YR 3/2 Very Dark Gray Brown Silty Sand, DEMOLITION DEBRIS–BRICK AND MORTAR

Stratum 4 - 7.5YR 2/0 Black Sand, SEDIMENTARY WASH

Stone

Brick

FIGURE 4.6: North Stratigraphic Profile, Feature 4 (CISTERN)

TABLE 4.4

BRICK CISTERN, FEATURE 4 STRATIGRAPHY

STRATUM NUMBER	MUNSELL NUMBER	MUNSELL COLOR	TEXTURE	DESCRIPTION	DEPTH
1	10YR 3/3	Dark brown	Sandy loam	Grading	0.14' to 0.54'
2	10YR 2/2	Very dark brown	Sandy loam	Demolition debris-building stone	0.54' to 4.80'
3	10YR 3/2	Very dark gray brown	Silty sand	Demolition debris-brick and mortar	4.80' to 5.30'
4	7.5YR 2/0	Black	Sand	Sedimentry wash	5.3/5.6' to 5.92/6.15'

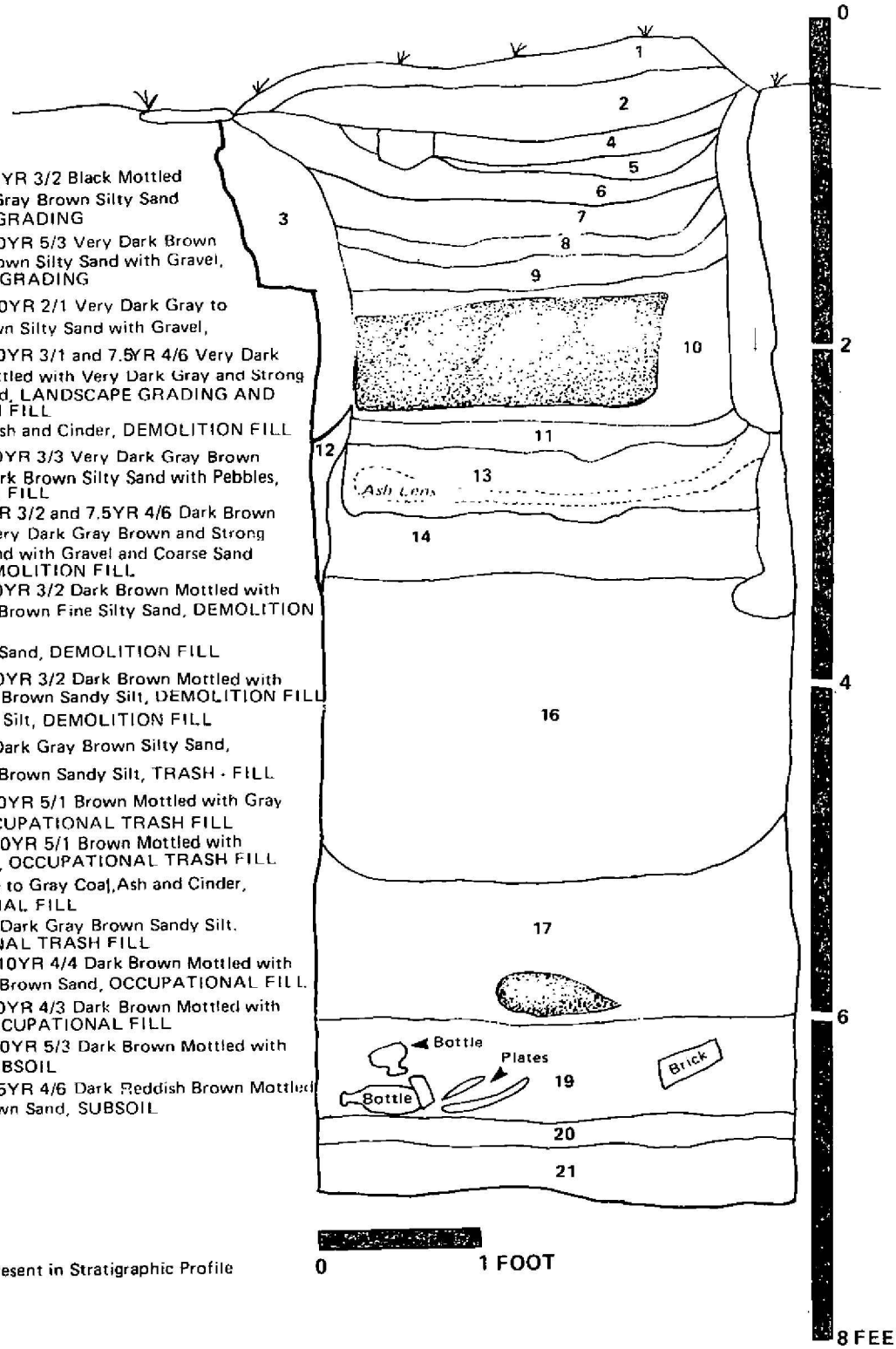
for extracting water from the cistern. Stratum 3, was a very dark grayish brown (10YR 3/2) sand silt, which contained a higher proportion of brick and mortar than the overlying Stratum 2. The large amount of brick (362.7kg) and capstone within this deposit represents the destruction of the cistern's brick-domed cap. The feature's lowest stratum (4) was a 0.5-foot deposit of black sand, which contained topsoil that had washed down into the cistern and accumulated above the feature's mortar-lined base.

Materials from Feature 4's fill, which consisted of only demolition debris, included 67 ceramic sherds (mostly undecorated whiteware), sun tinted bottle glass, and crown cap bottle closures. These artifacts provided an MCD of 1871 and a TPQ of 1891. Large quantities of architectural material (i.e., window glass, bricks, and dressed stone blocks) were also recovered from the demolition debris. The similarity of the artifact assemblages within these two deposits indicated a single depositional episode. In addition, the presence of large dressed-stone building blocks within the deposits suggested that these deposits resulted from the razing of the house and associated outbuildings by the Army in 1907/08.

Feature 5 was located approximately 18 feet west of Feature 1 and was first discovered during hand-clearing (Stage 1) (see Figure 4.1). The feature was a mortared brick shaft that measured 8.6 feet north-south by 5.4 feet east-west. In places, two to three courses of unmortared stone overlay the upper brick work, probably serving as the foundation to a frame building shown in the circa 1900 photograph of the house (see Plate 4.3). The southern portion of Feature 3 (a walkway), extended from the Feature 5 north wall. Bricks used in the construction of both features exhibited characteristics similar to the bricks used in Feature 4 (cistern) and all appear to have been machine-made.

Feature 5 was bisected east/west, with the south half excavated first. A series of grading/demolition deposits filled the upper 2.8 feet of the feature (Figure 4.7; Table 4.5). Two of these deposits were assumed to be builder's trenches (Strata 3 and 12) during their excavation, because a large stone slab in Stratum 10 appeared to be the base of the feature. However, further excavation and analysis revised this interpretation. Both strata were probably the result of staining from the brick walls and/or leaching from the adjacent soil deposits. The remaining lower deposits (Strata 4 to 11 and 13) were linked through cross-mend analyses, and contained both architectural and domestic-related artifacts. A total of 374 diagnostic ceramic sherds were recovered from these deposits, the majority of which consisted of undecorated whiteware and ironstone sherds. The assemblage yielded an MCD of 1869, and a TPQ of 1898 based on a clothing fastener, thus dating the deposit to Henri Mouquin's tenure of the property. The thirty year difference between the two dates is due to the large amount of undecorated whiteware and ironstone ceramics in the assemblage. These types of ceramics have such a

FEATURE 5, BRICK SHAFT STRATIGRAPHIC PROFILE NORTH WALL



Stratum 1 - 10YR 2/1 and 10YR 3/2 Black Mottled with Very Dark Gray Brown Silty Sand LANDSCAPE GRADING

Stratum 2 - 10YR 2/2 and 10YR 5/3 Very Dark Brown Mottled with Brown Silty Sand with Gravel, LANDSCAPE GRADING

Stratum 3 - 10YR 3/1 and 10YR 2/1 Very Dark Gray to Very Dark Brown Silty Sand with Gravel,

Stratum 4 - 10YR 3/2 and 10YR 3/1 and 7.5YR 4/6 Very Dark Gray Brown Mottled with Very Dark Gray and Strong Brown Silty Sand, LANDSCAPE GRADING AND DEMOLITION FILL

Stratum 5 - Gray to White Ash and Cinder, DEMOLITION FILL

Stratum 6 - 10YR 3/2 and 10YR 3/3 Very Dark Gray Brown Mottled with Dark Brown Silty Sand with Pebbles, DEMOLITION FILL

Stratum 7 - 10YR 3/3, 10YR 3/2 and 7.5YR 4/6 Dark Brown Mottled with Very Dark Gray Brown and Strong Brown Silty Sand with Gravel and Coarse Sand Inclusions, DEMOLITION FILL

Stratum 8 - 10YR 3/3 and 10YR 3/2 Dark Brown Mottled with Very Dark Gray Brown Fine Silty Sand, DEMOLITION FILL

Stratum 9 - 10YR 2/1 Black Sand, DEMOLITION FILL

Stratum 10 - 10YR 3/3 and 10YR 3/2 Dark Brown Mottled with Very Dark Gray Brown Sandy Silt, DEMOLITION FILL

Stratum 11 - 10YR 2/1 Black Silt, DEMOLITION FILL

Stratum 12 - 2.5Y 3/2 Very Dark Gray Brown Silty Sand,

Stratum 13 - 10YR 3/3 Dark Brown Sandy Silt, TRASH - FILL

Stratum 14 - 10YR 5/3 and 10YR 5/1 Brown Mottled with Gray Sandy Silt, OCCUPATIONAL TRASH FILL

✱ **Stratum 15** - 10YR 5/3 and 10YR 5/1 Brown Mottled with Gray Sandy Silt, OCCUPATIONAL TRASH FILL

Stratum 16 - 10YR 5/1 White to Gray Coal, Ash and Cinder, OCCUPATIONAL FILL

Stratum 17 - 10YR 3/2 Very Dark Gray Brown Sandy Silt, OCCUPATIONAL TRASH FILL

✱ **Stratum 18** - 7.5YR 3/2 and 10YR 4/4 Dark Brown Mottled with Dark Yellowish Brown Sand, OCCUPATIONAL FILL

Stratum 19 - 10YR 3/3 and 10YR 4/3 Dark Brown Mottled with Brown Sand, OCCUPATIONAL FILL

Stratum 20 - 10YR 3/3 and 10YR 5/3 Dark Brown Mottled with Brown Sand, SUBSOIL

Stratum 21 - 5YR 3/3 and 7.5YR 4/6 Dark Reddish Brown Mottled with Strong Brown Sand, SUBSOIL

Stone

✱ Stratum not Present in Stratigraphic Profile

FIGURE 4.7: North Stratigraphic Profile, Feature 5, (SHAFT)

TABLE 4.5

FEATURE 5 STRATIGRAPHY

STRATUM NUMBER	MUNSELL NUMBER	MUNSELL COLOR	TEXTURE	DESCRIPTION	DEPTH
1	10YR 2/1, 10YR 3/2	Black, mottled w/ very dark gray brown	Silty sand	Grading	0.33/0.55' to 0.61/0.75'
2	10YR 2/2, 10YR 5/3	Very dark brown, mottled w/ brown	Silty sand w/gravel	Grading	0.61/0.75' to 0.8/0.95'
3	10YR 3/1, 10YR 2/1	Very dark gray, to very dark brown	Silty sand	Demolition fill	0.8/0.95' to 2.57'
4	10YR 3/2, 10YR 3/1, 7.5YR 4/6	Very dark gray brown, mottled w/ very dark gray, and strong brown	Silty sand	Grading Demolition fill	0.8/0.95' to 0.93/1.10'
5	???? ?/?	Gray to white	Ash and cinder	Demolition fill burned debris grading	0.93/1.1' to 1.1/1.25'
6	10YR 3/2, 10YR 3/3	Very dark gray brown, mottled w/ dark brown	Silty sand w/pebbles	Demolition fill grading	0.93/1.1' to 1.30'
7	10YR 3/3, 10YR 3/2, 7.5YR 4/6	Dark brown, mottled w/ very dark gray brown, and strong brown	Silty sand, w/gravel, and coarse sand in-clusions	Grading demolition fill	1.30' to 1.37/1.55'
8	10YR 3/3, 10YR 3/2	Dark brown, mottled w/ very dark gray brown	Fine silty sand	Grading	1.37/1.5' to 1.58/1.67'
9	10YR 2/1	Black	Sand	Grading Demolition fill	1.58/1.67' to 1.77/1.96'

TABLE 4.5 (Continued)

10	10YR 3/3, 10YR 3/2	Dark brown, mottled w/ very dark gray brown	Sandy silt	Demolition fill	1.77/1.96' to 2.57'
11	10YR 2/1	Black	Silt	Demolition fill	2.57' to 3.05/3.42'
12	2.5Y 3/2	Very dark gray brown	Silty sand	Demolition fill	2.65/2.67' to 3.62/4.40'
13	10YR 3/3	Dark brown	Sandy silt	Occupational fill	3.10' to 3.50'
14	10YR 5/3, 10YR 5/1	Brown, mottled w/ gray	Sandy silt sand	Occupational fill	3.10' to 3.50'
15	10YR 5/3, 10YR 5/1	Brown, mottled w/ gray	Sandy silt	Occupational fill subsoil	3.50' to 3.8/4.40'
16	10YR 5/1	White to gray	Coal, ash, and cinder	Occupational fill	3.6/4.4' to 5.0/5.32'
17	10YR 3/2	Very dark gray brown	Sandy silt	Occupational fill	5.0/5.32' to 6.15/6.2'
18	7.5YR 3/2, 10YR 4/4	Dark brown, sand mottled w/ dark yellowish brown	Sand	Occupational fill	5.4/5.6' to 5.8/6.15'
19	10YR 3/3, 10YR 4/3	Dark brown, mottled w/ brown	Sand	Occupational fill	6.15/6.2' to 6.55/6.75'
20	10YR 3/3, 10YR 5/3	Dark brown, mottled w/ brown	Sand	Subsoil	6.75' to 6.85/6.9'
21	5YR 3/3, 7.5YR 4/6	Dark reddish brown mottled w/ strong brown	Sand	Subsoil	6.85/6.9' to 7.2/7.3'

wide manufacturing date range that they are not very time sensitive and, therefore, produce a much lower mean date.

Directly below these deposits were several strata (14 to 19) of domestic trash (Figure 4.7; Table 4.5). These deposits were linked through cross-mend analyses, and also dated to the Mouquin occupation of the site. Stratum 16 was a 1.7-foot-thick deposit of coal, ash, and cinder, probably from cleaning out a stove and/or fireplace. However, the majority of recovered ceramics, glass and faunal materials was not burned. This would suggest that cinder and ash were stored and then periodically dumped into the feature in a cooled state. Diagnostic artifacts in Stratum 16 produced an MCD of 1879 and a TPQ of 1898.

The next series of strata (17, 18, and 19) represented various domestic trash deposits (Figure 4.7; Table 4.5). Numerous whole and fragmentary ceramic and glass vessels were recovered from these deposits. Items included American, French, and English ceramic tablewares (e.g., plates and cups), a ceramic candle stick, several pieces of stemware, wine bottles, and personal items such as ointment pots, a comb, mirror, and patent medicine bottles (Plate 4.5). The assemblage yielded an MCD of 1872 and an TPQ of 1880 (see Chapter V for a more detailed discussion of this assemblage). These five domestic-related deposits (Strata 14 to 19) overlay sterile glacial outwash sands (Stratum 20) (Figure 4.6, Table 4.5). Several very small brick fragments were recovered from Stratum 20, probably a result of the feature's construction or deterioration of the shaft's walls.

The brick walls of Feature 5 extended to the top of Stratum 20, 6.2 feet below the surface. The brick bond used in the construction of the feature was the American Common Bond type (McKee 1973:50). Both the north and south brick walls of the feature sloped inward with depth (Plate 4.6).

The function of Feature 5 is unclear. The feature may have been used as a privy even though no evidence for night soil was recovered from any of the deposits and the brick walls and sandy subsoil did not exhibit any signs of staining. A similar lack of evidence was encountered at the recent excavations of a mid-nineteenth century privy at the Greenwich Muse Site in Lower Manhattan by Dr. Joan Geismar. It was not until chemical analyses were performed on soil samples from a brick-lined feature that its function as a privy was confirmed. These analyses identified the presence of parasites that were related to human fecal material (Geismar 1989). Investigations by Geismar into nineteenth century sanitary practices in New York City indicated that most privies were cleaned at regular intervals. Lime and ash were used as cleaning agents because of their caustic properties. It was hypothesized that regular cleaning of privies and the use of caustic agents prevented staining and helped to dissipate any night soil that may have

PLATE 4.5: Domestic Refuse Deposit in Lower Reaches(Stratum 19) of Feature 5

PLATE 4.6: Sloping North And West Walls of Feature 5 Looking East.

been missed (Geismar 1989). However, since no soil analyses were performed on any of Feature 5's deposits, its use as a privy could not be substantiated.

Feature 5 could not have functioned as a cistern because the brick walls were not lined with mortar and the base of the feature consisted of a porus sterile sand. Thus, preventing water storage. In addition the feature probably did not function as a well either, because no evidence of water was found in any of the excavated trash deposits or in the sterile subsoils (i.e., iron oxides) below the feature's brick walls. However, the fact that the north and south walls slope inward suggests that it may have served as a trench silo for storing ensilage (green fodder).

The feature is very similar to the cross section of a lined trench silo illustrated in Farm Buildings (Carter and Foster 1941:264). The French began experimenting with the preservation of ensilage in the early 1800s. The French plan for storing ensilage consisted of placing it into pits with tapered walls which would compress the ensilage to create an air tight environment that would inhibit spoilage. Soil was then piled over the ensilage in order to prevent decay (Periam 1984:179-180). The wood super-structure over Feature 5 may have served the same purpose as the soil covering and at the same time permit easier access to the ensilage. If a trench silo was to be used year after year, brick or cement was recommended as a lining. Since the VanDeventer- Fountain property was a working farm at one time, a place was needed to store fodder for animal feed. Feature 5 may have served this function. Whatever its original function, it appears to have been used as a trash dump during Henri Mouquin's tenure.

Feature 6, a mortar-lined brick cistern, was located approximately 2 feet east of the house (see Figure 4.1). This cistern was also discovered during the wall clearing stage of the data recovery effort. No evidence remained of the cap or cover to the feature; however, a section of the cistern's southern side was covered by a relatively modern concrete pad (Plate 4.7). The removal of the pad revealed a 4-inch diameter ceramic drain pipe that exited the feature to the south. The pipe was similar to the one found in the western cistern (Feature 4), and probably also served to control overflow.

The cistern was bisected east-west and the south half removed. Excavation documented a 0.4 foot thick grading deposit that, for the most part, was consistent with other areas of the site (Table 4.6). This stratum overlaid various deposits of demolition debris, which extended to the base of the cistern (Figure 4.8). Recovered material consisted primarily of architectural-related items, such as bricks, mortar, a hinge, window glass, and nails. Diagnostic artifacts ranged in date from the eighteenth to early twentieth centuries. The interior demolition fills were probably the result of the house's razing in 1907/08.

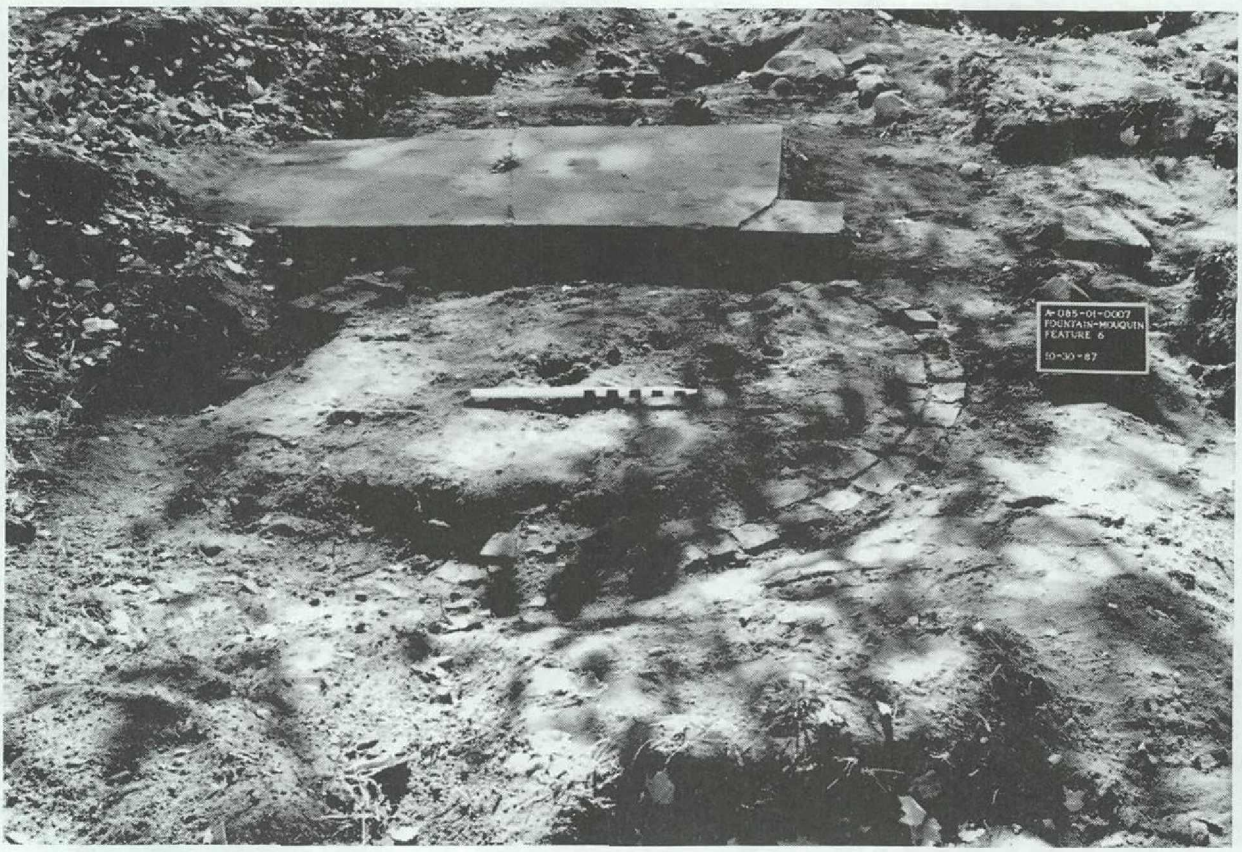


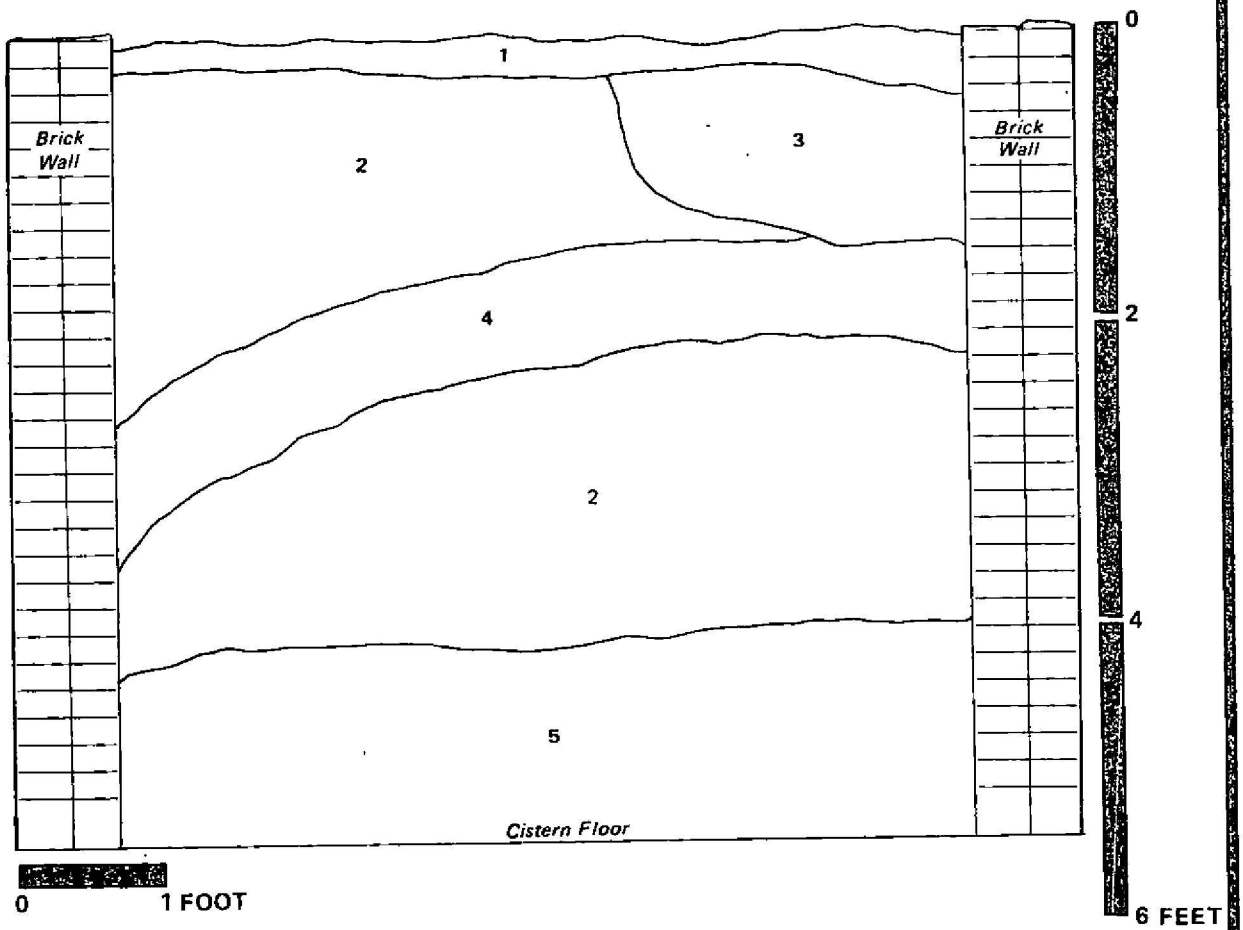
PLATE 4.7: *Eastern* Brick Cistern(Feature 6) Looking West.

TABLE 4.6

FEATURE 6 STRATIGRAPHY

STRATUM NUMBER	MUNSELL NUMBER	MUNSELL COLOR	TEXTURE	DESCRIPTION	DEPTH
1	10YR 3/2	Very dark gray brown	Sandy silt	Grading	0.30' to 0.5/0.7'
2	10YR 3/2, 7.5YR 4/6	Very dark gray brown, mottled w/ strong brown	Sandy silt	Demolition debris	0.5/0.7' to 4.3/4.20'
3	10YR 3/2, 7.5YR 4/6	Very dark gray brown, mottled w/ strong brown	Sandy silt	Demolition debris	1.20' to 1.60'
4	10YR 3/2	Very dark gray brown to very dark brown	Sandy silt	Demolition debris	4.3/4.20' to 6.05'
5	10YR 3/2, 10YR 2/2	Very dark gray brown to very dark brown	Silty sand	Demolition debris	4.3/4.20' to 6.05'

BRICK CISTERN, FEATURE 6 STRATIGRAPHIC PROFILE NORTH WALL



Stratum 1 - 10YR 3/2 Very Dark Gray Brown Sandy Silt, LANDSCAPE GRADING

Stratum 2 - 10YR 3/2 and 7.5YR 4/6 Very Dark Gray Brown Mottled with Strong Brown Sandy Silt, DEMOLITION DEBRIS

Stratum 3 - 10YR 3/2 and 7.5YR 4/6 Very Dark Gray Brown Mottled with Strong Brown Sandy Silt, DEMOLITION DEBRIS

Stratum 4 - 10YR 3/2 Very Dark Gray Brown Sandy Silt, DEMOLITION DEBRIS

Stratum 5 - 10YR 3/2 and 10YR 2/2 Very Dark Gray Brown to Very Dark Brown Silty Sand, DEMOLITION DEBRIS

FIGURE 4.8: North Stratigraphic Profile, Feature 6 (CISTERN)

Feature 8, a historic shell midden, was identified during the backhoe clearing of the west yard area, and is located approximately 30 feet west of Feature 2 (Figure 4.1). Prior to excavation, the immediate area surrounding the exposed shell was troweled to further delineate the feature's extent. Then two units (8 and 10) were laid over the deposit in order to sample the feature (Plate 4.8).

The units exposed a modern pipe trench partially truncating the western portion of the shell deposit (Plate 4.8). The feature strata (Table 4.7, Strata 3, 5 and 9) contained oysters, hard and soft shell clams, and whelk, in addition to ceramics, bottle and window glass, and unidentifiable corroded metal fragments. The diagnostic artifacts yielded an MCD of 1786 and a TPQ of 1800. Adjacent to the shell midden was a trash deposit (Stratum 8) (Figure 4.9). The assemblage within this deposit contained very little shell, and produced an MCD of 1833 with a TPQ of 1820.

Feature 15 was a second shell midden identified during machine stripping. It was located 12 feet northwest of Feature 1 (see Figure 4.1). Excavation of Unit 20 within the feature revealed a series of linear shell and trash deposits (Strata 1 to 6) oriented north/south (Figure 4.10, Table 4.8). The shell deposits (Strata 1, 3, and 6) consisted of oyster, hard and soft shell clams, with lesser amounts of whelk, bay scallops, and snails. Diagnostic material recovered from the upper stratum (1) of the shell deposit exhibited a mixture of early to late nineteenth-century ceramics and glass, resulting in an MCD of 1838 and a glass TPQ of 1880. Such a late TPQ may have resulted from mixing during grading activities on the site, or from the backhoe clearing during initial data recovery efforts. The remaining two strata (3 and 6) contained concentrations of shell, and produced respective MCDs of 1776 and 1832, with TPQs of 1850 and 1800. Three small trash deposits (Strata 2, 5 and 4, Level 1) were located adjacent to Feature 15 (Figure 4.10).

Feature 11, a 4.5-foot-deep circular clay-lined cistern, was identified during the excavation of Unit 9 (Figure 4.1). The cistern was first encountered as a semi-circular dark band that extended from the north to west walls of the unit. Two additional units (13 and 16) were excavated to the north and northwest in order to define the cistern's configuration (see Figure 4.1, Plate 4.9). No unit was placed in the southwest quarter of the feature because the stairwell to Feature 1 truncated this area (Figure 4.11, Plate 4.10). The northern half of the cistern was also truncated by the excavation of two parallel trenches for electrical wires (Figure 4.12). The cistern had a diameter of approximately six feet, with clay-lined walls that averaged between 1.3 to 2.8 feet wide. The feature extended to a depth of 5 feet below the surface (Figure 4.11, Plate 4.11). The cistern's eastern wall appeared to have truncated the builder's trench (Strata 2 and 4) associated with the main house's west foundation wall (Figure 4.11, Table 4.9).

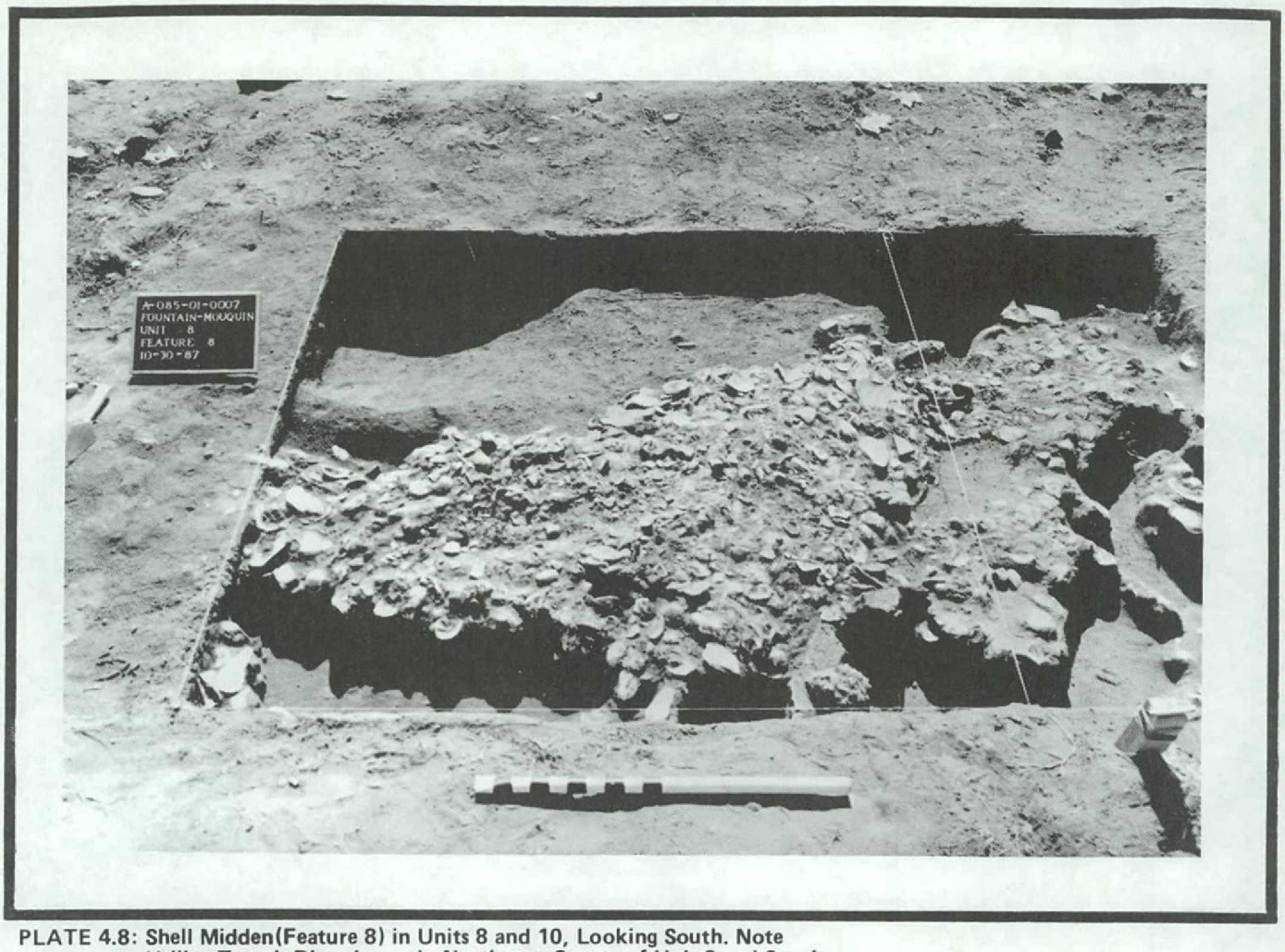


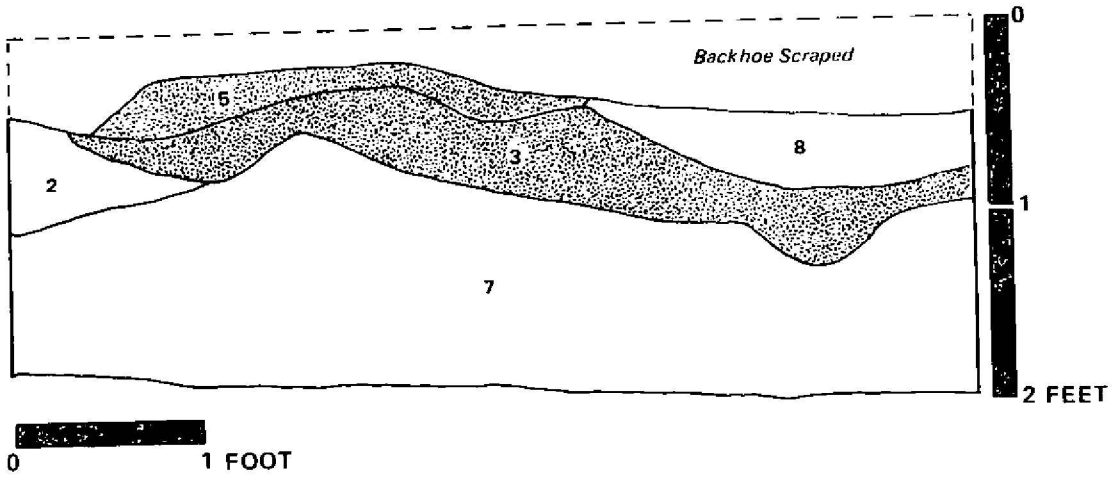
PLATE 4.8: Shell Midden(Feature 8) in Units 8 and 10, Looking South. Note Utility Trench Disturbance in Northwest Corner of Unit 8 and South Half of Unit 10.

TABLE 4.7

EXCAVATION UNIT 8 STRATIGRAPHY

STRATUM NUMBER	MUNSELL NUMBER	MUNSELL COLOR	TEXTURE	DESCRIPTION	DEPTH
1	10YR 2/2	Very dark brown	Fine sandy silt	Grading	0.7' to 1.2/1.6'
2	5YR 4/6, 5YR 3/2	Yellowish red mottled w/ dark red brown	Silty sand	Pipe trench fill	0.7/0.8' to 2.7'
3	7.5YR 4/6	Strong brown	Silty sand	Shell-Feature 8	0.7/0.85' to 1.1/1.4'
4	5YR 2.5/1	Black mottled w/ brown	Sandy silt	Coal fill	0.85/0.95' to 0.9/1.25'
5	7.5YR 3/2	Dark brown	Silty sand	Shell-Feature 8	0.9/1.0' to 0.9/1.05'
6	10YR 3/3	Dark brown	Sandy silt	Pipe trench fill	0.85/1.0' to 1.0/1.1'
7	7.5YR 5/6	Strong brown	Sand	Subsoil	1.25/1.4' to 2.5/2.6'
8	7.5YR 3/2, 7.5YR 4/6	Dark brown mottled w/ strong brown	Silty sand	Trash deposit	0.9/1.3' to 1.1/1.3'
9	5YR 4/6, 5YR 3/2	Yellowish red mot-led w/ dark brown	Silty sand	Shell-Feature 8	0.9/0.95' to 0.95/1.0'
10	7.5YR 5/6	Strong brown	Sand	Subsoil	1.45/1.7' to 2.6/2.75'

EXCAVATION UNIT 8 STRATIGRAPHIC PROFILE EAST WALL



Stratum 2 - 5YR 4/6 and 5YR 3/2 Yellowish Red Mottled with Dark Red Brown Silty Sand, PIPE TRENCH FILL

Stratum 3 - 7.5YR 4/6 Strong Brown Silty Sand, SHELL-FEATURE 8

Stratum 5 - 7.5 YR 3/2 Dark Brown Silty Sand, SHELL- FEATURE 8

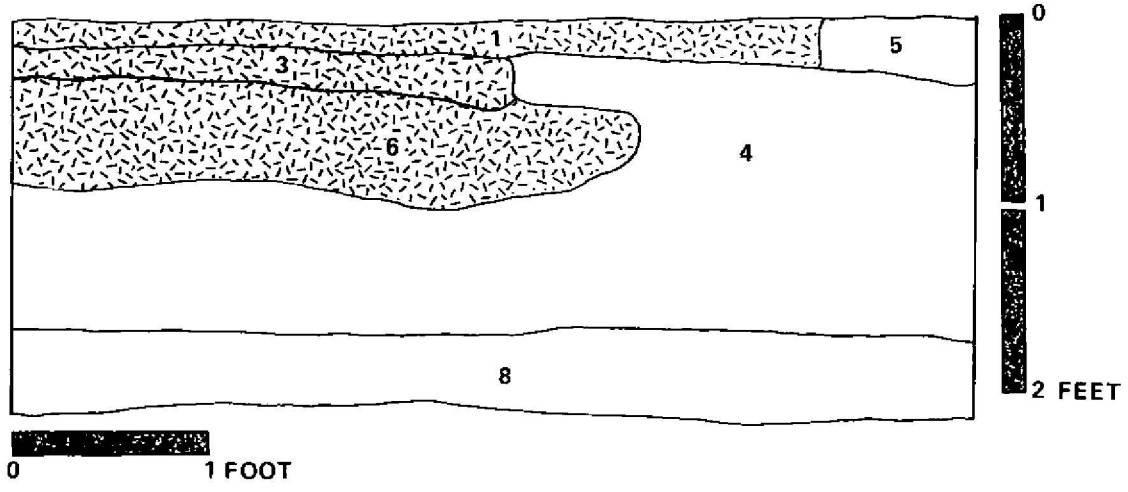
Stratum 7 - 7.5YR 5/6 Strong Brown Sand, SUBSOIL

Stratum 8 - 7.5YR 3/2 and 7.5YR 4/6 Dark Brown Mottled with Strong Brown Silty Sand, TRASH DEPOSIT

Feature 8

FIGURE 4.9: East Stratigraphic Profile, Excavation Unit 8, Feature 8

EXCAVATION UNIT 20 STRATIGRAPHIC PROFILE NORTH WALL



Stratum 1 - 10YR 2/2 and 10YR 3/3 Very Dark Brown to Dark Brown Loamy Sand, SHELL DEPOSIT- FEATURE 15

✱ **Stratum 2** - 10YR 3/2 and 10YR 3/4 Very Dark Gray Brown Mottled with Dark Yellowish Brown Compact Clayey Silt, TRASH - FILL

Stratum 3 - 7.5 YR 4/4 and 10YR 3/3 Brown Mottled with Dark Brown Silty Sand, SHELL DEPOSIT- FEATURE 15

Stratum 4 - 7.5YR 4/6 and 10YR 3/3 Brown Mottled with Dark Brown Sand, LEVEL 1:TRASH FILL, LEVEL 2-4: SUBSOIL

Stratum 5 - 7.5YR 4/6 and 10YR 3/3 Strong Brown Mottled with Dark Brown Silty Sand, TRASH – FILL

Stratum 6 - 10YR 3/3 Dark Brown Sand, SHELL DEPOSIT – FEATURE 15

✱ **Stratum 7** - 10YR 3/3 and 7.5YR 4/6 Dark Brown Mottled with Strong Brown Sand, SUBSOIL

Stratum 8 - 5YR 4/6 Yellowish Red Sand, SUBSOIL RODENT DISTURBANCE

✱ **Stratum 9** - 10YR 3/3 and 5YR 4/6 Dark Brown Mottled with Yellowish Red Sand, POSSIBLE RODENT DISTURBANCE

FEATURE 15

✱ Stratum not Present in Stratigraphic Profile Shown

FIGURE 4.10:North Stratigraphic Profile, Excavation Unit 20, Feature 15

TABLE 4.8

EXCAVATION UNIT 20 STRATIGRAPHY

STRATUM NUMBER	MUNSELL NUMBER	MUNSELL COLOR	TEXTURE	DESCRIPTION	DEPTH
1	10YR 2/2-3/3	Very dark brown to dark brown	Loamy sand	Shell deposit-Feature 15	0.53/0.91' to 0.65/0.94'
2	10YR 3/2, 10YR 3/4	Very dark gray brown, mottled w/ dark yellowish brown	Compact clayey silt	Trash-fill	0.45' to 0.75'
3	7.5YR 4/4, 10YR 3/3	Brown, mottled w/ dark brown	Silty sand	Shell deposit Feature 15	0.65/0.96' to 0.98/1.12'
4	5YR 2.5/1	Black mottled w/ brown	Sandy silt	Coal fill	0.85/0.95' to 0.9/1.25'
5	7.5YR 3/2	Dark brown	Silty sand	Shell-Feature 8	0.9/1.0' to 0.9/1.05'
6	10YR 3/3	Dark brown	Sandy silt	Pipe trench fill	0.85/1.0' to 1.0/1.1'
7	10YR 3/3, 7.5YR 4/6	Dark brown, mottled w/ strong brown	Sand	Poss. rodent disturbance	1.50' to 1.5/1.75'
8	5YR 4/6	Yellowish red	Sand	Subsoil	2.5/2.3' to 2.65/2.68'
9	10YR 3/3, 5YR 4/6	Dark brown, mottled w/ yellowish red	Sand	Poss. rodent	2.67' to 3.7/4.05'

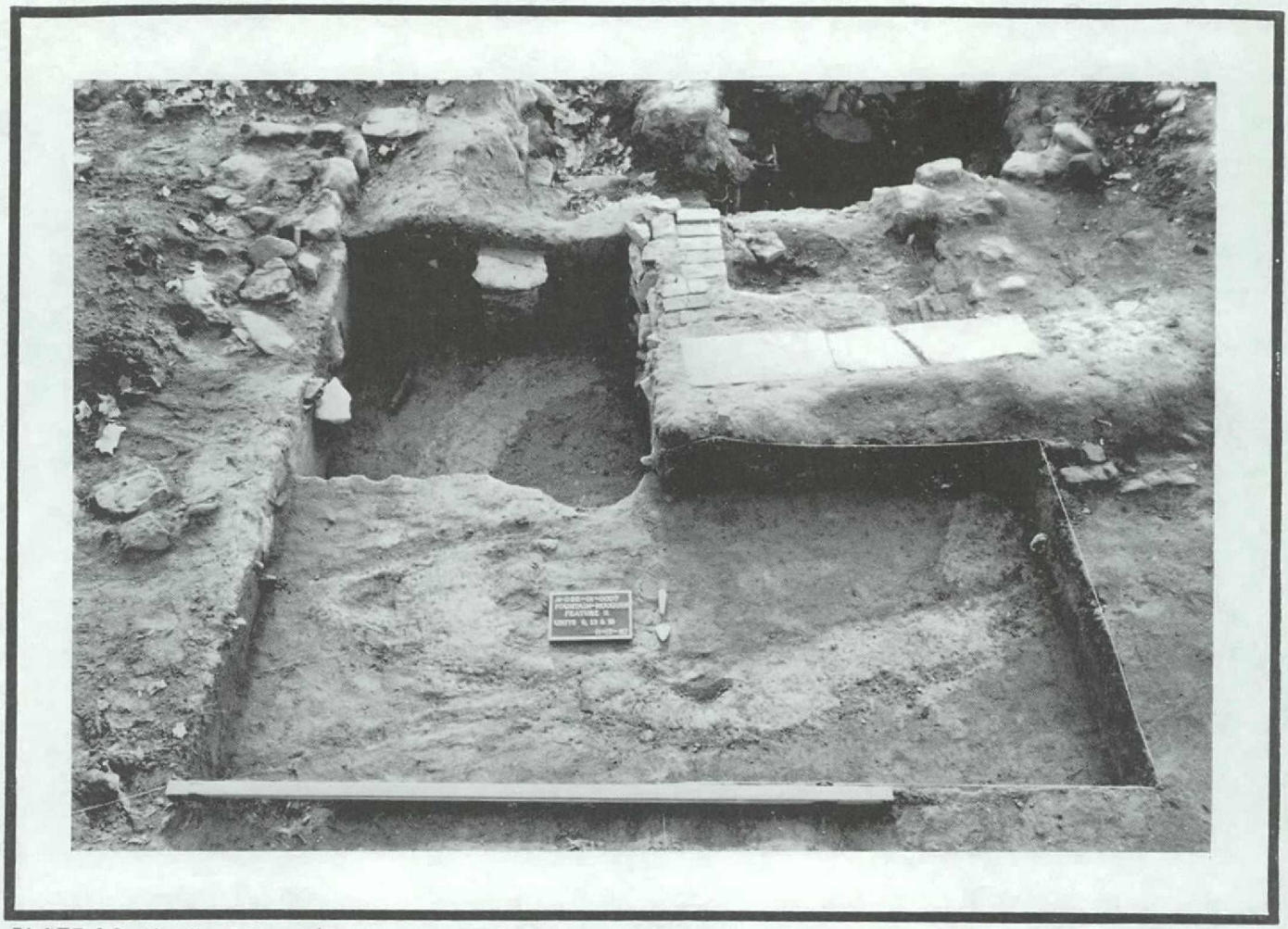
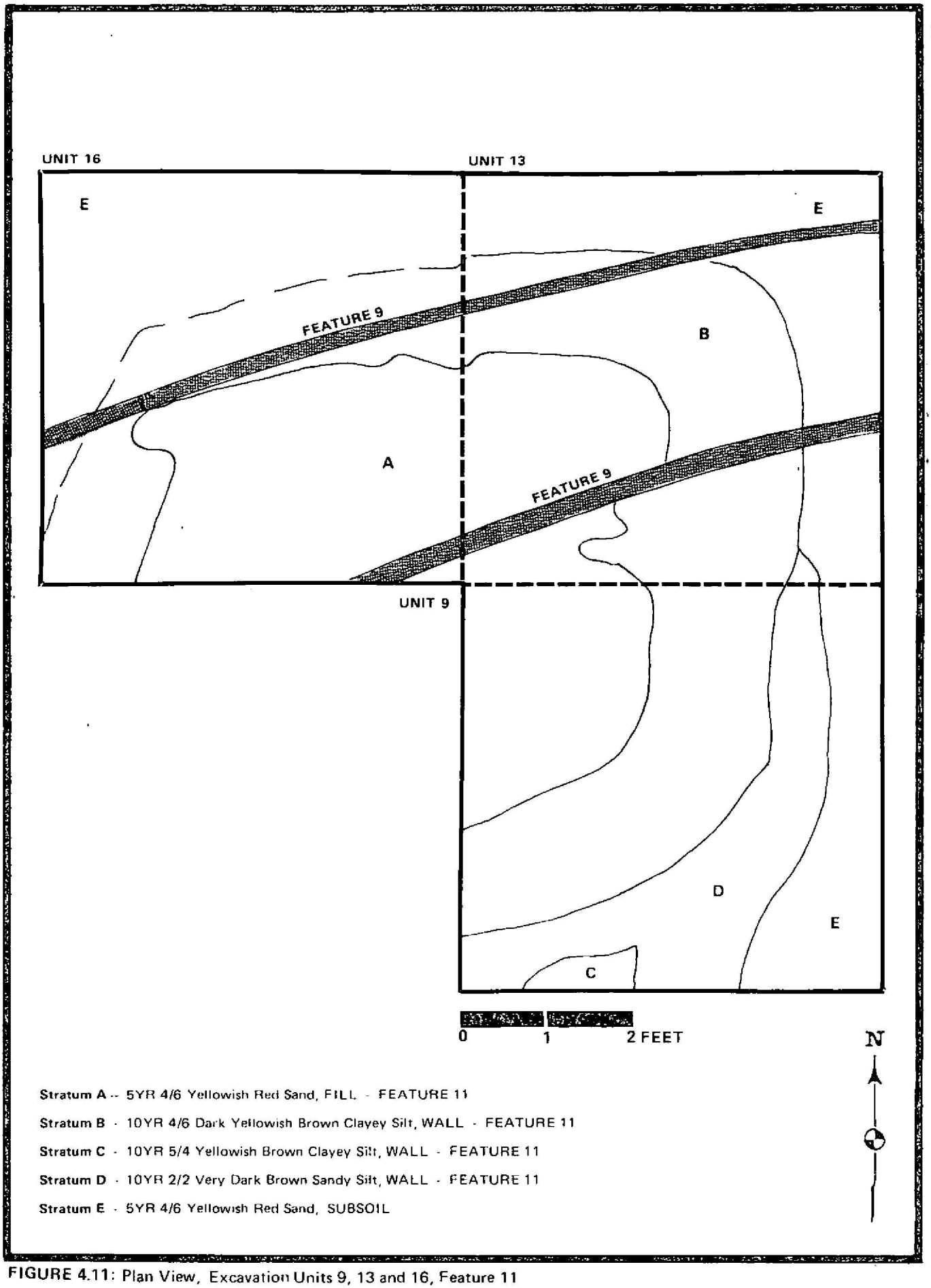


PLATE 4.9: Clay-lined Cistern(Feature 11) in Units 9, 13, and 16, Looking South.
Note Feature 1 to the Southwest.



Stratum A -- 5YR 4/6 Yellowish Red Sand, FILL - FEATURE 11

Stratum B - 10YR 4/6 Dark Yellowish Brown Clayey Silt, WALL - FEATURE 11

Stratum C - 10YR 5/4 Yellowish Brown Clayey Silt, WALL - FEATURE 11

Stratum D - 10YR 2/2 Very Dark Brown Sandy Silt, WALL - FEATURE 11

Stratum E - 5YR 4/6 Yellowish Red Sand, SUBSOIL

FIGURE 4.11: Plan View, Excavation Units 9, 13 and 16, Feature 11

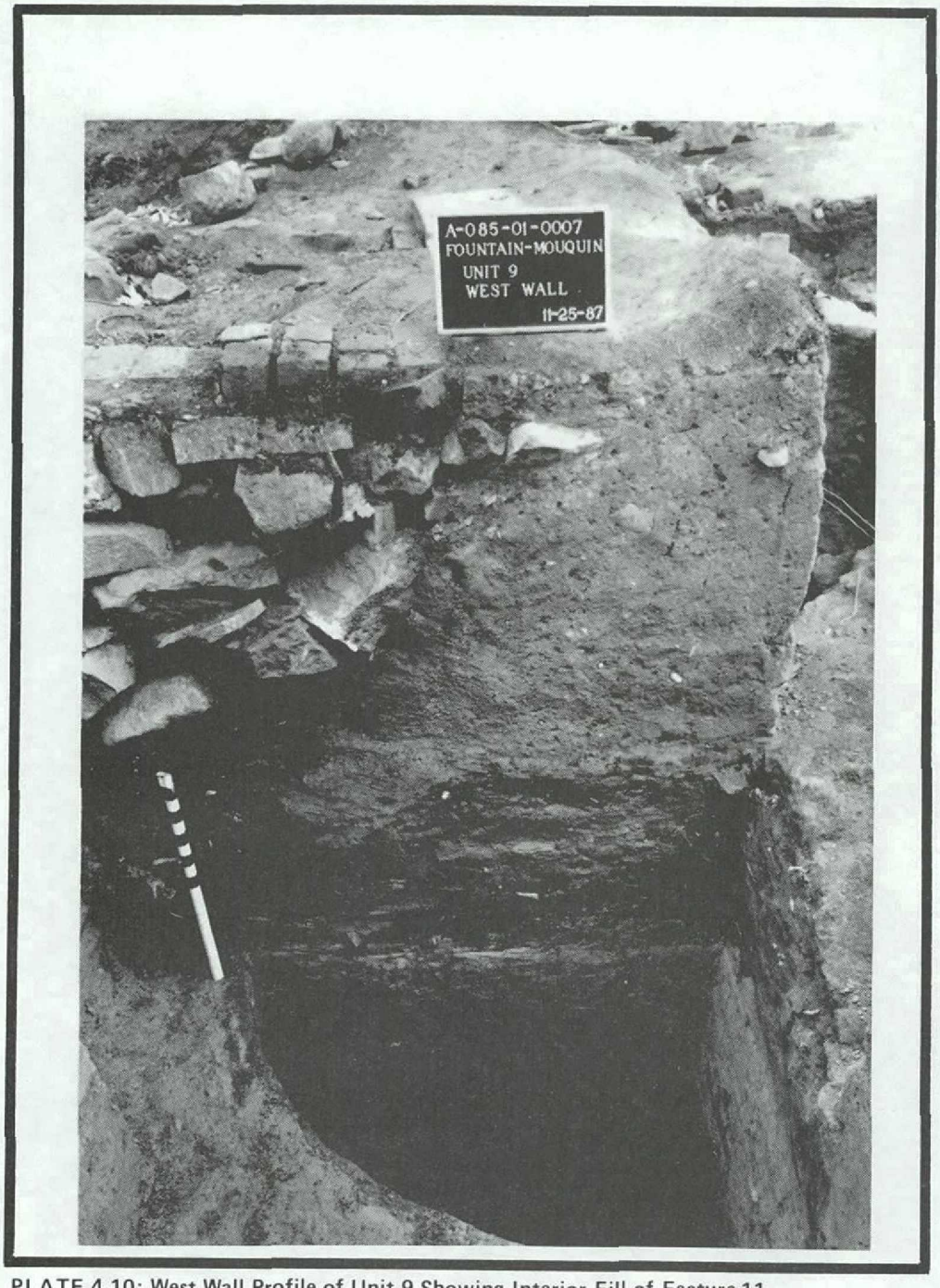
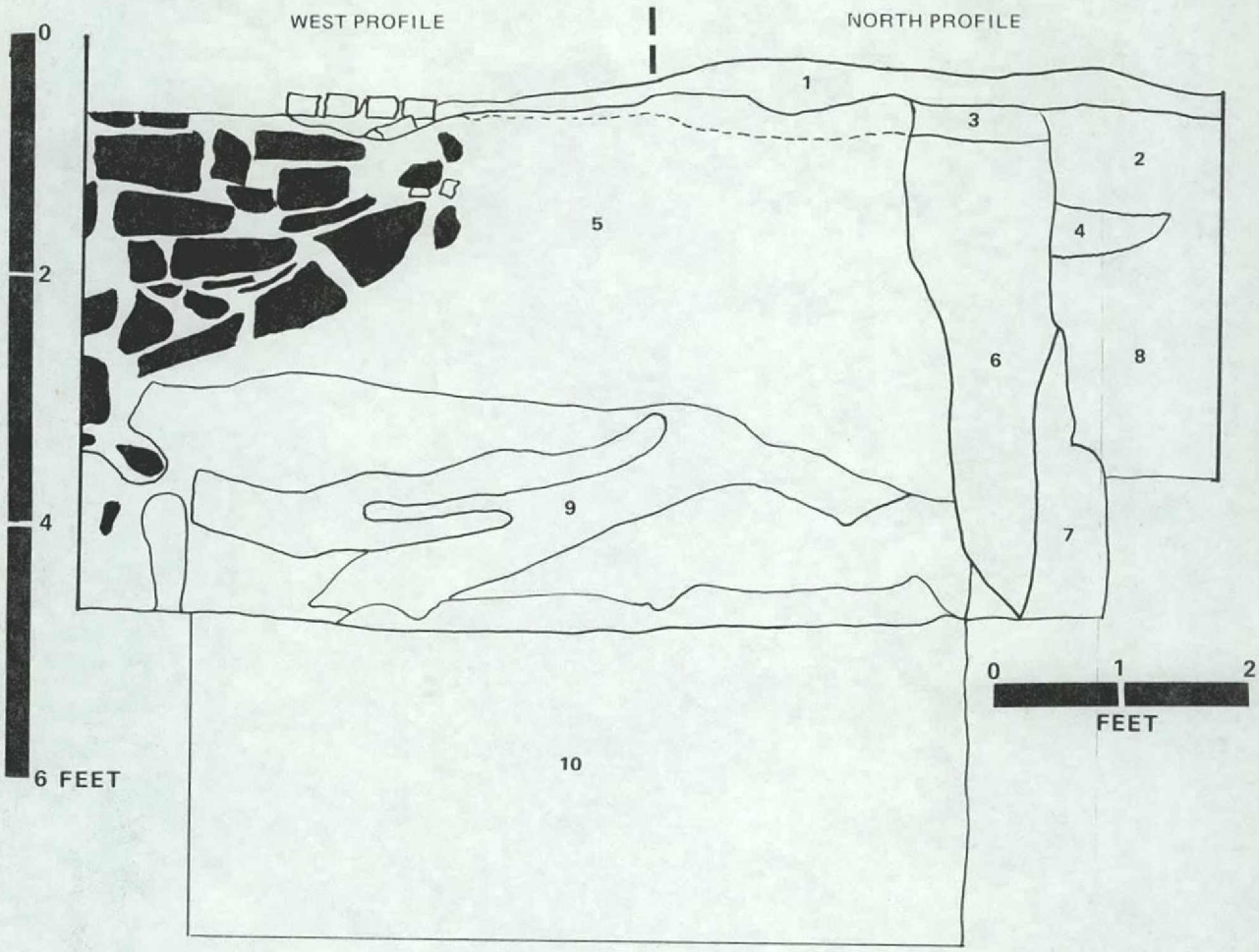


PLATE 4.10: West Wall Profile of Unit 9 Showing Interior Fill of Feature 11 (Cistern) and Stairwell Wall to Feature 1.

EXCAVATION UNIT 9 STRATIGRAPHIC PROFILE WEST AND NORTH WALL



Stratum 1 - 10YR 2/2 Very Dark Brown Sandy Silt with Gravel, LANDSCAPE GRADING

Stratum 2 - 10YR 2/2 Very Dark Brown Silty Sand, BREEZEWAY BUILDERS TRENCH TO HOUSE FOUNDATION

Stratum 3 - 10YR 3/4 and 10YR 4/2 Dark Yellowish Brown to Dark Grayish Brown Sandy Silt, YARD DEPOSIT

Stratum 4 - 10YR 2/2 and 7.5YR 3/4 Very Dark Brown to Dark Brown Sand with Gravel, BUILDERS TRENCH TO HOUSE FOUNDATION

Stratum 5 - 6YR 4/6 Yellowish Red Sand, FILL-FEATURE 11

Stratum 6 - 10YR 4/6 and 10YR 5/8 Dark Yellowish Brown and Yellowish Brown Silty Clay, FEATURE WALL

Stratum 7 - 10YR 5/4 and 10YR 2/2 Yellowish Brown and Very Dark Brown Silty Clay, EXTERIOR FEATURE WALL

Stratum 8 - 5YR 4/6 Yellowish Red Sand, SUBSOIL

Stratum 9 - 10YR 3/3 and 10YR 4/5 Dark Brown and Yellowish Brown Silty Clay, FILL-FEATURE 11

Stratum 10 - 10YR 5/3 Brown with Iron Oxide Stain Clay, BASE OF FEATURE

Stone

Brick

FIGURE 4.12: West and North Stratigraphic Profile, Excavation Unit 9

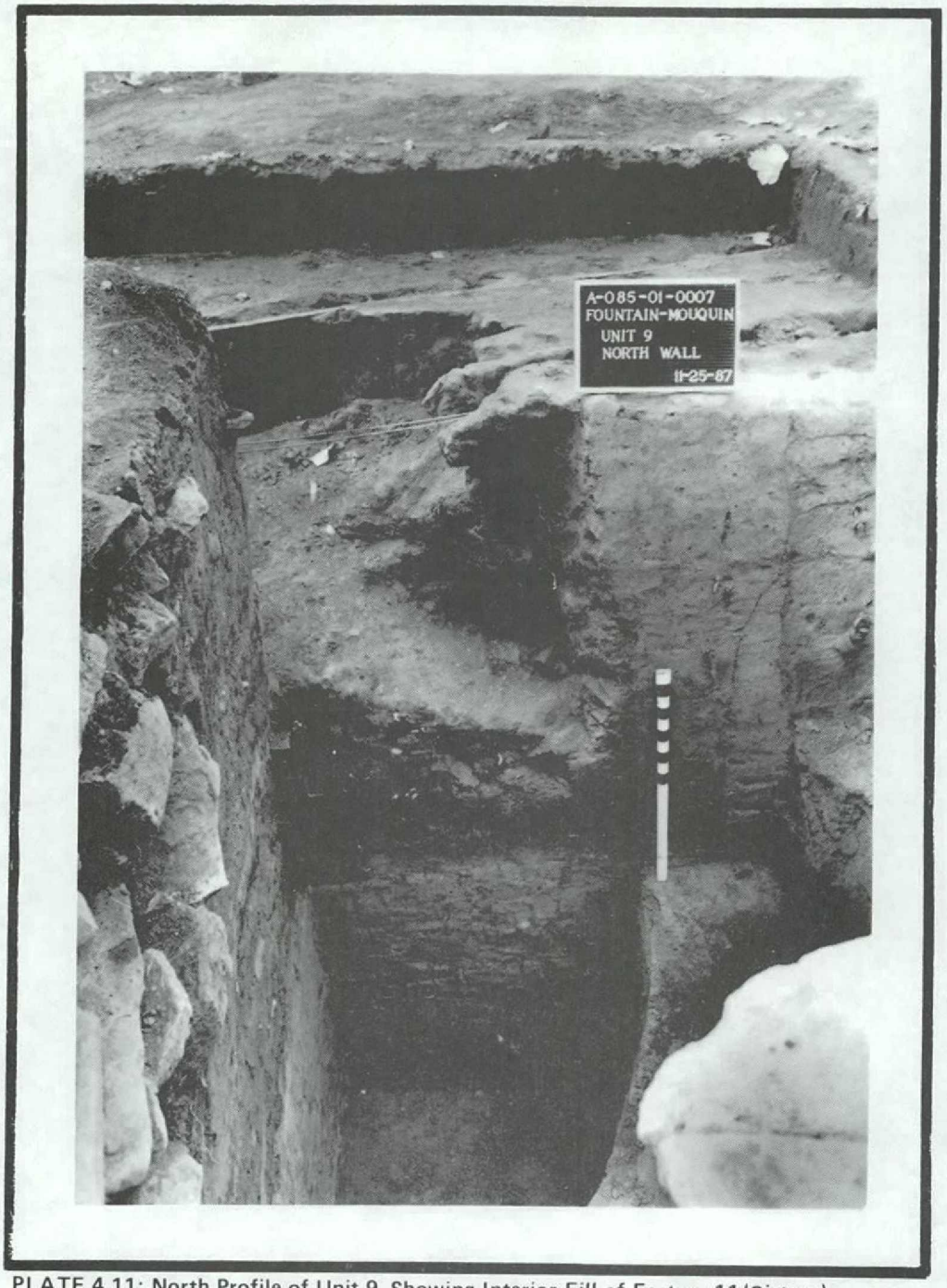


PLATE 4.11: North Profile of Unit 9 Showing Interior Fill of Feature 11 (Cistern) and Clay Wall. Note Intrusion of Utility Lines.

TABLE 4.9

EXCAVATION UNIT 9 STRATIGRAPHY

STRATUM NUMBER	MUNSELL NUMBER	MUNSELL COLOR	TEXTURE	DESCRIPTION	DEPTH
1	10YR 2/2	Very dark brown	Sandy silt w/ gravel	Grading	0.06/0.95' to 0.07/1.05'
2	10YR 2/2	Very dark brown	Silty sand	Builder's trench to house foundation	0.07/1.05' to 0.8/1.05'
3	10YR 3/4, 10YR 4/2	Dark yellowish brown, to dark grayish brown	Sandy silt	Yard deposit	0.8/1.05' to 1.55/1.8'
4	10YR 2/2, 7.5YR 3/4	Very dark brown to dark brown	Sand w/ gravel	Builder's trench to house foundation	0.95/1.4' to 1.2/1.80'
5	5YR 4/6	Yellowish red	Sand	Fill-Feature 11	1.2/2.2' to 3.87/4.60'
6	10YR 4/6, 10YR 5/8	Dark yellowish brown, and yellowish brown	Silty clay	Exterior wall-Feature 11	1.6/1.95' to 3.77/3.8'
7	10YR 5/4, 10YR 2/2	Yellowish brown and very dark brown	Silty clay	Exterior wall-Feature 11	1.65/2.0' to 3.75/3.8'
8	5YR 4/6	Yellowish red	Sand	Subsoil	1.2/1.7' to 3.7/3.80'
9	10YR 3/3, 10YR 4/5	Dark brown and yellowish brown	Silty clay	Fill-Feature 11	3.05/4.05' to 5.1/5.25'
10	10YR 5/3	Brown w/ iron oxide stain	Clay	Base of Feature 11	5.1/5.25' to 7.95/8.05'

Stratum 3 lay directly over the cistern's interior fill and wall trench and yielded an MCD of 1807 and a TPQ of 1849 from a U.S. one-cent piece (Figure 4.11). The feature's interior fill consisted of two distinct strata. The first, Stratum 5, was a yellowish red (5YR 4/6) sand similar in color and texture to the subsoil deposit found underlying the majority of the site. In fact, the deposit was identical to the subsoil deposit identified as Stratum 8 in the unit (Figure 4.11). This may indicate that the fill was brought in from another area of the site. Stratum 5 appeared to have been used to fill in the southwest quarter of the cistern during the construction of the stairwell to Feature 1. Additional evidence for the contemporaneity of the stairwell and fill is the lack of evidence for a builder's trench to the stairwell (Figure 4.11; Plate 4.10). This could only occur if they both had been deposited at the same time. A few diagnostic artifacts were recovered from the upper portion of Stratum 5, producing an MCD of 1804 and a TPQ of 1800.

Stratum 9, the second fill deposit, was a dark brown (10YR 3/3) and yellowish brown (10YR 4/5) silty clay with pockets of sand, that appeared to represent natural accumulation of soil at the cistern's base (Figure 4.11). Sixteen diagnostic ceramic sherds were recovered from the deposit, providing an MCD of 1796 with a glass TPQ of 1840. Directly beneath Stratum 9 was a 2.5 foot clay layer (Stratum 10) that comprised the bottom lining of the cistern. Diagnostic material recovered from the lining and the cistern's east wall yielded an MCD of 1802 and a TPQ of 1800. This would indicate that the cistern was built and used between 1800 and 1849. Sometime between 1800 and 1849, it was abandoned and filled in order to construct Feature 1. In addition, since the cistern truncated the builder's trench of the house, it postdates the construction of this addition.

Feature 13, a 4-foot circular stain, was first identified during the mechanical stripping of the south yard area. The feature was located approximately 25 feet south of the main house. Excavation of the feature revealed two fill deposits (Strata 1 and 4). Cultural material recovered from the pit feature included late eighteenth- to early nineteenth-century ceramic sherds, shell, nails, bone, pipe fragments, brick, and coal. Most, if not all, of the historic artifacts were fragmentary. In addition, 13 prehistoric flakes (quartz and argillite), and a quartz core were recovered from the feature fill. It is hypothesized that the feature represented the remains of a decorative shrub or a flower bed. This interpretation is based on the positioning of the stain in relation to the VanDeventer-Fountain house as seen in a circa 1900 photograph (Plate 4.12). The photograph show both a shrub and what looks like a flower bed in the vicinity of the soil stain.

Feature 14, a 3-foot circular soil stain, was located approximately 45 feet south of the main house. The feature also was identified during mechanical stripping of the south yard. Excavation indicated that the stain extended approximately

PLATE 4.12: VanDeventer-Fountain House (Circa 1900), Looking North. Note Flower Beds in Foreground.

0.4 feet in depth, forming a basin shaped pit. Artifactual material recovered from the pit matrix consisted exclusively of undiag-gnostic stoneware ceramics. The function of the feature is unknown.

Features 16, 17, and 18 represent a series of fence posts extending in a southerly direction away from the main house (Figure 4.1). These features were exposed during mechanical stripping. The two western posts were square in cross section, while the eastern post were circular. No additional fence posts were identified in any of the remaining areas cleared by machine. Feature 19, located approximately 10 feet south of the house, was also identified during machine stripping. It consisted of a 4-foot circular stain that may represent the remains of another flower bed. Very little artifactual material was recovered from this feature.

V. ARTIFACT ANALYSIS

A. INTRODUCTION

Not all deposits within the VanDeventer-Fountain House Site are conducive to an analysis of consumer behavior, the use of space within the farmstead, and the spatial arrangement of the farmstead over time (see Chapter II). Thus, as a first step, it is necessary to define those deposits that are suitable for studying these research issues. Of primary importance is the identification of the nature of a given deposit; that is, determining the formation process that may have created the deposit. This procedure will also help define the context of a trash deposit, whether it is de facto refuse, primary, secondary, displaced, etc. (Schiffer 1972, 1983; South 1977). Once these steps are accomplished, behavioral inferences on a household can be more confidently made (cf. Shiffer 1983).

This chapter will review the types of artifact analyses that aid in defining the formation processes that created the rural archaeological record at the VanDeventer-Fountain House Site. These analyses include dating, calculating percentage of artifact completeness, counting minimum number of artifacts, identifying vessel cross-mends within a feature, and measuring artifact frequencies. Of course, one of the most critical tools in identifying the origin and context of any deposit is the nature of the soil matrices from which the artifacts were recovered. For example, artifacts within a deposit of sand, gravel, and demolition rubble are of a different origin and context than artifacts from a deposit consisting of clay fill.

The study of deposit soil matrices, combined with the results of the artifact analyses, should indicate which depositional units across the site can be used in the study of household activities. Depositional Unit refers to a single deposit, or group of deposits, that are temporally, functionally, and/or spatially linked (cf. Louis Berger & Associates 1985, 1987). With the use of historical data, depositional units are linked to a particular household, e.g., Cornelius Fountain, Abraham Fountain, Henri Mouquin, etc. The archaeological materials within these units are then subjected to a group of analyses which will directly address the data needs of the research questions. The methods for defining depositional units, the analyses used, and a detailed examination of the depositional units that can be used to test the research questions are presented below.

B. LABORATORY METHODS

1. Artifact Processing, Conservation, and Coding

a. Artifact Processing

Artifacts were transported from the field to the lab on a regular basis. They were checked in by matching the field bag inventory against the bags received by the laboratory. All provenience information was matched with the associated catalogue number and this number was used as a reference number throughout processing and analysis. All materials were then washed or dry-brushed as appropriate and sorted into the major artifact types, such as ceramics, curved glass, architectural or small finds, faunal, floral, and prehistoric.

Ceramic and diagnostic glass artifacts were marked using India ink on a base of clear nail polish. The artifacts were marked with the New York State site number, A085-01-0007, and the artifact catalogue number for that particular provenience. The ink was then covered with a coat of clear nail polish to seal and protect the label. All artifacts not directly labeled with ink were bagged with artifact cards that contained full provenience information.

Artifact analysis was conducted according to high and low priority analytical groupings for the site. The proveniences considered high priority were those which were deemed undisturbed and which had the potential to addresss the research questions based upon the field data. The low priority proveniences were made up of disturbed areas, such as pipe trenches, strata associated with the demolition of the site, and other deposits which were determined not suitable for addressing in the research questions. The difference in the levels of effort between high and low priority analytical units is discussed below according to artifact type.

b. Conservation

Artifacts requiring conservation were segregated from the collection and treated according to material type. Five types of treatments were used on the VanDeventer-Fountain artifacts, depending on composition: 1) copper alloys; 2) glass; 3) shell and tortoise carapace; 4) metal-faced and gilded bone buttons; and 5) window leads.

Artifacts of copper alloys included buttons, coins, and thimbles. After initial cleaning with a soft brush, the artifacts were degreased in Acetone and placed in a beaker with demineralized water. The objects were then subjected to a series of boiling and cooling treatments to remove soluble chlorides. The water was tested using a 2 percent Hydrochloric Acid solution and 2 percent solution of Silver Nitrate. If the water tested positive, fresh demineralized water replaced the old and the treatment was

repeated until the water tested negative. The surfaces of each artifact were cleaned manually with a glass bristle brush. Once the solution tested negative, the artifacts were rinsed thoroughly, first with demineralized water, and then with Acetone, to assure quick drying and to degrease the artifact prior to sealing. The artifacts were sealed in a solution of Acryloid B-48 in Acetone and Xylene and allowed to air dry. They were then wrapped in acid-free tissue and stored in sealed plastic bags with silica gel.

Diagnostic sherds of bottle and table glass exhibiting exterior surface deterioration were coated with a 10 percent solution of Acryloid B-72 in Toluene. After air drying, they were sealed for storage in plastic bags.

Three shell buttons and a decorative hair comb of tortoise shell were coated with Polyvinyl Acetate (PVA) in Acetone to prevent further spliting and flaking. The artifacts were air dried and sealed in plastic bags for storage.

Three bone buttons with a decorative gilt on brass facing were in fairly stable condition, but conservation was prescribed to preserve the regimental crest on the surface of each facing. The facings were gently cleaned with a glass bristle brush, degreased in Acetone, coated with Acryloid B-48 in Acetone and Xylene and allowed to air dry. The bone that was exposed was cleaned with a soft dry brush and coated with PVA in Acetone and air dried. The buttons were wrapped in acid-free tissue and stored in sealed plastic bags in silica gel.

The fifth treatment was performed on turned window leads. This treatment was actually carried out to gain further information about the leads rather than as a conservation procedure. It was recommended by Susan Hanna of Historic St. Mary's City, Maryland. The leads were treated in order to determine if any type of mark/date was present on their interiors. The leads were soaked in demineralized water for several hours to loosen any soil and were then rinsed and put into a bath of Ethylenedinitrilotetra-acetic acid (EDTA) in demineralized water to loosen any incrustations. The leads were then rinsed under running water and brushed with a soft brush. Each lead was placed on a flat surface and the seams were gently opened with a scalpel. The leads were brushed to remove remaining incrustations and rinsed under running water to assure removal of all the EDTA. They were allowed to air dry for at least 12 hours. After they had dried, the interiors were brushed with a glass bristle brush and examined for any interior marks. The leads were degreased in ethyl alcohol and placed in a bath of microcrystalline wax, removed when coated, and allowed to air dry. The artifacts were examined for any marks, wrapped in acid-free tissue and sealed in plastic bags that had been perforated for ventilation.

c. Computer Cataloguing and Coding

The computerized data management system developed by the Cultural Resource Group of LBA was used to compile an artifact inventory for data manipulation. This system is written on an IBM PC-XT using RBase System V, a relational data base development package. Artifact information (characteristics) recorded on the data entry forms by the analysts was entered into the system. After all of the artifact data had been entered into the computer, the system was used to enhance all artifact records with the addition of provenience information. A second program added dates (when applicable) and translations for all artifact type and subtype codes. The site end date used is 1907, when the Army demolished the structures.

Pattern codes were also automatically assigned to each artifact entry based on the type and subtype. Artifact pattern analysis is used to organize an assemblage and to provide a description of its contents. As a supplement to pattern analysis, the artifact functional analysis (for glass and ceramics only) examines the proportions of vessel functional categories within household assemblages. The glass functional codes are linked to the type/subtype codes and are therefore assigned automatically by the computer. The ceramic functional codes, however, are entered into the system manually. Appendix A lists the pattern group and class categories and the glass and ceramic functional groupings. The pattern categories follow the work of South (1977); the functional categories follow Beidleman, et al. (1983); both were modified by Louis Berger & Associates (1986). A series of reports, including Mean Ceramic Dates by provenience, vessel table reports, and artifact catalogue sorted by depositional units, were generated by the computer.

2. Ceramic Analysis

The ceramic collection from the VanDeventer-Fountain Site was analyzed using a standardized format which has been developed by the LBA Cultural Resource Group. This format is based on the South/Hume typology (South 1977), as modified for use in a computerized system (Stehling in Geismar 1983; Stehling and Janowitz 1986; Louis Berger & Associates 1987.

The sherds from the low-priority units were tabulated at a Stage I (Basic) level of analysis, while those from all other units were tabulated at a Stage II (Intensive) level. Stage I analysis includes two types of information: first, dating sherds through the identification of their body types and surface treatments and, if present, maker's marks; and, second, determination, where possible, of vessel function. Stage II includes this information as well as data about vessel form, decorative motif, minimum number of vessels (MNVs), percentage of completeness, and, for pieces assigned a vessel number, amount and location of wear.

As the first step in the Stage II analysis, all of the sherds from the pertinent test units were laid out, sorted by type, and cross-mended in order to note in which proveniences cross-mending occurred and to determine minimum numbers MNVs. MNVs and Vessel Numbers were assigned to sherds which either cross-mended between proveniences or which mended to form more than 25 percent of a vessel within one provenience. MNVs were also assigned to non-mending but distinctive rim sherds and to unique body or base sherds.

Type/SubType

This is a five-character code consisting of three letters and two numbers. The first letter is always C for ceramic. The second letter refers to general ware groups, such as E (coarse earthenwares), R (refined earthenwares), S (coarse stonewares), F (refined stonewares), P (porcelains), and O (unidentifiable). The third letter refers to specific ware types, e.g., R for Redware, T for White Salt-Glazed, etc. The numbers following the letter code refer to particular decorative treatments or named types, e.g., CER04-Redware with Dark Brown to Black Glaze, CRW50-Whiteware with Blue Transfer Printed Design, etc. Type/SubType can either have specific dates or may be descriptive and undated. Sources for the dates include, but are not limited to, South (1977), Noel Hume (1969), Denker and Denker (1985), Ketchum (1983), Wetherbee (1980), Cameron (1986), and Miller (1980).

Count

The Count is simply the number of sherds in each category.

Begin Date - End Date

The Begin and End Dates are automatically assigned by the computer to each dated Type/Subtype but when tighter dates can be determined from maker's marks or particular decorations or forms, this field is filled in on the coding sheet, and the more specific dates are entered into the computer.

Form

Form indicates the shape and possible function of the sherd or vessel. General categories, such as "Flatware - Base," are used for sherds whose small size or ambiguous characteristics make determination of form problematical.

Decoration/Motif

This includes descriptions of specific decorations ("Chinoiserie - landscape"), pattern names (e.g., "Willow") and general descriptions (e.g., "Blue").

Maker's Mark

Maker's mark is used for actual marks seen on sherds.

MNV

Minimum Number of Vessels is filled in if a sherd has been assigned a MNV (see above for the methods used to determine MNVs).

Wear

This field is designed to note both the amount and location of abrasions, cuts, nicks, etc. on a vessel in order to aid in the determination of its use. At the simplest level, lack of wear can help identify commercial deposits (Geismar 1983), and location and amount of wear also provide information about the actual utilization of vessels (Griffiths 1978).

Percentage Complete

Percentage Complete also aids in the identification of different types of deposits by monitoring artifact fragmentation. The codes used are 1 for less than 25 percent complete, 2 for 25 percent to less than 50 percent, 3 for 50 percent to less than 75 percent, 4 for 75 percent, to less than 100 percent, 5 for 100 percent complete, and 6 for vessels which were intact and *in situ*.

Comments

Comments is a numerical code that refers to information not covered in the other fields. The most common entry is 19, which translates as "See Written Comments". These written comments can be found on the computer data input records.

Function

This field refers to the following general functional categories: teawares; tablewares; food storage; food preparation; hygiene; household furnishings; miscellaneous (flower pots, ink bottles, etc.); multifunctional; pharmaceutical; crucibles; bottles; kiln related artifacts; and unidentifiable fragments.

Pattern

Pattern follows the basic categories, with modifications, as outlined in South (1977). South assigns all ceramics to the Kitchen group, but Pattern for ceramics in the LBA coding system is assigned based upon the above functional categories. Ceramics can thus be part of the Kitchen, Personal, Activities, or other groups.

3. Glass Analysis

The glass assemblage from the VanDeventer-Fountain House Site was broken down, for analytic purposes, into functionally distinct groupings based on "Bottle," "Table," "Lighting Related," and "Other" use categories. Window glass, considered more functionally inclusive under an architectural group of artifacts, was subsumed for analysis under Small Finds.

Identification and tabulation of the glass under this section proceeded unit by unit according to either a modified Stage I (Basic) or Stage II (Intensive) level of analysis. Stage I, conducted on designated low-priority units, involved sorting the glass into datable and non-datable categories, and then tabulating by sherd. Only those artifacts diagnostic in terms of date were afforded the full range of Stage I analytical treatment. This involved, in addition to Type/SubType, Date, and Count identification, the recordation of select descriptive attributes of the sherds (i.e., Color, Finish and/or Base Type, Manufacturing Technique, Motif, Embossment, and Maker's Mark). Stage II analysis, conducted on high-priority units, included the same recordation of attributes as described above and, when applicable, the recordation of one additional descriptor (lead/non-lead content for certain categories of colorless glass) as well as two sets of analytical data (MNVs and Vessel Number).

The analysis utilized the typology and attribute list designed by LBA for all its projects. In addition to catalog and provenience information, a total of 17 fields of discrete glass data were available for recordation on the computer data entry sheets. A brief description of coding procedures follows.

Type/SubType

Tabulation of the glass proceeded according to artifact codes determined by function (Type) and form (SubType). Codes are alphanumeric consisting of three letters and a two-digit number. The first letter G, standard for all codes, denotes the artifact as "Glass". The second letter denotes the general functional category in which the artifact falls: "B-Bottle", "T-Table", "L-Lighting Related", and "O-Other" glass. The third letter denotes specific function, i.e., "A-Alcohol" under the general "Bottle" heading, "T-Tumbler" under the general "Table" heading, "D-Decoration" under the general "Lighting Related" heading, and "U-Unidentified" under the general "Other" heading. The two-digit number completes the identification and denotes vessel form, i.e., "GBA03-Wine/Liquor Bottle", "GTT12-Tumbler/Decorated General", "GLD01-Prism" and "GOU01-Total Unidentified Glass".

All artifacts, identified as to specific function and form, were coded as such regardless of the degree of fragmentation. The specific vessel part(s) encountered are inferred by the coding of the appropriate field(s), i.e., "Base" and "Finish." Whole and fragmented bases, finishes, rims, and body sherds for which

specific functional forms could not be identified were accommodated under "Unidentified" and "Miscellaneous" categories. Non-form- specific vessels and sherds were coded as above, when appropriate, or under expanded codes such as Wine/Liquor Flask (Strap- sided). The non-datable glass from the low-priority units was tabulated under an all-inclusive "GAY00-All Glass/General" code.

Count

This is simply the number of sherds in any category.

Begin Date - End Date

Dating of the glass assemblage proceeded according to established diagnostic criteria. These criteria, utilized either singly or in combination, include various technological aspects of glass manufacture such as finish treatments and mold markings, datable bottle embossments and maker's marks, and various stylistic elements associated with certain tablewares. When applicable, both a beginning and end date of manufacture were recorded. In instances where no end date of manufacture was available, the general end date for the site (1907) was recorded. Artifacts with a beginning date post-1907 were dated accordingly. Sources used for dating include: Fike (1987), Geismar (1983), Jones and Sullivan (1985), McKearin and Wilson (1978), Miller and Sullivan (1981), Munsey (1970), Riley (1958), Spillman (1981, 1982), and Toulouse (1971, 1977). Additional sources consulted include: Cheney (1980), Klamkin (1973), McKearin and McKearin (1972), and Noel Hume (1969, 1974).

Color

In general, color was assigned to glass sherds purely for descriptive purposes and is broadly defined for this collection. All shades of olive green for example, are coded under "Light Olive/Dark Olive Green". The exception is "Amethyst Tinted" or "Solarized," which is a datable color. Non-datable glass from the low-priority units was tabulated under an all-inclusive "98-All Colors" code.

Lead/Non-Lead Content

The presence of high-quality leaded glass in very late eighteenth to early nineteenth-century deposits may be indicative of wealthy households (Diamond in Geismar 1983:317). All clear glass from the high-priority units, with the exception of bottle and lamp glass, was thus examined for the presence of lead. The technique of using ultra-violet light to distinguish between leaded and non-leaded glass from archaeological sites has been found to be reliable (McNally 1979:18-19; Diamond in Geismar 1983:319) and was employed for the VanDeventer-Fountain assemblage. A short-wave UV light (UVP Inc. Model UVG-11, Mineralight 254 NM) was utilized. Leaded glass exposed to the light turned ice-blue in

color; non-leaded glass exhibited a pale yellow color or did not react at all. Code 01 refers, when applicable, to the presence of lead; code 02 denotes non-leaded glass.

Finish

Finish types in the collection fell within the One-Part (100s), Two-Part (200s), and Three-Part (300s) categories. Coded descriptions relate, for the most part, to the shape (in side profile) of the element(s) comprising each finish. In some cases, common names, i.e., "Crown" or "Patent/Extract", have been used. Fragmented finishes with a known number of elements, but unassignable to a specific type, were variously coded as "199-One Part/Unidentified", "299-Two Part/Unidentified," or "399-Three Part/Unidentified". Finishes with an unknown number of elements were coded "999-Unidentified/Number of Parts Unknown."

Base

Base types in the collection refer to the marks on the basal surfaces of both bottles and tableware indicating the mode of their manufacture. The lack of any markings on several bottle bases indicated that a "snap case" device was used to hold the bottles in place while their finishes were formed. Machine-made basal markings were also encountered. Base fragments which could not be associated with a diagnostic piece were coded "99-Unidentified".

Manufacturing Technique

Manufacturing technique refers to the distinctive mold seams and markings found on the bodies (and sometimes on the basal surfaces and over the finishes) of completed glassware. Code "01-Mold-Blown (Mold Type Indeterminate)" was used to describe vessels for which a specific mold type could not be discerned. Code "99-Unidentified" was used to denote a totally unidentifiable manufacturing technique.

Wear

Code "09-Melted/Burned" was used to denote artifacts subjected to fire.

Motif

The majority of motif codes assigned to the collection refer to the general decorative patterns evidenced. Code "9999-Unidentified" was used to denote partial patterns which could not be identified fully.

Embossment

Complete lettered embossments were assigned as encountered. Sources used for identification include Baldwin (1973), Fike

(1987), and McKearin and Wilson (1978). Incomplete embossments which could not be identified in their entirety were coded "9999-Unidentified/Partial."

Maker's Mark

Identifiable maker's marks, usually found on the basal surfaces of bottles, were also coded as encountered. Each mark - most often in the form of a graphic design, initials, or a combination of both - was drawn and then assigned a number identifying the company of origin. The primary source utilized for identification was Toulouse (1971). Incomplete marks were coded "9999-Unidentified".

Minimum Number of Vessels (MNV)

Minimum number of vessel counts were generated in the Stage II tabulation phase to aid in subsequent analysis of the occupational deposits. Procedures for the determination of MNVs were devised in accordance with limitations set by the fragmentary nature of the majority of the collection.

For the majority of glass forms, MNVs were primarily defined by counting the number of bases in the assemblage. All intact vessels and whole and fragmented bases were set aside as each provenience was prepared for tabulation. Fragments were grouped by form, color, and pontil type (when evidenced), and mended to the fullest extent possible within each provenience. Cross-mends were first made between all proveniences in a given excavation unit and then systematically attempted between proveniences of different units. This was done to decrease the chance of multiple counting of vessels that may have had their bases crossing more than one level or stratum in a given unit and/or more than one level or stratum between units. An MNV of "one" was assigned to each intact vessel and whole base. As a general rule, single fragments and those mending to form only a partial base were assigned an MNV of "one" if the pontil type could be discerned and/or a 50 percent or above level of completeness was achieved. When a base cross-mended between two or more proveniences, the MNV was assigned to the stratum and level containing the greatest number of fragments or, when the number of fragments was equal, to the stratigraphically higher provenience.

In several instances, a MNV of "one" was assigned to a base fragment when it was determined, by visual scrutiny, to be unique. Similarly, the absence of vessel bases or lower ratio of bases to other vessel parts required an alternate approach to MNV determination, based on uniqueness. In these cases, MNV counts were variously scored with finishes, rims and/or body sherds on the basis of unique type, motif/pattern, or color, etc.. The procedures described above for mending, cross-mending and MNV provenience assignment remained constant, regardless of the various criteria used.

Vessel Number

Vessel numbers were generated in the Stage II tabulation phase in conjunction with assignment of MNVs. All MNV'd vessels received a vessel number (consecutive throughout the site). Where cross-mends occurred between two or more proveniences their locations were noted and the mending sherds were given the same vessel number. This enabled the computer to track all mending sherds. An "A" designation recorded after the vessel number indicates probable association with that vessel within the provenience in which the MNV was assigned, A "B" designation indicates probable association outside the provenience of the assigned MNV.

Comments

Comment codes were utilized at the discretion of individual analysts, in both Stage I and Stage II analyses, to convey additional descriptive or explanatory data not covered in the standard coded fields. These include, for example, "Dated by Association," "Typed by Association," "Probably Twentieth Century," etc.

4. Small Finds Analysis

Architectural and Small Finds materials from the VanDeventer-Fountain Site were analyzed in two different ways based on analytical unit and priority designations. High-priority materials received the standard Stage I level of analysis, using the coding system created by LBA Cultural Resource Group based on the South/Hume typology (South 1977). The low-priority materials received an abbreviated Stage I level of analysis. Artifacts were coded using general group types.

The Stage I coding system allows for a maximum of 10 fields of information for each artifact. Each artifact was identified by its group and class, material type, and given a count. For certain artifact types additional descriptive information was given, such as weight and color. The remaining fields of information were used only when additional information could be provided by the artifact.

Type/SubType

Type/SubType consists of a three letter/two integer field. The type denotes 1) artifact type, in this case S-Small finds/ Architectural 2) Group, i.e., A-Architecture; D-Kitchen 3) Class, i.e., E-Electrical. The SubType denotes a specific artifact type.

Count

Count was given for all artifacts of a specific group and class which shared the same modifiers within a given provenience.

Weight

Weights in grams were given for brick, mortar, glass, coal and other heating-related by-products.

Begin Date - End Date

Dates for certain artifacts were generated automatically by the Type/SubType. In some cases dates were written in when a range for an artifact could be determined. These dates were based on diagnostic attributes, for example, the date on a coin.

Material

The material composition was described for each artifact.

Characteristic

A modifier was used to best describe the form or manufacturing technique of each artifact. If no diagnostic attribute was evident the artifact was described as being whole or fragmented.

Decoration

Any characteristic not related to the form or manufacture of an artifact but which was purely decorative was described.

Color

Color was recorded for glass to distinguish between different types.

Maker's Mark

Maker's marks were recorded when encountered.

Comments

This field was used to make additional comments about the artifacts which could not be accommodated for elsewhere, for example evidence of burning.

5. Pipe Analysis

The tobacco pipes from the site were tabulated using a computer coding system that is separate from the rest of the small finds. All of the pipes were tabulated at a Stage I level of analysis, which includes the following variables:

Type/SubType

This is a three-letter, two-digit code indicating the material of the pipe (white clay, red clay, wood, etc.) and its general shape. Shape is identified by comparison to dated examples as

illustrated in Noel Hume (1969), Oswald (1961), and other sources as appropriate, or by simple description (for example, PTE 93 is Unidentifiable Shape with a Low, Oval Heel). The third letter of the code indicates either white clay pipe bowls (E), stems(S), or red clay pipes (R).

Count

Count is the number of fragments in each type/subtype category.

Begin Date and End Date

Begin and End Dates are assigned by the computer when the pipe bowl shape is datable (PTE 01, for example, is dated 1720-1820 [Noel Hume 1969:303, #18]). Other data on the manufacturing date of pipes is entered by hand on the coding sheets.

Bore

The measurement of the stem bore diameter is given in 64ths of an inch.

Maker's Mark

Maker's Mark is filled in when a maker's mark or decoration is present.

Use

Use refers to both the amount of blackening on the interior of bowls (Heavy, Light or None) and to characteristics of stems as well as bowls (Stained Red or Brown, Burnt, etc.).

6. Faunal Analysis

The faunal material from the VanDeventer-Fountain Site was analyzed in three different ways based on analytical unit and priority designations. Feature 5 mammal, bird and reptile bone received a Stage II level of analysis. Bone and shell from low-priority analytical units received an abbreviated Stage I level of analysis. The bone was counted and the shell was weighed. No identification of species was attempted for low-priority bone or shell. Feature 5 fish and shell, as well as bone and shell from high-priority analytical units, received the standard Stage I level of analysis using the coding system created by LBA Cultural Resource Group. This system allows for identification by species and element, and for recordation of most modifications. Group and class are assigned to each species allowing for pattern analysis.

Feature 5 analysis combined the results of the fish and shell identification with those of the mammal, bird and reptile. The fish identification was accomplished using reference materials as well as a limited type collection. Tentatively identified species

were assigned a general Type/SubType code and the species recorded in the note field.

Type/SubType

The Type/SubType code consists of a three letter/two integer field. The Type denotes: 1) artifact type, in this case Z-Faunal; 2) Class, e.g., M-Mammal; and 3) useful distinctions within a class, e.g., D-Domestic. The SubType denotes species.

Count

Each bone received a count of one. Whole shell and hinges received a count of one. Fragments of shell did not receive a count.

Weight

All shell was weighed.

Element

When possible each bone element was identified.

Part Present

How much and which part of an element present was recorded.

Age/Epiphysial Fusion

Indicators of age such as unfused diaphyses and unerupted teeth were recorded when present.

Butchering

Any marks attributable to butchering were recorded. Distinctions were made between primary and secondary marks.

Cuts

Elements deliberately butchered to a specific shape, such as steakbones, were identified by cut.

Burning

Any evidence of burning was recorded.

Gnawing

Gnaw marks were recorded and an attempt was made to distinguish between rodent and canine teeth marks.

Weathering

Weathering was noted and described.

Comments

Standard comments were used for noting additional data present but not accommodated for in the other fields of information. For example, the comment 69 means Mendable and is useful in doing adjusted bone counts.

Note Field

In addition to standard comments non-typical bits of information were noted here.

7. Floral Analysis

Floral material was treated in two separate ways based on analytical unit and priority designations. Low-priority floral material was given a general code and counted. High-priority floral material received the standard Stage I level of analysis using the coding system created by LBA Cultural Resource Group. This system identifies species and element and records any modifications.

Type/SubType

The Type/SubType code consists of a three letter-two integer field. The type denotes 1) artifact type, in this case F-Floral 2) Class and Sub-Class 3) Family. The SubType denotes species.

Element

The type of element present is identified, e.g., nut shell, seed.

Percentage Complete

The percent complete specifies the element as being whole, half or fragment.

Burning

Evidence of burning is noted when present.

Comments

A standard set of comments was used for noting additional data not accommodated for in other fields of information. For example, the comment 16 means from flotation sample.

Note Field

In addition to the comments field, the note field allows for non-standardized comments when deemed necessary.

8. Prehistoric Analysis

Analysis of the prehistoric artifacts was carried out in a fashion similar to that of the historic artifacts, in the sense that codes were used to enter data into a computerized database. In fact, the data file for prehistoric artifacts includes a number of fields identical to those in the historic artifact data file (catalogue number, type, subtype, count, weight, translation, pattern, group, and class).

After cleaning, the entire collection was classified according to major formal classes (ceramics, bifacial tools, unifacial tools, cores, chunks, flakes, cobble tools, groundstone tools, and fire-cracked rock). The three text characters of the Type field denote major artifact classes, as shown in the examples below:

LMC Lithic-Modified-Core
LMB Lithic-Modified-Biface
LUF Lithic-Unmodified-Flake
ABB Aboriginal Ceramic

The SubType field of lithics denotes raw material, such as "rhyolite," "chert," "quartzite," etc. The SubType field for the ceramics indicates temper type.

The Category and SubCategory fields provide more detailed formal and functional classifications, particular to the major implement classes. The presence or absence of cortex (Cortex field) was recorded for all lithic items, as was the presence or absence of thermal alteration (Heat field). Length, width, and thickness were measured to the nearest 0.1 mm for all tools and cores. Only one dimension, greatest length, was measured for unretouched flakes.

Projectile points were sorted first according to general morphological categories (side-notched, stemmed, corner-notched, triangular, etc.), with these general categories recorded in the Category field. Three morphological characteristics were described for each projectile point: blade form (Edjplat field); basal form (Edjplat2 field); and notch/shoulder form (Edjplat3 field). Points were then assigned to a formally defined type if possible, with the point type recorded in the SubCategory field.

Cores, cobble tools, and generalized bifaces were further sorted according to the Category and SubCategory field definitions. Edge wear and/or use damage exhibited on tool edges was noted.

Unmodified flakes were sorted and tabulated according to raw material (SubType field); whole or broken (Condition/Breakage field); presence/absence of thermal alteration (Heat field); presence/absence of bulb of percussion; and presence/absence of previous flake scars.

The prehistoric ceramics recovered from this site were identified by temper, (SubType). Four additional fields were used to describe the interior and exterior surface treatments and decorations. Fields ExSur and InSur denote the surface treatments found on the exterior and interior surface decorations. ExDec and InDec were used to record exterior and interior decoration. Rim sherds were further described under the field lip.

C. DEPOSITIONAL UNITS

As a first step in defining depositional units within the excavated test units, and in determining whether these deposits are suitable for detailed analyses of household behavior, the nature of the soil matrices within the excavation units was examined. Appendix B summarizes the characteristics of each excavation unit's deposits and its associated depositional unit. As discussed earlier (Chapter IV), a fairly uniform stratigraphic sequence was observed in excavation units across the site. Five general, but distinct, depositional units were defined: 1) grading; 2) demolition and rubble; 3) occupation related, including trash deposits [e.g., horizontal yard deposits and shell middens], 4) structural elements; and 5) modern disturbed contexts [e.g., pipe trenches, utility lines, etc.].

Based on field data and the results of the artifact analyses discussed above, the following depositional units were further defined: 1) grading; 2) demolition debris from the U.S. Army's razing of the VanDeventer-Foundation House; 3) occupation associated with Cornelius Fountain, 4) occupation associated with Abraham Fountain, 5) mixed occupation associated with the Cornelius, Abraham, James and Herman Fountain, and Henri Mouquin households; 6) occupation associated with Henri Mouquin, 7) structural elements, and 8) twentieth-century disturbed contexts associated with Army activities.

1. Depositional Unit 1

The soil matrix associated with the first depositional unit (grading) covered the entire site and generally consisted of a sandy silt mixed with gravel and cinders. These deposits varied in thickness from 0.4 to 1.4 feet. The strata included within this depositional unit are probably the result of the grading of the existing ground surface and contains demolition debris from the destruction of the house and outbuildings. Artifact materials recovered from these deposits included a mixture of eighteenth- to twentieth-century materials, with several dating to the seventeeth century. This mixture appears to be due to the demolition of the house and subsequent construction activities by the Army. In addition, the depositional unit includes lenses of gravel that may have originated from paths and/or activity areas around the structure. Since the nature and date of this depositional unit

suggest that it relates to the post-abandonment period of the site, materials recovered from these contexts were not included in addressing the research questions.

2. Depositional Unit 2

Depositional Unit 2 was identified as demolition debris and rubble fill within the interior of the building and basement areas (Appendix B). The upper deposits within the debris were heavily ladened with a large amount of architectural materials (e.g., brick, mortar, building stone, window glass, nails, plumbing and lighting fixtures, hardware, etc.) and, to a lesser extent domestic items (e.g., ceramic sherds, bottle glass, pipe fragments, etc.) The upper debris layers overlaid deposits of coal, ash, cinder, and burnt wood. This juxtaposition of deposits indicates that the house was first burned before being torn down by the Army in 1907/08. The mixed context and fragmentary nature of the artifact assemblage limited its usefulness in addressing the research questions. However, the deposits could be examined for evidence that would reflect physical changes and alterations made to the VanDeventer-Fountain House over an extended period of time.

A house needs constant maintenance, repairs must be made, roofs and windows need replacing, and the materials used in maintaining a house over its period of use reflect what is available on the market. The nineteenth century brought a number of changes to domestic life - indoor plumbing and sanitation, gas lighting, electrical lighting, wood burning stoves, coal heating - all of which altered the level of physical comfort in the home. The recovered artifacts from the VanDeventer-Fountain House exhibit the great diversity of elements that go into constructing and maintaining a house. Many of these elements found at the site were primarily functional hardware, such as nails, changing in form as technological advances made possible mass-production. Other functional artifacts were reflective of individual choice, such as the encaustic floor tiles found in the center section of the house (see Figures 1.6 and 4.1).

A large number of nails were recovered from the site, wire and square-cut being the most common types. In most cases they were heavily corroded and it was not possible to distinguish between handwrought and machine-cut nails. The pervasiveness of wire nails in many of the deposits helped to date some of the construction events of the site. The first wire nail machine was invented in France in 1834 and was introduced into other European countries during the 1840s. The beginning date used here is 1834; however mass-production and exportation most likely did not occur until the late 1840s. In 1850, a New York City importer of wire nails, Morton and Bremner, visited Europe. This resulted in the beginning of wire nail production in the United States (Smith 1966:207-208).

Other fasteners included square-cut and wire spikes, screws, and hooks, with square-cut spikes dominating this group. Screws were generally too corroded to determine manufacture technique. Also present in high frequency were metal hooks. Looking at the photographs taken of the house at the end of the century, one can see shutters on all the windows (see Plate 3.1). Some of the shutters are open while others are closed indicating they were functional and not just decorative. The shutters would have been held in place by these recovered hooks.

Windows have changed appearance over the course of the last few centuries as a result of changing glass technology and assembly methods. Casement windows came first, then sash windows. Primary differences between the two are the type of glass used for the panes and the hardware used to assemble and mount them. Casement windows were made of small panes of glass, squared or diamond-shaped quarrels, held together by thin strips of lead assembled within a metal frame. The window was hinged, and swung open. Sash windows made of broad glass were cheaper to make (Davies 1973). Squared panes were held together with strips of wood placed within a wooden frame and were slid up and down by a series of pulleys and weights.

Originally window glass was made by the crown method consisting of blowing a cylinder, opening the bubble at one end and twirling the glass into a flat disk. The disks were given a second firing which gave then a brilliant shine known as fire-polish. The largest diameter obtained rarely exceeded four feet and this was only after years of improvements in the metal (i.e., the molten glass) itself (Scoville 1950). The most efficient way of cutting a disk was in the shape of diamonds, the result of which were small glass panes. The strips used to piece the quarrels together were made by turning lead through a glazier's vise resulting in H-shaped pieces stamped occasionally with the maker's mark (Eagan, Hanna, and Knight 1986).

Sash windows might also have panes made of crown glass; however, around 1820, broad glass became more popular (Davis 1950:27-34). The production of broad glass involved blowing a cylinder, then splitting the bubble down the middle flattening it into a large sheet. It did not have the brilliance of crown glass because as the cylinder opened, one surface stretched marring the smoothness of the surface. As the glass sheet came into contact with the metal table it tended to cloud (Scoville 1950). Broad glass production was more cost efficient than crown glass because it had little waste, was quicker to produce, and required less expertise to make. Photographs (ca. 1900) of the VanDeventer-Fountain House document the existence of sash windows (see Plate 3.1). The archaeological record, through the presence of turned-lead and crown glass, reveals that at some point casement windows were present. With few exceptions, the artifact inventory does not distinguish between broad and crown glass because at the time of analysis there was a great deal of ambiguity in how to differentiate between the two. During

intensive analysis of window glass from Feature 5, it became apparent that it was possible to distinguish between the two types (see Depositional Unit 6 discussion below). The change-over from casement windows to sash windows probably took place gradually over the course of the nineteenth century.

In addition to these two types of glass and some more modern pieces, there was an unusual type of glass present which measured over one inch in thickness. All fragments were scratched on one surface, and on the other side showed signs of polishing. Its function was interpreted as being some form of basement lighting system like the glass cobbles found in city sidewalks.

Several doorknobs and lock mechanisms were recovered in the demolition debris. These varied a great deal in decorative elements, but were basically the same form. The doorknobs were all flattened globes made of brass, porcelain, and agateware. The lock mechanisms to which they were sometimes attached were made of brass, were rectangular in shape, and had skeleton key holes. The surface of some were elaborately molded while others were plain. Door hinges were present in large numbers but were very heavily corroded so that any further analysis was not possible.

Besides the stone foundation walls, bricks, mortar, roofing slate, tar shingles, and marble were recovered from the assemblage. Several features (Features 2, 4, 6, 9) were made of brick. All the bricks were red, machine-made, and not stamped with maker's marks. The first patent for machine-made bricks was taken out in 1792, but mass-production did not begin until the early 1830s. However, it was not until the 1870s that large-scale production of bricks occurred in the United States. (McKee 1973:41-44; deNoyelles 1982).

Roofing slate was recovered from this deposit along with tar shingles. Some of the shingles had nail holes, indicating they were part of a roof at one time. These two types of roofing materials followed each other in time. Several doorway lintels, made of Inwood marble, also were located in the debris. Inwood marble, a low-grade marble, was locally quarried and was commonly used as a building material in the nineteenth century.

Indoor plumbing was installed at some point in the nineteenth century as can be seen by the presence of sewer pipe, a faucet, bathroom fixtures, and tiles. However, Major William L. Marshall, Corps of Engineers, stated in a letter that the house "had no modern sanitary arrangements" and was not wanted as quarters for non-commissioned officers by the post commander (U.S. EOC 1902). The presence of a gas lighting fixture indicated the house had gas lines installed at some point.

The ceramics from the rubble and demolition layers at the VanDeventer-Fountain Site include both early (eighteenth-century) and late (turn of the twentieth century) types, but the majority of sherds in these levels are from the nineteenth century. The

sherds are generally fragmentary and only a few cross-mends were found: Vessels #32, #39, and #45 mends with the top layers of Feature 5; Vessel #49 with a yard deposit associated with Abraham Fountain; Vessel #57 with the shell midden in Feature 8; and Vessels #60 and #63 within Units in the demolition and rubble. Vessels #61 and #62 are both from Unit 1 in the rubble levels. They are brown stoneware bottles with pouring lips, discarded intact and marked "Vitreous Stone Bottles J. Bourne & Son, Patentees, Denby Pottery, near Derby" and "P & J Arnold, London, England." According to Noel Hume (1969:78-79), this shape bottle was used for ink. P & J Arnold would be the ink manufacturers and J. Bourne & Son the potters. Although brown stoneware bottles were most common between 1840 and 1890 (Noel Hume 1969:79), this particular mark dates to 1850-1860 (Godden 1964:90).

The glass from the demolition debris deposit at the VanDeventer-Fountain Site appears to be mostly late nineteenth and early twentieth century; the collection, for the most part, is also extremely fragmentary. The majority of vessels represented fall into the beverage (wine, liquor, and beer) bottle category. Most exhibit evidence of machine-manufacture providing the TPQ of 1903 for this deposit. The only bottles of note are two beverage bottles embossed with the names of local bottlers or brewers. They are "E. MANZEL/FORT WADSWORTH/S.I." and "RUBSAM & HORRMAN BREWG. (Co.)/STATEN/ISLAND/N.Y./REGISTERED."

The next four depositional units are associated with the occupation of the site. Initial field data identified several culture bearing strata, but did not assign these deposits to a particular period of occupation. This general occupational deposit was later refined, based on soil context and artifact types and dates, into those strata which could be associated with the periods of Cornelius, Abraham, James and Herman Fountain, and Henri Mouquin. Strata that exhibited a mix of the households are included as a separate depositional unit (see Appendix A). The ceramic and glass sherds from most of the yard and trash deposits are, in general very fragmentary and exhibit wide date ranges. They are too fragmentary to discuss their function, and their temporal affiliations are ambiguous. However, a few deposits were intact enough to determine functional and temporal affiliation. These deposits are discussed below.

3. Depositional Unit 3

The earliest culture-bearing strata was defined as Depositional Unit 3, linked to Cornelius and Elizabeth VanDeventer Fountain's occupation (1786 to 1815). The soil matrices for this depositional unit consisted of a dark brown silty sand within two shell middens (Features 8 and 15). These are the only two discrete deposits that can be associated with Cornelius's tenure. The ceramic deposits in Feature 8 (Units 8 and 10) were fragmentary, but somewhat less so than the yard deposits. There were 171 sherds recovered from the midden, of which 119 datable fragments yielded a MCD of 1785 and a TPQ of 1800. One stoneware

jug with blue decoration (Vessel #57) and one red slipware "pie plate" (Vessel #51) were more complete than the majority of sherds, but were not complete enough to permit the identification of the manufacturer by their design. Glass recovered from the deposit was too fragmentary to identify or date.

The second shell midden (Feature 15, Unit 20), which dates to approximately the same time period (TPQ 1800), has a much smaller ceramic assemblage (27 sherds, of which 10 are datable). The glass assemblage, like Feature 8, was too fragmentary to identify or date.

Features 8 and 15 had very similar contents in terms of the shell and the ratios of molluscan species. Both middens had small amounts of bone, which, however, were very different in composition. The bulk of each midden consisted of oyster and hard-shell clam, with similar ratios of oyster to hard-shell clam (Table 5.1). Other clam species were present in negligible amounts, making up less than one percent in each case. This suggests accidental inclusion. Several parasitic species known to feed on oyster and clam were present in small amounts, and are also considered to be accidental inclusions. The general condition of the shell was powdery and flaking, indicating that they had been exposed to a high degree of heat at some point (Kent 1988). All the oyster and clam shells were split open and some of the clam showed signs of having been cracked. No pry marks were observed on the oyster.

The bone presented a less homogeneous picture. The quantity was less in Feature 8 than in Feature 15. The bone in Feature 8 was identifiable only to the level of class and no elements were identified. On the other hand, Feature 15 had a high percentage of identified domestic species including pig, cow, and horse, all represented by teeth and mandible fragments. Generally high percentages of cranial material indicates the presence of a butchering activity. This is important because it provides evidence of on-site butchering and self-sufficiency for the early occupation at the site. In contrast, the faunal data recovered from a later occupation (i.e., Henri Mouquin, 1875 to 1901) indicated that all of the meats were purchased (see discussion for Depositional Unit 6 below).

4. Depositional Unit 4

The second culture-bearing strata, Depositional Unit 4, was characterized by soil matrices generally described as very dark gray/brown silty sand to sandy silt. Analysis of the artifactual materials recovered from this deposit yielded a MCD of 1788 and a TPQ of 1827, placing it within Abraham and Mary Guyon Fountain's tenure of the property (1815 to 1835). The fragmentary and weathered nature of the material indicates that the assemblage was from a horizontal yard deposit. This deposit contained 566 ceramic sherds, of which 443 were datable. The sherds, like those recovered from other yard deposits, are very fragmentary and most

TABLE 5.1

FEATURES 8 AND 15

FEATURES 8 AND 15 - SPECIES SUMMARY

FEATURE 8				FEATURE 15			
Species	Ct*	Wt	%	Species	Ct*	Wt	%
Bone				Bone			
Unid. Mam	1		11	Dom. Mam	26		61
Unid. Bird	1		11	Unid. Mam	13		30
Unid. Fish	7		78	Unid. Fish	4		9
TOTAL	9		100	TOTAL	43		100
Shell				Shell			
Oyster	430	10.772	33	Oyster	762	14.122	35
Hd-sh. Clam	556	21.624	66	Hd-sh. Clam	564	24.417	61
Other Clam	6	.016	-1	Other Clam	17	.047	-1
Fulgur Welks	5	.212	-1	Scallop	1	.001	-1
Parasites	7	.006	-1	Fulgur Welks	1	.033	-1
				Parasites	42	.026	-1
TOTAL	1,004	32.630	100	TOTAL	1,387	40.267	100

*Shell counts are for hinges. Fragments were not counted.

were assigned to the "unidentifiable" function category. There were some very early, pre-Fountain occupation ceramics in this deposit: 2 fragments of "Midlands Mottled" ware dated to 1660-1750; 3 sherds of Whieldon ware dated 1740-1770; and 1 sherd (Vessel #48, which mended with another sherd from a more mixed yard deposit) of yellow slipware with narrow, vertical combed lines. Noel Hume (1969:135) dates these narrow combed-line vessels to pre-1700. There are also 21 delftware sherds which are likely to predate Abraham's occupation, but most of the sherds in this deposit have date ranges which encompass his 1815-1835 occupation.

The glass assemblage consisted of 434 very fragmentary sherds, 344 of which are inclusive in the wine/liquor bottle category. The majority of remaining sherds were placed into unidentifiable groupings. Only one sherd was datable from the entire collection and is an "amethyst tinted or solarized" fragment (post 1880) from the upper stratum. Its presence in the upper stratum suggests that the fragment is intrusive to the deposit.

A number of window leads were present in the deposit. Three fragments were chosen in order to determine if they were stamped with a maker's mark and a date. They were mangled and entwined and had to be pried open. However, before attempting to pry open the lead fragments, they were soaked in solution in order to remove encrustations and make them more pliable. This procedure was prescribed by Susan Hanna from St. Mary's City, Maryland (cf. Egan, Hanna, and Knight 1986). They were gently pried open, polished, and then sealed in wax. Unfortunately, the lead fragments were so thin and brittle, that some breakage occurred when they were pried open. One of the leads was stamped with "H 17" that probably indicates the date the vise was made. Since the last two digits were not on the fragment, it could only be assigned a general eighteenth-century manufacturing date. In addition, all three of the fragments exhibited the characteristic notching, which was quite frequent and pronounced.

The stamped maker's mark and date, and the notching, were the consequence of manufacturing techniques. This involved the use of a vise through which strips of lead were passed. The resulting lead was H-shaped in profile and characteristically notched from the gearwheel. The maker's mark was on the gearwheel and, depending upon its diameter, would be stamped on the lead every three to five inches. Any date present would not be the date the lead was manufactured, instead it would reflect that of the vise's gearwheel. The use of the vise regulated the amount of lead used (Egan, Hanna, and Knight 1986). Susan Hanna has suggested the maker's mark was used to regulate the quality of the leads sold. Marks are present only on one side of the lead.

Three military buttons made of bone with gilded facing were recovered. The facing was stamped with a castle, the name Enniskillen, and the number 27. The overall shape of the buttons was flat with a four-hole attachment on the back. Two buttons

measured 1-1/8" in diameter (Plate 5.1) while a third measured 5/8" in diameter (Plate 5.2). All three have the same design, except that the number 27 does not appear on the smaller button. Research revealed some interesting information about the buttons. Based on the style, shape, and the materials, it was ascertained that the buttons came from the jacket of a British officer, dating between the late eighteenth-century and 1820 (Ripley 1971: 7-9; Luscomb 1967). Further research revealed the buttons were those of the Enniskillen Fusilliers, the 27th British Regiment. The Enniskillens were originally the 6th Dragoons Regiment (Barnes 1950:24-27). However, prior to the Revolution the British crown had deactivated most of its regiments in an effort to cut costs. When the Revolution began, it was forced not only to reactivate old regiments but to create new ones. Most of the troops sent to America were green, and unseasoned. Dragoon is a nickname for musket, fusillier is an improved musket. Fusilliers were escorts for heavy artillery. When trouble began the 6th Enniskillen Dragoons were reactivated as the 27th Enniskillen Fusilliers (Barnes 1950:27). In October of 1775 the Enniskillens arrived in Boston, Massachusetts. They remained in America until they were sent to the West Indies in 1778 (May 1974:24-25). Their itinerary during the three years spent in America is unresearched at this time. However, it is known that the British did take VanDeventer's point on Staten Island during the war. The Enniskillen Fusilliers were definitely present for the Battle of Brooklyn Heights, August 27-29, 1776 (Schlesinger 1983:122; May 1974). In addition to the buttons, a musketball and a gunflint were recovered. Musketballs were gradually replaced by the tapered bullet after 1850. Gunflints were phased out by hollow hammers with percussion caps after 1822 (Coggins 1983:26-36).

Faunal material within this depositional unit consisted of domestic mammal, rodent, bird, fish, tortoise, and shell. Bone was predominately mammal, most of it unspeciated due to a high degree of fragmentation, which may be the result of trampling. Domestic mammal species included cow, horse, pig, and sheep. Looking at element groupings for identified species only, a pattern emerges (Table 5.2). Cranial and metapodial elements are often butchering by-products, while pelves and limbs represent consumable parts. Here the cranial and metapodial elements represent over 50 percent of the sample, suggesting this is the result of butchering activities. The longbones and pelvic bones recovered were fragmentary and did not show butcher marks. Turkey was represented by an ulna. This was one of the few cases a bird species was identified outside of Feature 5 (see Depositional Unit 6). The reason for this was the high state of fragmentation of all the bone from most of the deposits. Shell species included moon snail, knobbed welk, oyster, and hard-shell clam. By far the most frequent were hard-shell clam and oyster.

This deposit was located in the southeast yard area of the site. Although some of the strata from this yard deposit exhibited some

PLATE 5.1:
27th Enniskillen Regiment-British Officer's Button, Probably from a Jacket. Gilded Facing Over Bone - Stamped. 1 1/8 Inches 22.(2.9cm) Diameter

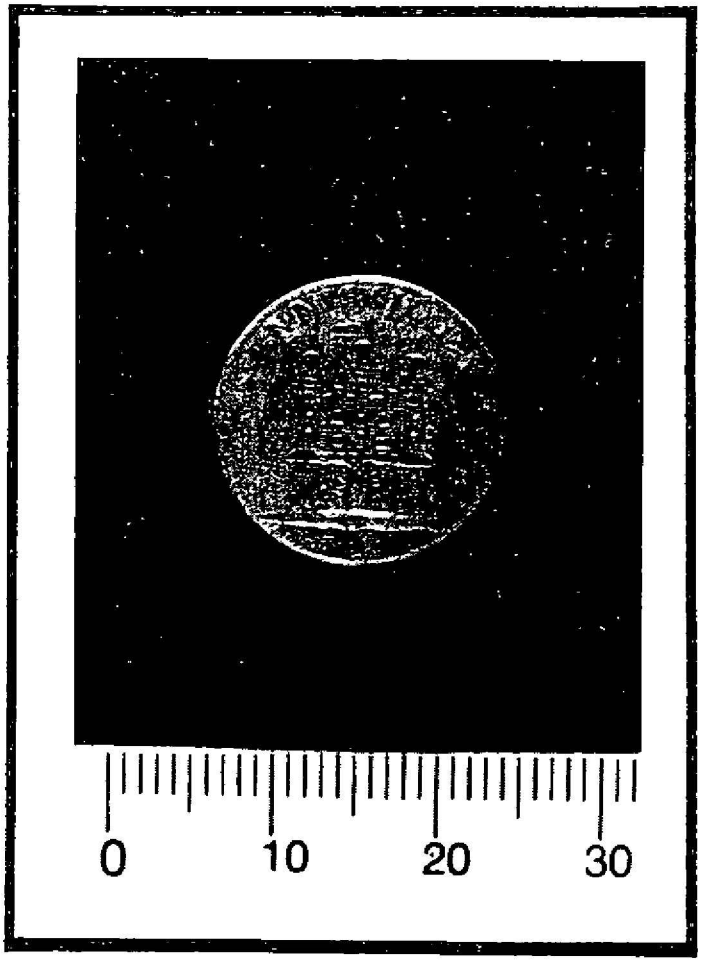


PLATE 5.2:
27th Enniskillen Regiment-British Officer's Button, Probably from a Sleeve. Gilded Facing Over Bone - Stamped. 5/8 Inches (1.6cm) Diameter.

TABLE 5.2

ELEMENT GROUPS

DOMESTIC MAMMAL SPECIES

	Pig	Sheep	Cow	Horse	Total
Element Group					
Cranial	4	1	3	1	9
Metapodial	1	3	3		7
TOTAL					16
Pelvic	2		1		3
Hindlimb		1			1
Forelimbs		3*			3
TOTAL					7

*Actual count 14, but 12 mended to one element.

mixing between Cornelius, Abraham, James, and Herman Fountain's households, the vast majority can be associated with Abraham's occupation.

The tobacco pipe assemblage from this depositional unit is not very informative. It is small and fragmentary with only 75 white clay bowl fragments, 169 white clay stem fragments, and 3 red clay pipe fragments, for a total of 247 fragments. The measurable stem bore diameters range from 4 to 7/64ths of an inch. The majority (58) are 5/64ths in diameter; 29 are 4/64ths, 12 are 6/64ths, and 6 are 7/64ths. All of the pipe bowls were fragmentary and non-reconstructable. Their shapes could not be identified, except in general terms. Maker's marks are scarce and include "Peter Dorni" on a stem and several "RT" marks on bowls. The "RT" marks probably stand for Robert Tippet. The various members of the Tippet Family of pipemakers worked in Bristol, England from 1680 to the mid-eighteenth century (Walker 1977: 1314-1321), but it is possible that the mark was in use, either legally or illegally, in the latter part of the century (Walker 1977:616-619). None of the RT marked pipes could be more precisely dated from their bowl shapes. The mark of Peter Dorni was widely used in the last half of the nineteenth century by French, Dutch, and German makers (Walker 1971:85) and thus cannot be more exactly dated. Abraham's tenure (1815-1835) does not fit either the RT or Dorni pipes, but the pipes are so fragmentary that they could easily be displaced in yard deposits.

5. Depositional Unit 5

Depositional Unit 5 was characterized by very dark gray/brown to brown mottled sandy soils. Artifact analyses of this deposit, located in the west yard area and the area adjacent to the western addition to the house, yielded a range date of the eighteenth to early twentieth century. This represents a mixture between the various households associated with the site, from Cornelius Fountain (1786 to 1815) to Henri Mouquin (1875 to 1901). The highly mixed nature of this deposit indicates that this particular area of the site was highly utilized by all households. Since no discrete deposit could be linked to a particular household, its usefulness in addressing the research questions is very limited.

One interesting artifact recovered from a mixed yard deposit in Unit 19 was a partial pipe bowl marked, faintly, "NOE...LYON" (Plate 5.3). This mark is almost certainly "NOEL LYON." This fairly thick-walled pipe has a slightly squashed heel, pronounced ridges along either side of the stem which give the stem a markedly oval shape, and a bore diameter of 6/64ths. The firm of Noel Freres operated in Lyon, France from 1808 to 1920 (Walker 1977:294-5). Sometime around 1890, the firm was taken over by the Gambier pipe company and, according to Walker, pipes marked "NOEL LYON" were made for domestic production, while those marked "NOEL PARIS" were for export (Ibid.).

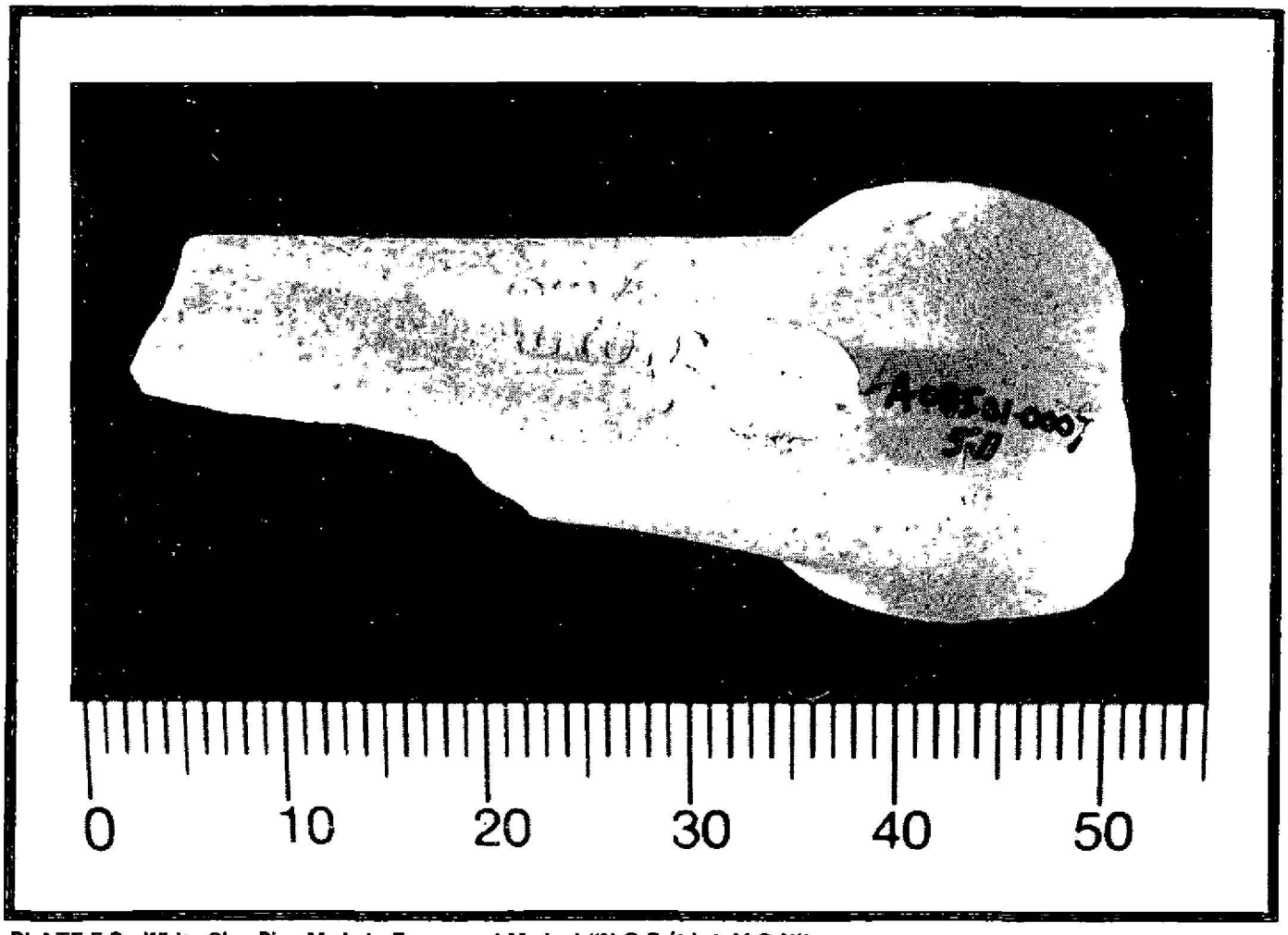


PLATE 5.3: White Clay Pipe Made in France and Marked "N O E (L) L Y O N".

If this is so, the pipe from the site was probably made to be sold in France after 1890. There was only one pipe stem fragment (6/64ths bore diameter) from Feature 5 (the Mouquin deposits), so it is not likely that any of the last inhabitants were frequent clay pipe smokers. It is possible that the French pipe bowl was brought to the site by a visitor. Pipe bowls marked NOEL ALYON have been found on at least 4 mid-nineteenth-century North American sites (Walker 1977:294) and the Fort Drum, New York excvations, (Louis Berger & Associates, in press). Walker implies that the Alyon ("at Lyon") mark was not used after 1890, but the picture is not clear. However, it is probable, but not certain, that the pipe recovered from Unit 19 was sold in France after 1890.

6. Depositional Unit 6

The final occupational deposit, Depositional Unit 6, was located within a brick shaft (Feature 5). The soil matrices in these deposits varied from dark gray/brown silty sands to ash and cinder to very dark/gray brown sands. Analyses of the domestic material recovered from the feature yielded an MCD of 1870 and a TPQ of 1898, placing it within the Henri Mouquin tenure of the property (1875 to 1901). Additional analyses, based on ceramic cross-mending within the strata and the size, type, and date range of the artifacts, divided the feature into two discrete deposits. The lower deposit (Strata 13 to 19) was discarded sometime between 1880 to 1898, and consists of relatively complete (more than 50%) ceramic vessels. However, the glass recovered from the lower reaches (Stratum 19) of the deposit dated to a much earlier time period (1852 to 1870) than the ceramic assemblage. This mix-ture of earlier with later dated items was noted at the Middleton Place privy in South Carolina (cf. Lewis and Haskell 1981). Lewis and Haskell suggested that such an assemblage would indicate that the material was deposited in a single depositional episode. Such a deposit was probably the result of a household (e.g., the Mouquins) throwing out abandoned and no longer useful items left by the previous occupants along with their own items that may have been broken during shipping, moving into the house, or soon after their occupation. In addition, the earlier component in Feature 5 was similar in composition to the one from the Middleton Place privy. Both consisted mainly of artifacts used to store non-food commodities (i.e., pharmaceutical containers and beverage bottles). Such items, as Lewis and Haskell point out, exhibit "characteristics that seem to identify it as an assemblage of artifacts produced as a result of abandonment processes rather than those of day-to-day living. . . In contrast, there is a relative absence of food containers which are usually associated with daily subsistence" (1981:43).

The ceramic assemblage from the lower Mouquin deposit (Stratum 13 to 19) includes pots and jars used to hold cosmetics and toiletries, food storage jars (marmalade/preserve jars), a mineral water bottle, a candlestick, and tea and tablewares. The

toiletry vessels are of several types: cylindrical, plain white jars with fitted lids stenciled in blue with "Guerlain, 15. Rue de la Paix" (Plate 5.4-A); flat square porcelain jars, one of which is marked with a decal stating the contents as "ODO ... nouveau dentrifice, compose par, Mr. J. Pelletier, membre De L'Academie De Medecine, Rue St. Honore, 154" (Plate 5.4-C); and squat round whiteware jars with lids transfer printed in black "Oriental Toothpaste for Cleaning Beautifying and Preserving the Teeth & Gums" above the British coat of arms and, below the arms, "Prepared By Jewsbury & Brown, Chemists, 113 Market Street, Manchester" (Plate 5.4-D and 5.5). The contents of the English toothpaste and the French "dentifrice" jars are obvious, but the Guerlain jars could have contained face cream, ointment, or various other products of this still popular firm. The Guerlain jars are made of delftware (i.e., they are tin-enameled on a relatively soft body) and they are especially interesting because they show that the production of this type of delftware (more properly faience) for small pharmaceutical/cosmetic jars continued until the end of the nineteenth century. The buff-colored bodies of these jars, however, are harder than those used for eighteenth-century delftwares. The candlestick is also delftware. It is decorated with a baroque polychrome floral pattern and has a "leopard spot" handle (Plate 5.6). Its decoration resembles modern Portuguese or Italian faience, but it is marked on the base with a handpainted stylized unidentifiable signature and "France." The use of the country of origin probably dates the candlestick to after 1891, but it could be as early as 1867 (Kovel & Kovel 1986:229). The candlestick was almost completely mendable and it was probably discarded unbroken.

A large, plain chamber pot was also recovered. This pot was tabulated as pearlware because of the color of the glaze (blue/green not icy blue), and the vitrification and relative thinness of the body, but it dates to the last half of the nineteenth century. Similar chamber pots have been found at other New York City mid- to late nineteenth-century sites, and it would probably be better to classify them as CC (common colored) wares in order to avoid confusion with early nineteenth-century pieces (Miller 1980).

Most of the European/American porcelains recovered from this deposit were either plain or simply decorated with a gold band on low relief embossed rims. The single Oriental porcelain teaware was a fragment of a teapot decorated with a general undatable underglaze blue design.

The most interesting ceramics from the entire site are a number of table and teawares manufactured by the firm of Utzschneider in Sarreguemines, Lorraine, France. Most of the sherds and vessels were found in the lower levels of Feature 5, but some were scattered in yard and demolition deposits. All but one vessel are earthenwares with a fairly hard white body and polychrome decorations. One plate is soft paste porcelain decorated with a red transfer printed chinoiserie design overpainted in purple, two shades of yellow, light green, slate blue, pink, and dark red.

PLATE 5.4: Seven Cosmetic/Toiletry Jars.

A & B.

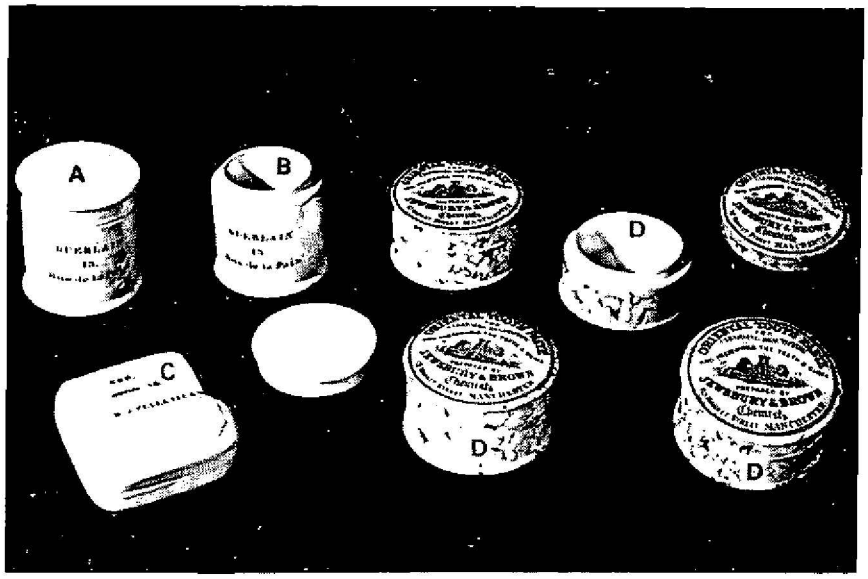
Tin - enameled (Delftware) with Blue Stenciled Lettering

C.

Porcelain with Black Transfer Printing and Hand - Painted Luster Highlights.

D.

Whiteware with Black Transfer Printing.



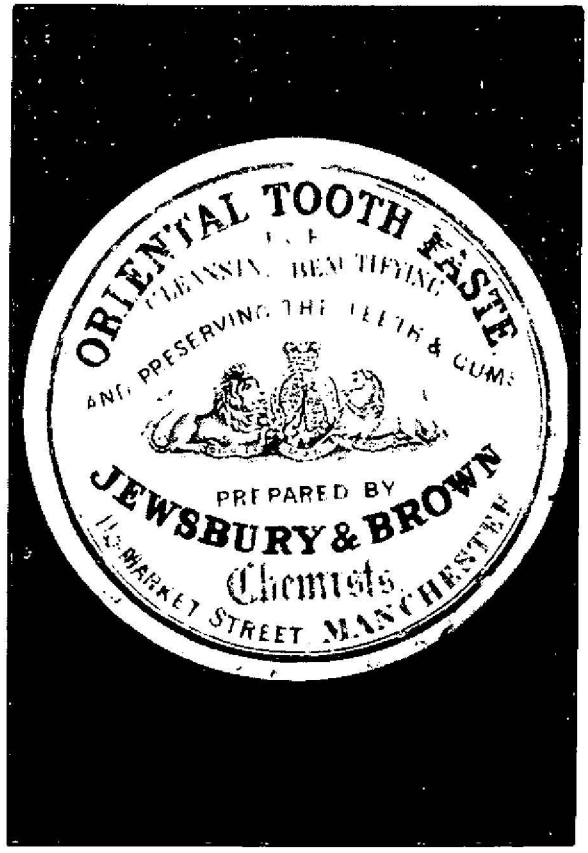


PLATE 5.5:

Lid from a Small Toothpaste Jar. Black Transfer Printed, 2 7/8 Inches in Diameter. The Bases of these Jars are Transfer Printed in a Faux Marbre Pattern.

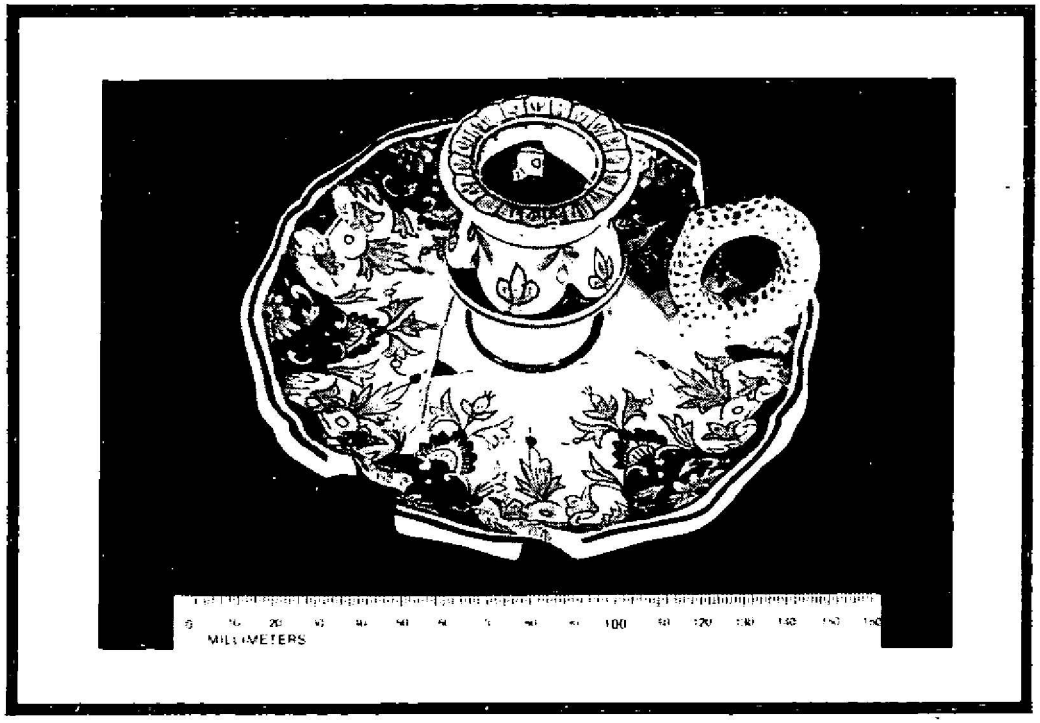
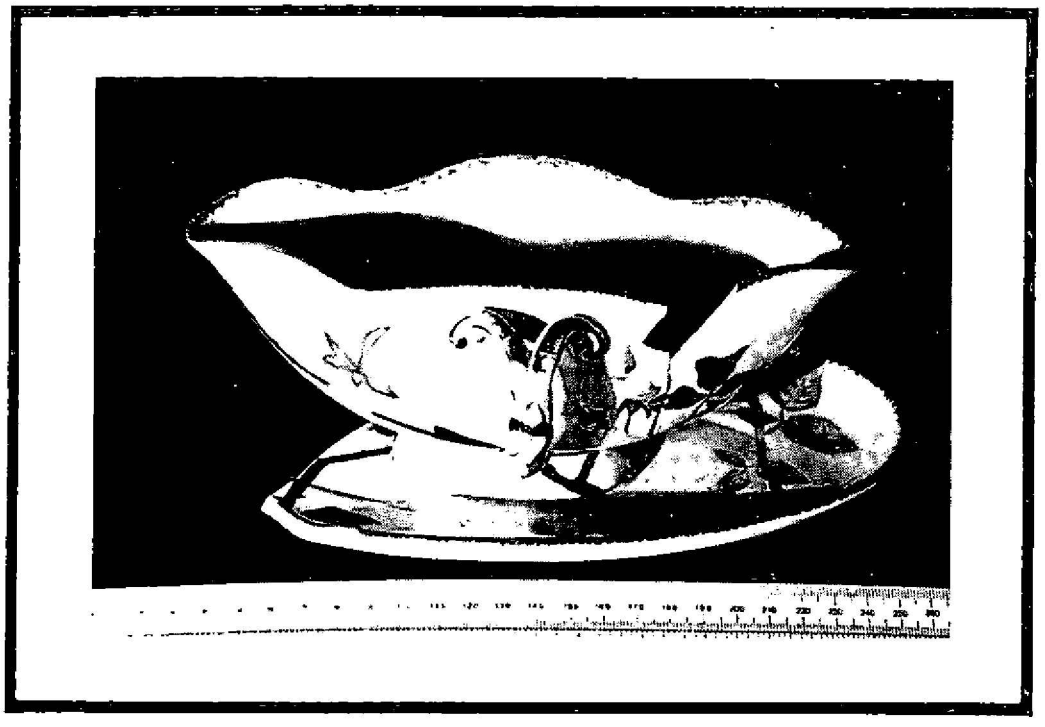


PLATE 5.6: Tin - enameled (Delftware) Candlestick. Hand - Painted in Blue, Yellow, Rust, Light Green and Brown. Maximum Diameter 6 1/4 Inches, Height - 3 1/4 Inches.

PLATE 5.7: Double Handled Sauceboat. Whiteware Decorated in the "Bouquet" Pattern with Hand - Painted, Possibly Sponged, Agua Border and Transfer Printed (Rose) Design Hand Colored in Pink, Light Green, Brown and Yellow.



The vessels have a variety of marks which include the words "U. & Cie." (Utzschneider and Company), "Sarreguemines," and, on the polychrome earthenwares, the pattern name (Figure 5.1). Some of the tablewares also have impressed letters and numbers (for example E4) which probably indicate size and shape of the vessel. Floral motif pattern names are "Bouquet" on the gravy boat (Plate 5.7), and "Pompadour" on several dishes (Plate 5.8). A distinctive art nouveau style design on at least two cups is marked "Pera" (Plate 5.9). A blue transfer-printed design on several plates and fragmentary hollowares (Plate 5.10) has no pattern name. This latter design is unusual and gives the impression of an individual or family monogram: intertwined letters in the center might read WM and the surrounding band has the partial inscription "IN .... RITAS" (possibly In ... Veritas?).

The pottery manufactory of Utzschneider at Sarreguemines was one of the most famous in France during in the nineteenth century. It has been said that "At the close of the nineteenth century, there was not one family who did not possess some pottery from Sarreguemines. In one hundred years . . . this factory inundated all of France with its products. . . The success of Sarreguemines, with its two hundred workers, its four million pieces produced annually - in 1867 -, was contained in three words: variety, cheapness, quality" Ernould-Gandouet 1969:52).

Francois-Paul Utzschneider was born in Bavaria in 1771 and went to England as a young man in order to study the production of ceramics. He came to France during the Revolution and became associated with the recently established pottery at Sarreguemines in Lorraine. Utzschneider was the French Josiah Wedgwood - both industrialist and artist. His products were varied and, to a great extent, were imitative of Staffordshire wares. He made jasper-like wares, red stoneware, black basalts, earthenware, porcelains, and other wares, and his ceramics received numerous gold medals at various expositions (Lesur et Tardy 1967:444). In 1810, he was commissioned by Napoleon to create imitation jasper and granite garden vases (Lesur et Tardy 1960 (3):954), and nine years later he was decorated with the cross of the Legion of Honor (Lesur et Tardy 1967:444). It is probable that politics were as important as craftsmanship in this award: England and France were in the midst of the conflicts generated by Napoleon, and any manufacturer who could cut into England's monopoly on ceramic production would be a benefactor to the state. English ceramic references denigrate the contributions of Sarreguemines, when they mention the firm at all. For instance, Haggar (1960: 418-419, quoted in Pratzellis et al., 1983:73) says that Sarreguemines imitated the wares of Wedgwood and other Staffordshire potters and adds that "the products were greatly admired but much inferior to those of Wedgwood or most of the leading Staffordshire potters." Politics were also responsible for a change in the Utzschneider Company in the 1870s. The end of the Franco-Prussian War put Alsace and Lorraine in Germany, where they remained until World War I. For the benefit of their

A

Company and Pattern Name Found on Polychrome Floral Plates (Colors Repeat Those of the Floral Motif)

B

Company and Pattern Name from the Polychrome Gravy Boat - Light Brown Transfer Print

C

Company and Pattern Name from a Polychrome Cup - Polychrome (Colors Repeat Those of the Art Nouveau Motif)

D

Company Name ("U" & "C" Superimposed on "Sarreguemines") Found on Burned and Unburned "Monogram" Plates and Cups - Blue Transfer Print

E

"Blason de la Lorraine" "Arms of Lorraine" on the Porcelain Plate - Blue/Green Transfer Print with Light Blue Hand Painted Tally Marks

F

Arms of Lorraine with "Made in Germany" Found on an Unmending Base Sherd - Smudged Black Transfer Print

G

Non-Utzschneider Mark from the Delftware Candlestick, "France" and Unidentified Cypher or Monogram - Blue Hand Painted

FIGURE 5.1: Utzshneider Marks

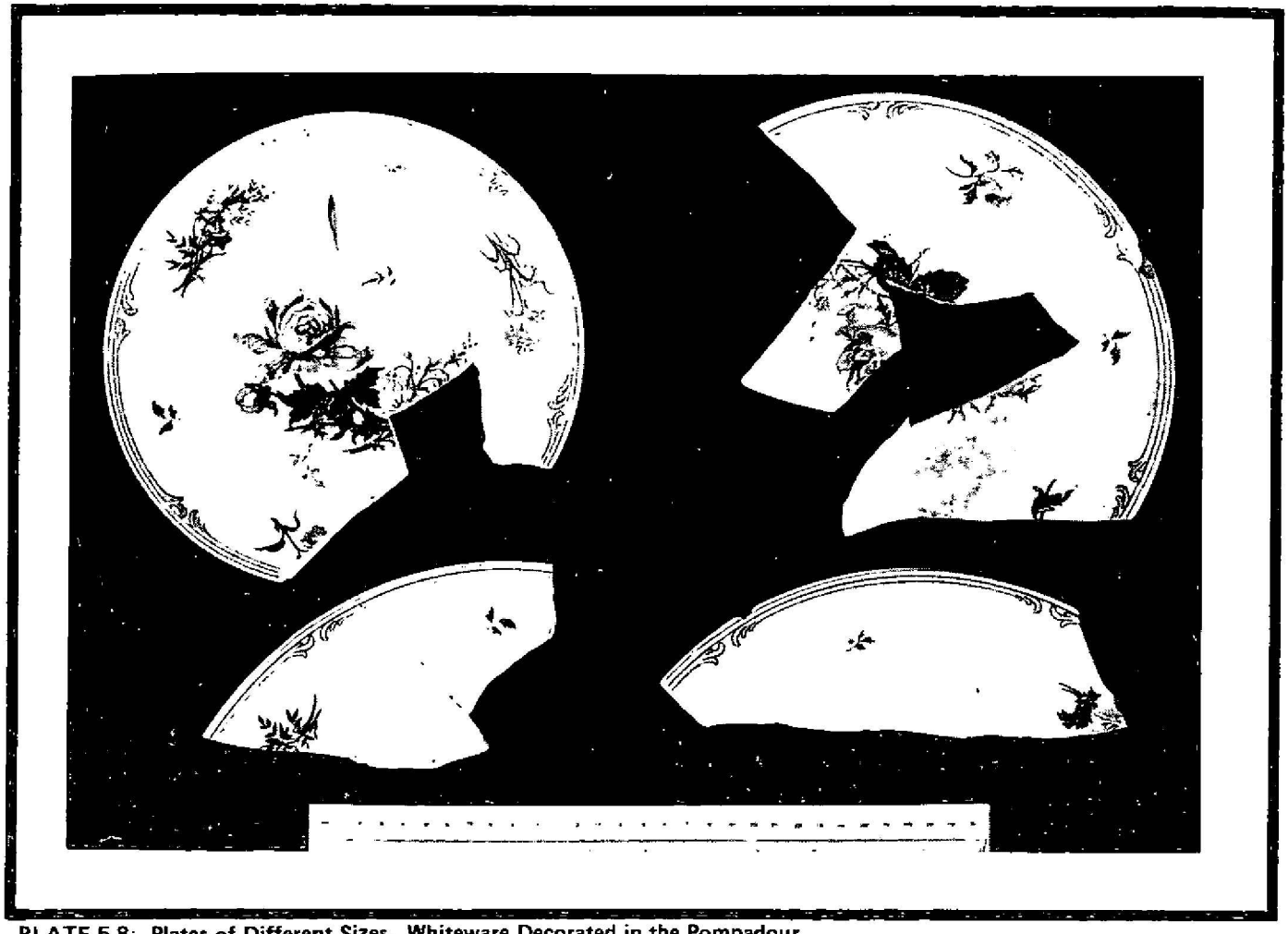


PLATE 5.8: Plates of Different Sizes. Whiteware Decorated in the Pompadour Pattern. The Border is Yellow and Pink on All the Vessels, but the Central Flowers and Floral Design Sprigs Differ in Color and Design. The Central Flower of the Plate at the Left is Purple, but Yellow on the Plate to the Right.

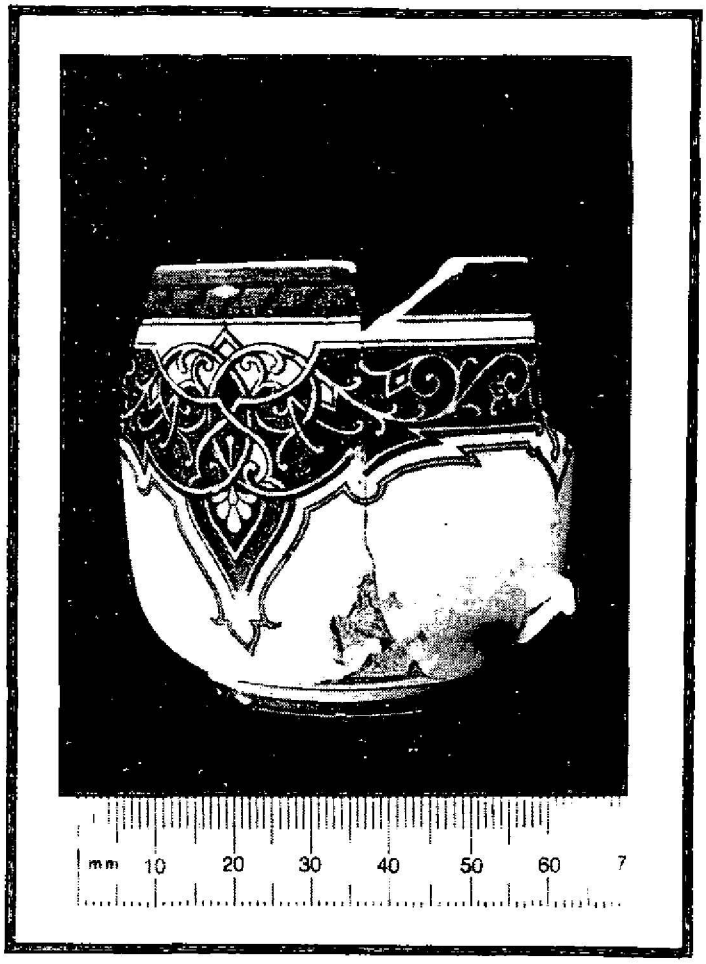


PLATE 5.9.
Whiteware Cup with Art Nouveau Style "Pera" Pattern
in Blue/Green, Yellow, Pink, Brown and Black, 2 2/8 Inches Tall

PLATE 5.10:
The Central Blue Transfer Printed "Monogram" Motif on some Burned and Unburned Plates. The Mark on These Vessels is "U & C" Superimposed on "Sarreguemines". The Body is Cream-Colored Whiteware.

workers, "who wished to remain French," two subsidiary factories were established in 1874 in France at Digoin and Vitry-le- Francois (Ernould-Gandouet 1969:52). The pottery of Sarreguemines is still in existence today (Kovel and Kovel 1986:36 & 209).

The earthenwares produced at Sarreguemines in the nineteenth century were varied and were known for their hard, brilliant glaze and bright colors (apparently sometimes quite gaudy - Ernould-Gandouet uses the adjective "galvaude" which translates as "messed" or "muddled" and has perjorative connotations). The floral decorations on the Feature 5 tablewares however, are restrained and resemble those on eighteenth-century Strasbourg faience (Lesur et Tardy 1961:Figures XXII, XXVI, and XXVII) with large central asymmetrical flowers surrounded by smaller floral sprays and brown lines around the rims. Other French and English manufacturers used similar floral decorations during the nineteenth century, and it was common to have different central flowers on different sized vessels (see Plate 5.7).

The vessels from Feature 5 exhibit at least 5 different decorative motifs on the earthenwares, and the single porcelain plate has a unique decoration (Plate 5.11). The "Pompadour" pattern is on at least two different sized plates, a platter, and a cup. "Bouquet" is on the gravy boat, a drainer, and plate fragments. "Pera" is on at least two cups, and another unnamed pattern with a dragon fly is on another cup (Plate 5.12). The blue transfer-printed "monogram" pattern is on several plates of different sizes; an unusual feature is that at least two plates from Stratum 17 have been so badly burned that their glazes have melted and fused together. This would require an intensely hot fire. The vessels have a variety of marks (see Figure 5.1). The ceramic references available to us are rather vague about the dating of particular marks. Ernould-Gandouet illustrates a number of marks. Those found on the Feature 5 ceramics are dated broadly to the second half of the nineteenth century. One undecorated and unmendable sherd has a black transfer printed mark which includes the heraldic shield of Lorraine (as does the mark on the porcelain plate) and "Made in Germany." The McKinley Tarrif Act of 1891 required that all goods imported into the United States bear identification of country of origin, but marks including the name of the country were sometimes included before 1891. Kovel and Kovel (1986:229) say that the first use of the word "Germany" of which they have knowledge was in 1885. (At the very earliest, "Germany" would not be used with Sarreguemines until after the Franco-Prussian War.) The word "Depose" in the Bouquet pattern mark indicates that the pattern is registered. Kovel and Kovel date the use for this word to circa 1900 (1986:230). The fills in Feature 5 are associated with the tenure of Henri Mouquin and his family, and it is possible that the Sarreguemine ceramics were purchased by Mouquin in Europe. However, the 1894-95 Trow's New York City Business Directory, but not the 1892 or 1896 editions, listed "Faienceries de Sarreguemines (Lorraine, Europe) Utzschneider & Co." at 69

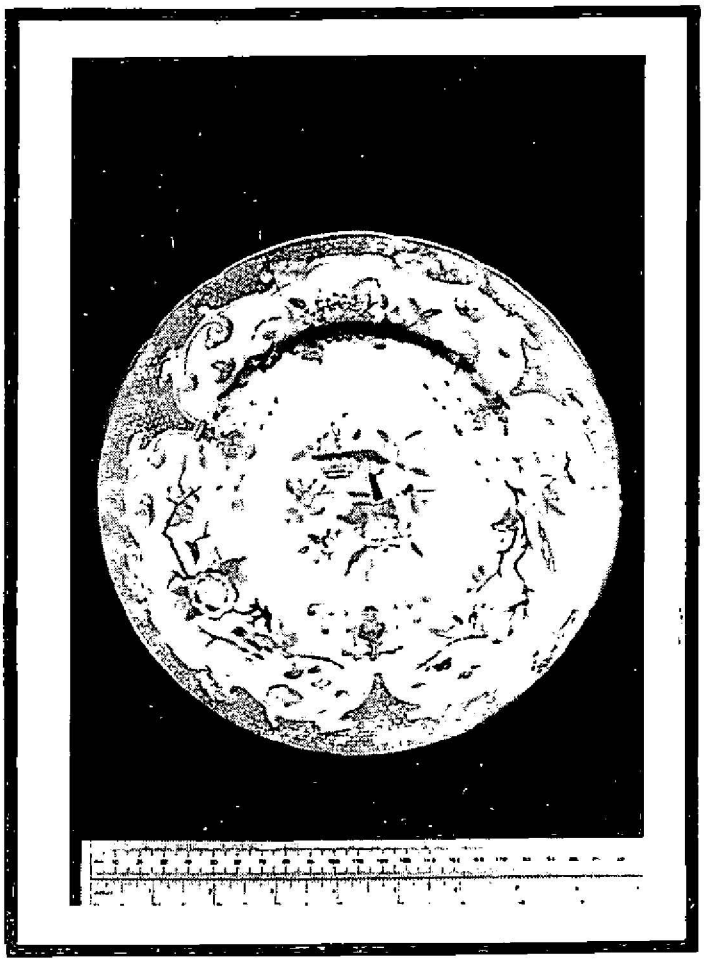
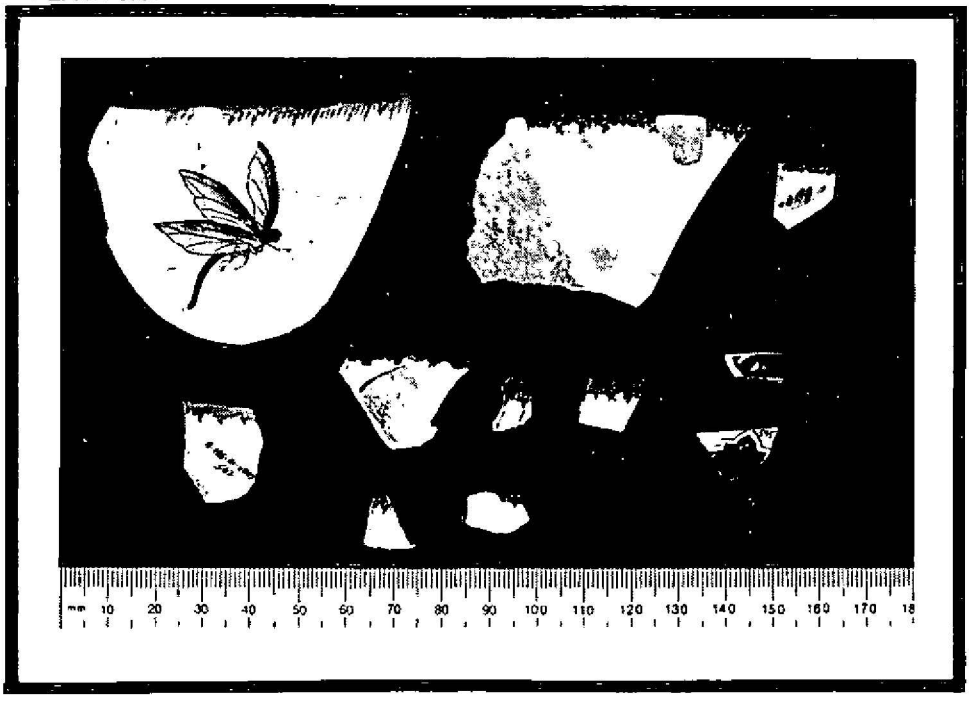


PLATE 5.11:
Soft Paste Porcelain with Chinoiserie Polychrome Floral Motif. Underglaze Transfer Printed Outline with Hand Painting. The Mark is Simply the Arms of Lorraine without a Company or Pattern Name.

PLATE 5.12:
Various Unmendable Whiteware Sarreguemines Sherds. The Partical Cup at the Upper Left Has a Pink Hand - Painted Border and the Dragon Fly Has a Brown Transfer Printed Outline Hand - Painted with Slate Blue and Blue/Green. The Plate Fragments Have Aqua Borders which Resemble the "Bouquet" Pattern in PLATE 5.6.



Duane Street in Manhattan (Trow 1894:219). It is quite likely, therefore, that at least some of the Feature 5 ceramics were purchased in New York City. It is also possible that Mouquin supplied his restaurants with tablewares from Sarreguemines (although none of the available references mentioned the manufacture of hotelwares). It is tempting to speculate that the blue transfer-printed "monogram" decorated plates might have been used in a restaurant, but there is no evidence to support this speculation.

An interesting non-French vessel from Stratum 19 is a small child's mug (Plate 5.13). This late pearlware vessel has a dark brown transfer print illustrating one of Benjamin Franklin's maxims. The picture is of a dock or pier with a sailing ship, sailor, barrels, boxes, and a merchant or customer. The text combines several sayings:

> The Way to Wealth
> or
> Dr. Franklin's
> Poor Richard Illustrated
> Being Lessons for Youth
> on
> Industry, Temperance
> Frugality, etc.
> Diligence is the mother [of] good luck &
> God gives all things to Industry.
> By diligence and persev . . .
> . . . the cable in two

Two almost identical mugs have been found at the Greenwich Mews Site in New York City (Geismar personal communication). The Greenwich Mews Site dates from the 1840s to the 1880s. Small transfer-printed mugs for children were popular in the nineteenth century, and a series of Franklin's maxims was produced with two and, less commonly, four sayings (McClinton 1978:217). The Feature 5 cup has three maxims and is probably from a different series than that noted by McClinton. The top saying on the cup "By diligence" etc., is slightly more complete on the Greenwich Mews cup and the reconstructed maxim is "By diligence and perseverance . . . eats the cable in two." The entire maxim, as written by Franklin, is actually "By diligence and patience the mouse bit into the cable" (Goodman 1945:299).

The glass assemblage from the lower strata (13 to 19) of Feature 5 includes 89 vessels. Of the 86 vessels identifiable in terms of general function, 55 are bottles, 22 are tablewares, and 9 are lamp or lighting-related items. This assemblage is the most well-rounded collection of glass domestic refuse recovered from the site. The majority of vessels were intact, or at least fully reconstructable, suggesting that they were discarded unbroken. Most of the temporally diagnostic vessels have been dated according to general manufacturing technique (i.e., post-1857 for the use of a snap-case device to hold a container for finishing). The

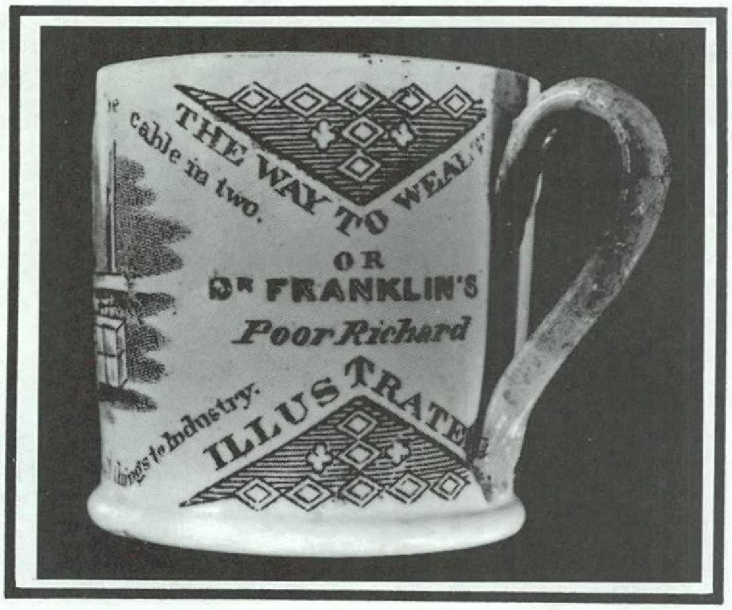
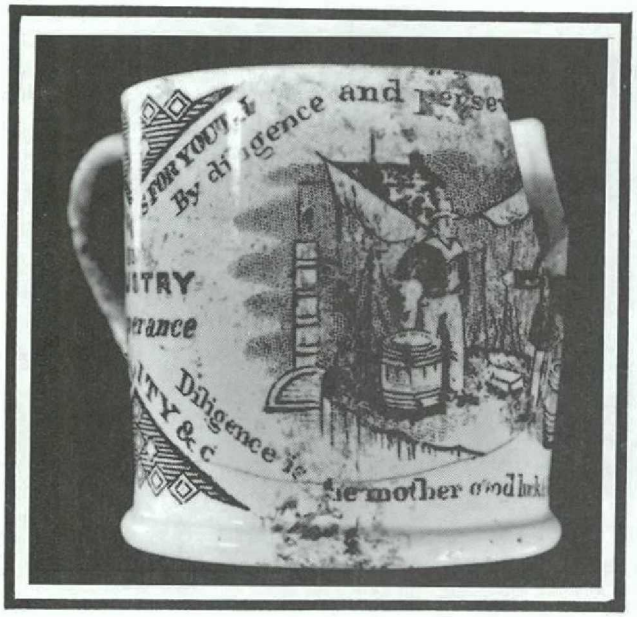
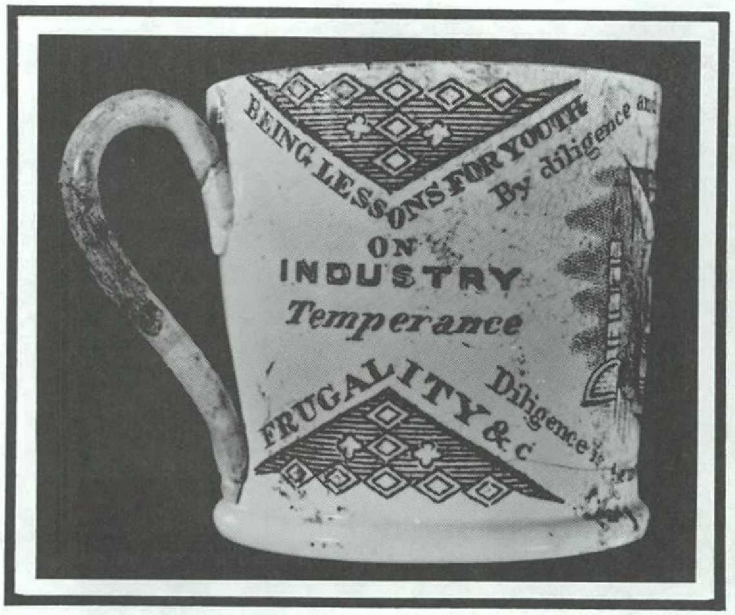


PLATE 5.13.
Small Child s Mug. Pearlware Transfer Printed in Very Dark Brown with Popular Sayings from Franklin's Maxims. 2 1/2 inches Tall.





majority of date ranges for the vessels thus encompass Henri Mouquin's tenure (1875 to 1901) at the site. The presence, however, of several vessels (bottles in particular) with end-dates pre-dating Mouquin's initial occupation by five to ten years, suggests a deposition date considerably later than their period of manufacture and/or likely use. This deposit thus appears to contain items probably associated with James and/or Herman Fountain, the previous occupants (1845 to 1872) of the site. Select bottle and tableware vessels are discussed according to functional groupings below.

Six vessels are functionally inclusive in the wine/liquor category. Four are cylindrical in shape; three of which have fully identifiable forms characteristic of the nineteenth century and associated with traditional European styles. Vessels #6 and #13 are intact, champagne-style wine bottles occurring in two sizes (approximately 245.0 mm and 300.0 mm in height, respectively). Made of thick, dark olive-green glass, both have finishes characterized by sloped, plain lips above squared-off string rims; the necks gently taper towards the shoulder junctions. Both bases exhibit large mamelon protrusions in their basal cavities; their push-ups are bell-shaped in profile with flattened tops. Vessel #30 is an intact Bordeaux-style wine bottle of relatively thinner, light olive-green glass. The finish is a plain lip above a flattened, sloppily applied string rim; the sloped-down shoulders are more well-defined than the champagne-style forms. The base also exhibits a mamelon in the basal cavity and the push-up is similarly bell-shaped. Vessel #77, dated post 1857, is an intact flask of colorless glass. Its finish is composed of a long, sloping collar above a rounded, v-tooled string rim. The body was blown in a cup bottom mold with a snap case used for finishing. Also present in the wine/liquor category is an undated, square-sided gin or case bottle (Vessel #32), represented by its finish, a uniformly sloping collar above down- tooled string rim, and several associated body sherds. One body fragment is vertically embossed "SCHIEDAM", indicating the bottle is of Dutch origin.

Nine vessels fall in the Soda/Mineral Water category. Believed to have therapeutic (medicinal) value and encouraged for consumption by the temperance movement, as an alternative to alcohol, mineral waters were quite popular throughout the nineteenth century. Seven Saratoga-style bottles (Vessel #s 1-5, 18, and 28) are represented in this deposit by intact or reconstructed bases, short-necked sloping collar finishes, and cylindrical body sherds. The bodies are embossed "CLARKE & WHITE" in a semi-circle over "NEW YORK" with a large "C" embossed within the semi-circle. The firm of Clarke & White bottled water from the Congress Spring in Saratoga, New York under this name from 1852 to 1865 (McKearin and Wilson 1978:235) thus neatly establishing the period of manufacture for these bottles. Vessel #29, represented only by its base, is embossed "VICHY WATER/HANBURY SMITH" in two lines on the front. Of dark olive-green glass, the bottle was blown in a cup bottom mold and snap cased for finishing thus giving it a post-

1857 date. No information on the firm of Hanbury Smith has been obtained. The final vessel (#43, Plate 5.14) in this category is an intact, egg-shaped soda or mineral water bottle in aquamarine glass. Blown in a two-piece mold, the bottle is unembossed with a blob-top finish.

One of the ten Culinary/Condiment (or food-related) bottles recovered from this deposit is a fully reconstructed light aquamarine sauce bottle (Vessel #41) with "LEA & PERRINS" embossed vertically up the side and "WORCESTERSHIRE SAUCE" embossed horizontally around the shoulder. The bottle, dated post 1857, was blown in a cup bottom mold and a snap case used for completing its club sauce finish. Vessels #42 and #47 exhibit generic shapes that resemble containers associated with the storage of condiments or oil. Vessel #42 (Plate 5.15-a), fully reconstructed from base to finish, is of rather thin, pale aquamarine glass. Dated post 1857, the bottle was blown in a cup bottom mold and a snap case used for finishing the slightly everted lip and flattened, squared off string rim. Vessel #47 (see Plate 5.15b) recovered intact, is made of much thicker, pale aquamarine glass. Measuring only 176.0 mm in height, the bottle exhibits a dip- molded body; its gradually sloping, but well-defined shoulders formed in a two-part piece mold. The base exhibits a mamelon protrusion surrounded by a flattened outer rim; the use of a snap case used for finishing the bottle's straight lip and rounded string rim dates the bottle to post 1857. The final seven vessels in this category (#s 7, 14, and 33-37) are undated flacons which presumably functioned as food storage containers. Only Vessel #14 (Plate 5.16) survived intact and exhibits a slender, cylindrical body, squared shoulders and a long, tapered neck culminating in a slightly everted lip. The bottle, measuring 220.5 mm in height, appears free-blown, and exhibits a solid iron bar (or glass- tipped) basal pontil scar.

The only Household-Related Bottles from the deposit are three aquamarine bluing bottles (Vessel #s 38, 39, and 40). Two were fully reconstructable and embossed, "THE ORIGINAL" vertically on the side panel, "E.G. HAZARD'S/LIQUID/BLUING" in three lines vertically on the front, and "NEW YORK" vertically on the reverse side panel. All three bottles, dated 1857-1880, were blown in a two-piece hinged bottom mold; a snap case was used for finishing their short, flattened collars.

The 11 pharmaceuticals in the collection include general apothecary/drugstore bottles, perfume and toilet bottles, and vials. Of particular note are the two embossed apothecary/drug-store bottles. Vessel #52 is panelled with chamfered corners measuring only 69.0 mm in height. Recovered intact, it is em-bossed "CASWELL/MACK & CO." in two lines vertically on the front and "N.Y.&N.P." vertically on the reverse. Blown in a cup bottom mold, a snap case was used to finish its flanged lip. This color-less bottle is dated 1861 to 1868 based on the tenure of the John R. and Philip Caswell, Jr. and Henry Q. Mack partnership (Fike 1987:55). Vessel #44 (Plate 5.17-a), also intact, is embossed

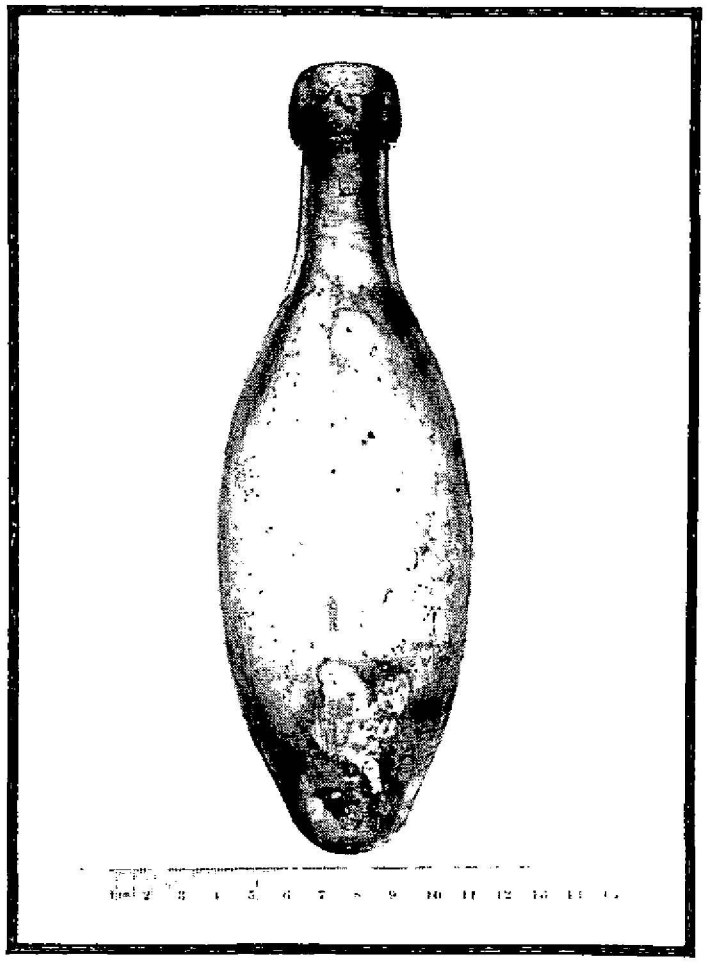


PLATE 5.14:
Soda/Mineral Bottle. Egg-Shaped

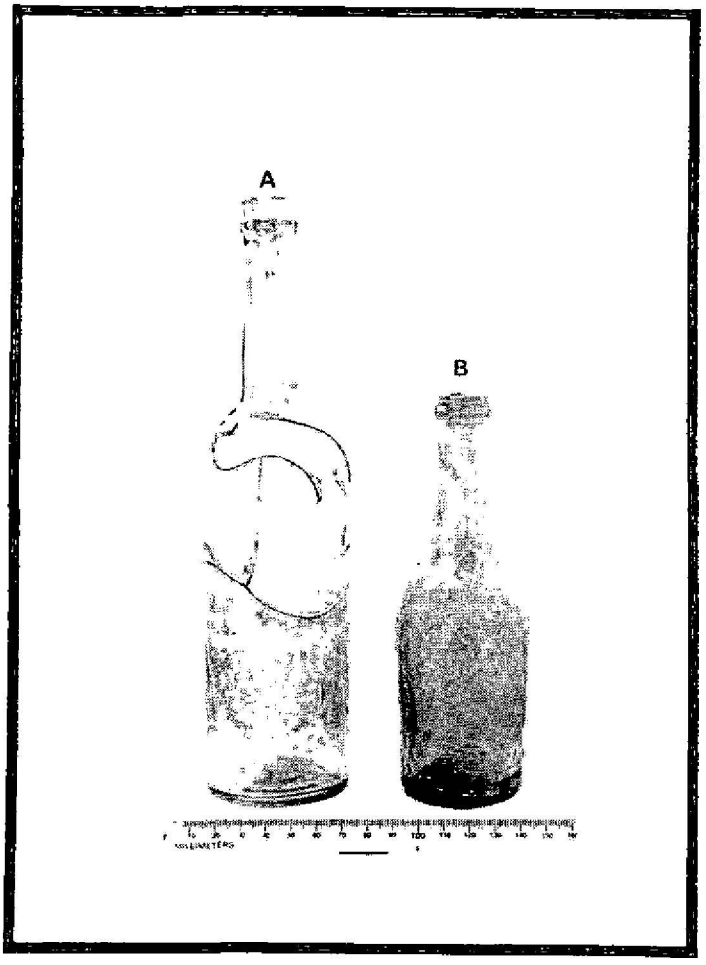


PLATE 5.15:
Food/Storage Bottles. Probably for Condiments or Oil

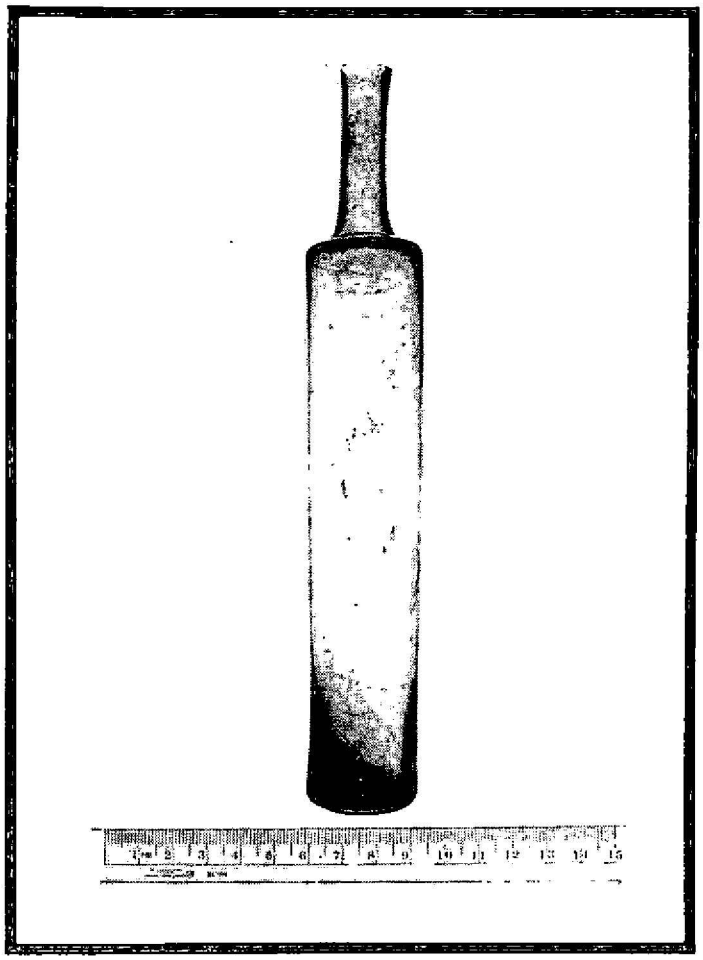
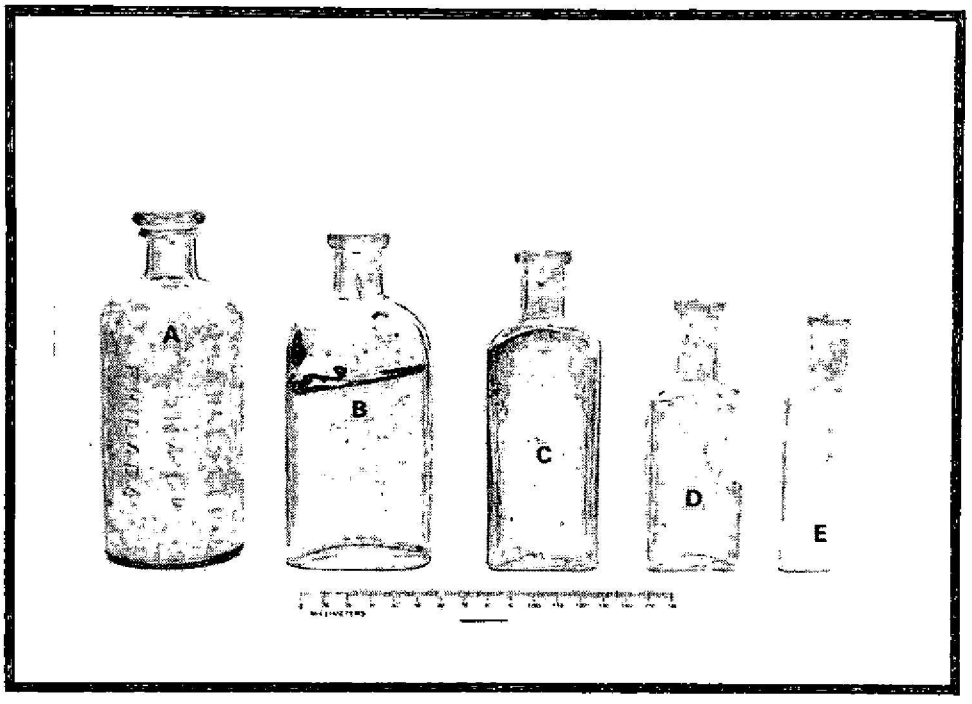


PLATE 5.16:
Food Storage Flacon

PLATE 5.17:
A-Apothecary Bottle. Embossed "CHARLES ELLIS/SON & CO./PHILADA".
B-E Miscellaneous Bottles.



"CHARLES ELLIS/SON & CO/PHILADA" in three lines vertically on the front. Aquamarine in color, it was blown in a two-piece post bottom mold; the snap case was again used for finishing the extra large rounded lip and down-tooled string rim. This bottle is dated post 1871 based on the firm's first listing in Gopsill's Philadelphia city directory (Fike 1987:58). The only decorative perfume bottle (Vessel #51) is embossed "J. PICARD/PARIS" in two lines vertically on the front. This colorless bottle, dated post 1857, was blown in a cup bottom mold; the snap case used for finishing its patent/extract style- lip. No information on the J. Picard firm has been obtained.

The 16 bottles in the assemblage falling into the Miscellaneous category are, for the most part, non-specific as to either function and/or form. Vessel #s 20, 15, and 46 (see Plate 5.17-c,d and e) and Vessel #81, for example, are similar to panelled, prescription bottles as well as bottles containing flavoring extract. Vessel #23 possibly had a pharmaceutical function (see Plate 5.17-b). Unusual in shape, this intact, colorless bottle has two opposing sides which are rounded and two which are flattened; its lip is slightly everted. Although no mold seams are apparent across the basal surface, the bottle appears to have been manufactured in a two-piece hinged bottom mold, thus dating it between 1750 and 1880. The basal surface itself appears roughened, which may have been caused by extensive grinding of either a solid iron bar or blowpipe pontil scar. Vessel #54 possibly also functioned in a pharmaceutical capacity as, perhaps, a container for tablets (Plate 5.18-c). It is a short, wide-mouthed cylindrical bottle of colorless glass. Blown for body form in a dip mold, the shoulders were shaped in a two-part piece mold; the base snap cased for finishing the bottle's straight, folded out lip.

With the exception of one unidentified vessel, all of the tablewares in the assemblage are either drinking stemwares or tumblers. The 14 stemware vessels are represented by decorated as well as undecorated types, although none are datable. The two decorated stem types, made of colorless leaded glass, are quite elaborate. Vessel #s 72 and 78 (Plate 5.19) and Vessel #79, apparently comprising part of a set, are of two-part manufacture. They are true balusters hexagonally cut with facets (or panels) extending up onto the ovoid-shaped bowls; a cut honeycomb pattern extending partially up the bowls from this juncture. The rounded feet are attached to the stems by a step. Vessel #76, of three-part manufacture, is a cut, hexagonally faceted true baluster of hollow construction with a cut, angular knop (Plate 5.20). The somewhat rounded bucket bowl, attached to the stem with a collar, is decorated with a band of mitred diamonds below cut flutes extending halfway up the bowl. The foot is attached to the stem by a step. The undecorated stemware vessels, also made of leaded glass, are of two types. Vessel #s 63 and 73 (Plate 5.21-b and c) and Vessel #64, also apparently part of a set, are of three-part manufacture. They are plain, straight stems with cup-shaped bowls; the feet attached to the stems by a step. Of two-part

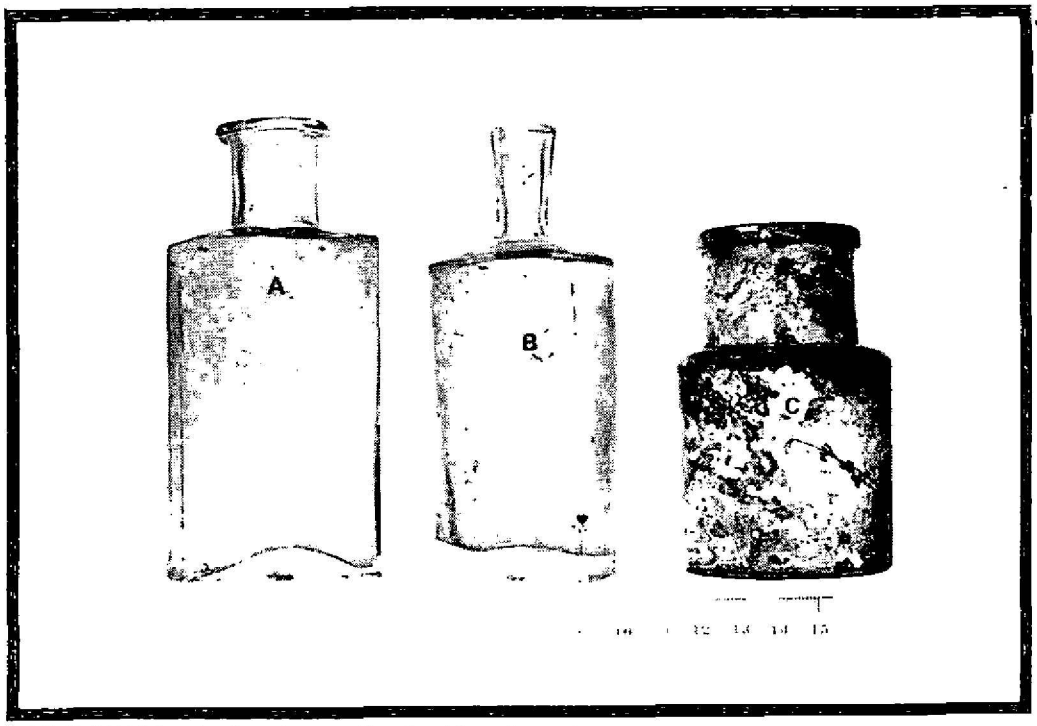


PLATE 5.18: A. Apothecary Bottle. Unembossed.
B - C. Miscellaneous Bottles.

PLATE 5.19: Stemwares. Cut Decoration.

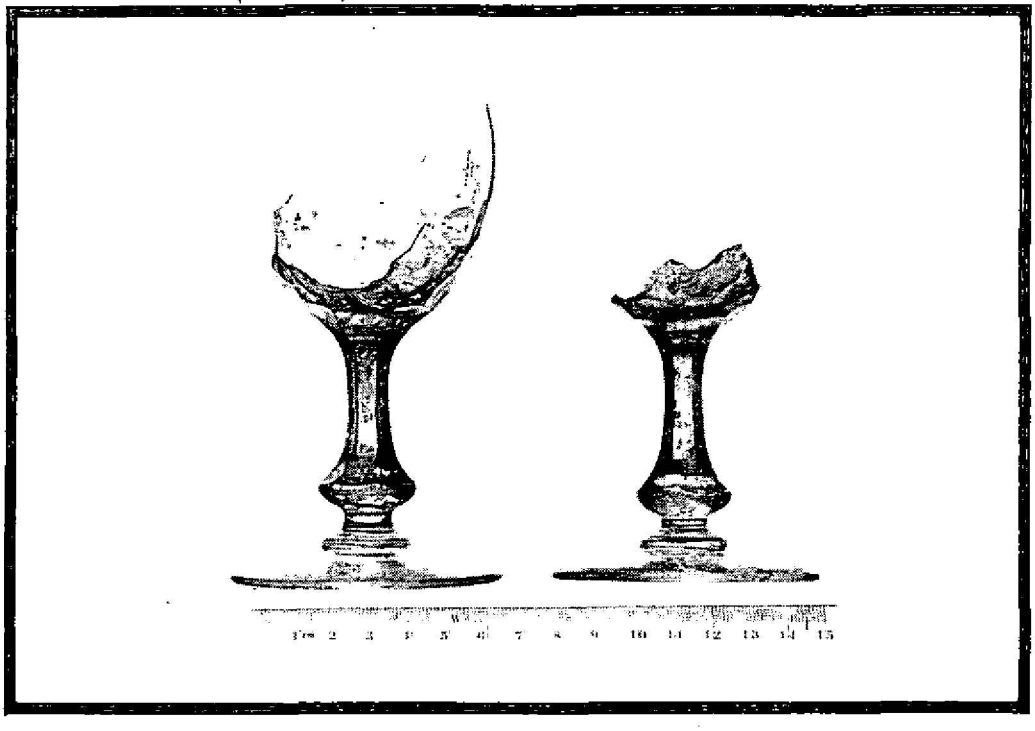
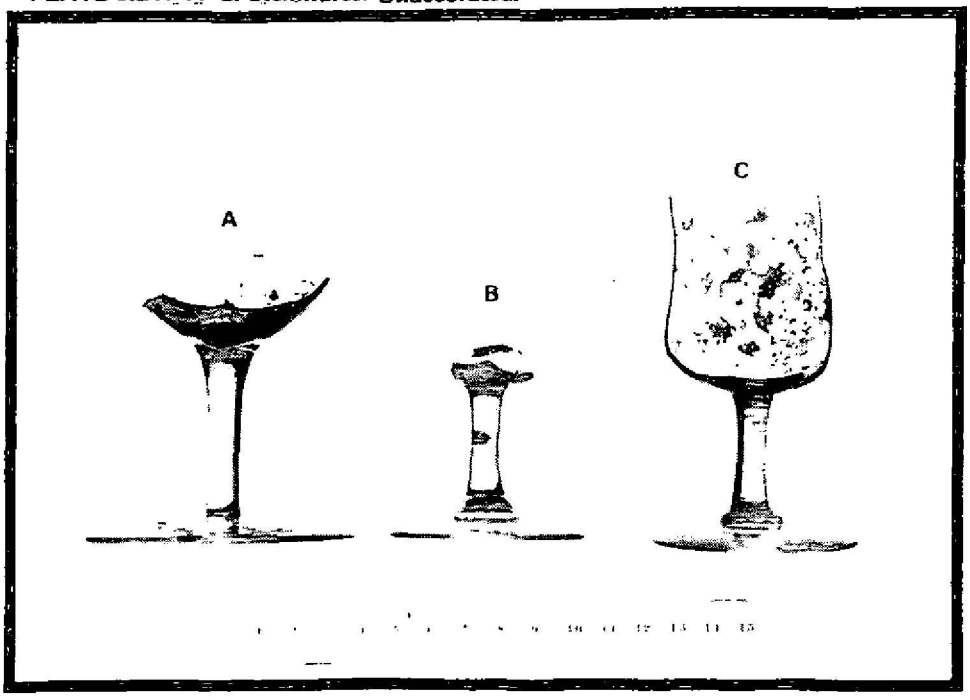


PLATE 5.20: Stemware. Cut Decoration.

PLATE 5.21: A -C. Stemwares. Undecorated.



manufacture, Vessel #61 (Plate 5.21-a) and Vessel #62 are plain stems drawn out into ovoid-shaped bowls with the feet attached directly to the stems. Several other stemware vessels, of both leaded and non-leaded glass, are present in the collection, but they are too fragmentary for complete identifications to be made.

All but one (Vessel #83) of the seven tumblers in the collection are decorated types. The pressed, presumably American-made pieces, generally datable between 1840 and 1880 (Spillman 1982: Plate 42; Spillman 1981:243-252,265) are made of colorless, leaded glass and display simple geometric patterns. Vessel #s 55 (Plate 5.22-a) and 57 are cylindrical, panelled tumblers; nine panels extend half-way up their bodies. Vessel #56 (Plate 5.22-b) is also panelled and cylindrical in shape; eight panels extend almost to the vessel's rim. Conical in shape, Vessel #59 (Plate 5.22-c) exhibits a general faceted pattern. Vessel #58 (Plate 5.23) is a cylindrical tumbler displaying the New England pine-apple motif. The only tumbler in the collection with cut decoration is Vessel #60. Of colorless, leaded glass, it is cylindrical in shape with mitred diamonds cut around the entire body almost to the vessel's rim.

Stratum 19 contained a large deposit of window glass which was subjected to intensive analysis. As a result of this examination several panes were reconstructed. These reconstructed panes were made of crown glass and broad glass, and both architectural and non-architectural windows were present. The glass deposit was separated by color, thickness, and patination. Three colors were present: a dark green, a lightly tinted blue/green, and clear. Thickness variations and patination patterns coincided with the separation by color and facilitated the reconstruction of panes. Two reconstructed panes were dark green, with large air bubbles distributed in a circular pattern, and are considered to be crown glass (Plate 5.24).

Most reconstructed panes were lightly tinted blue/green and were large in size. They had small air bubbles distributed evenly in a straight pattern and are considered to be broad glass (Plate 5.25). The dark green and lightly tinted blue/green panes were heavily patinated on one side. Along the outer margins there was differential patination. This consistent pattern on the panes of these two groups indicates they were architectural windows. The side of a window pane facing outdoors is subject to greater wear, while the edges encased in the frame and the interior side are not. Clear panes were also partially reconstructed and are most likely crown glass based on the presence of air bubbles running diagonally to the long axes (Plate 5.26). These did not show heavy patination on either side. The clarity of the glass, lack of differential patination, and small size of the panes indicates a non-architectural function. Possibly the panes were part of a piece of furniture such as a cabinet.

The items recovered from the upper deposit (Strata 3 to 12) of Feature 5, unlike the lower deposit, are rather small and frag-

PLATE 5.22: A - C. Pressed Tumblers. Panelled and Faceted.

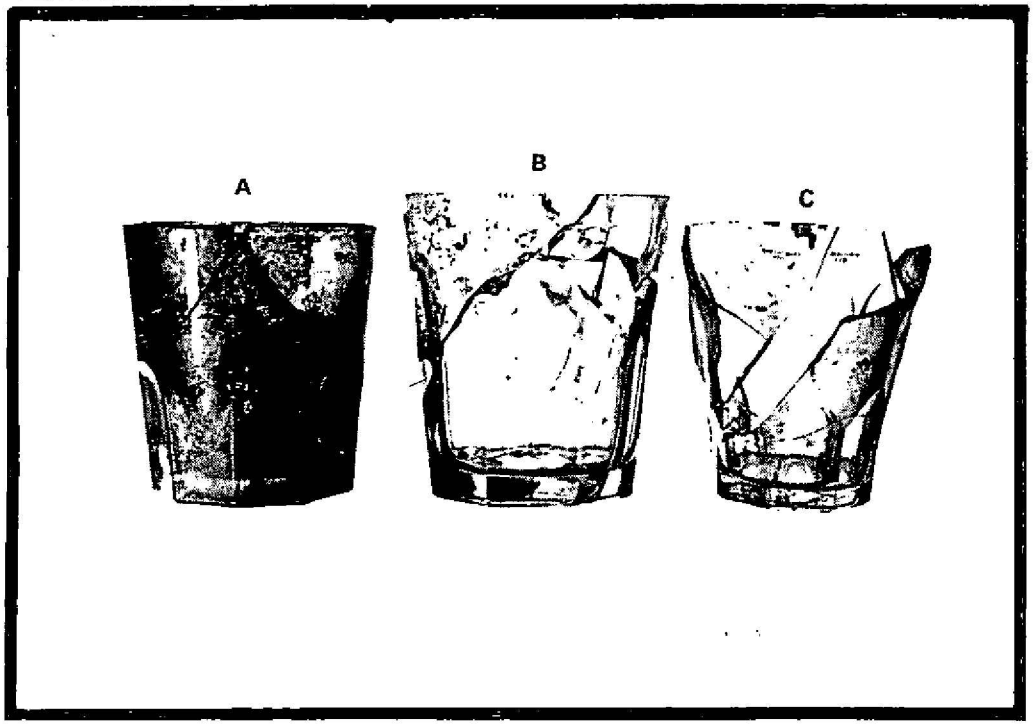
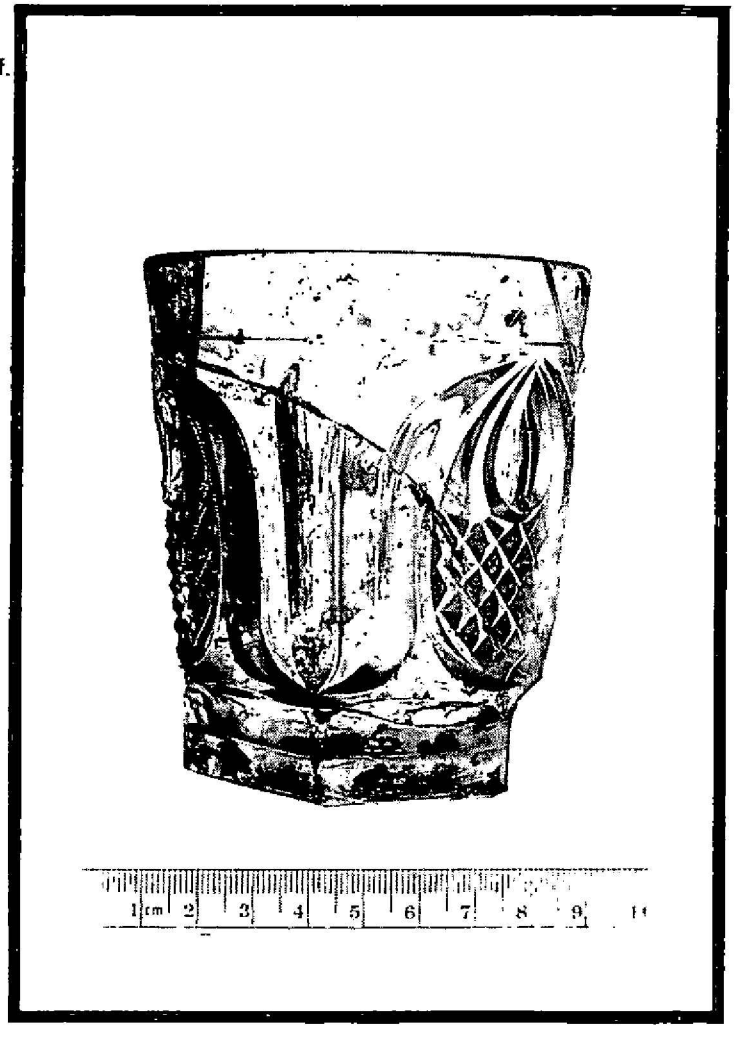


PLATE 5.23:
Pressed Tumbler. "New England Pineapple" Motif.



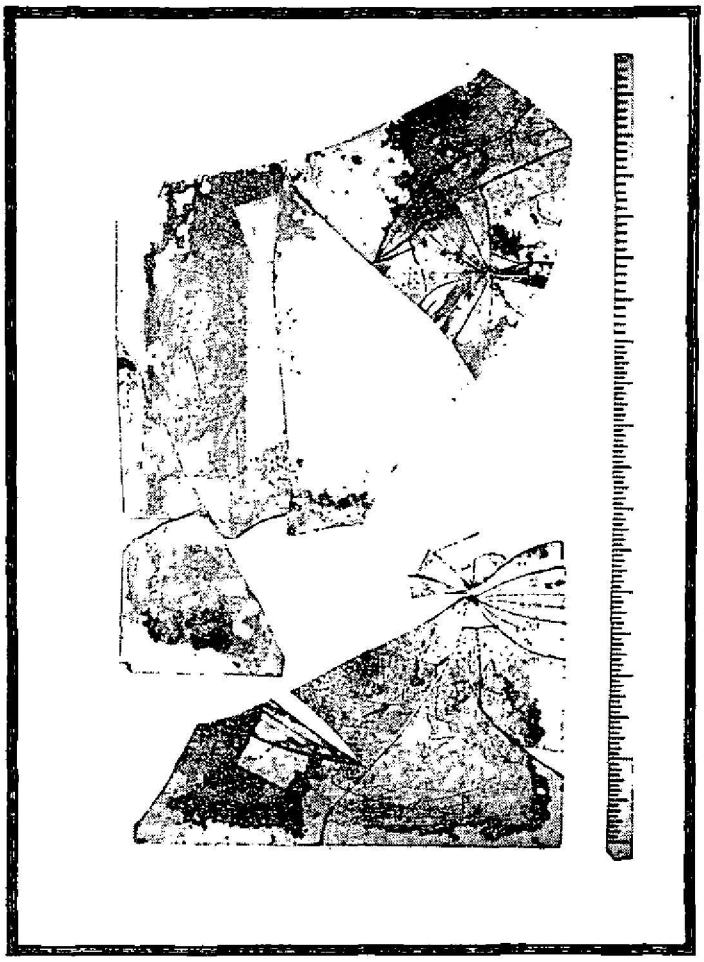


PLATE 5.24:
Crown Glass Window Pane. Note Differential Patination Along Edges. Dark Green, 7 1/4 Inches (18.8cm) X 7 1/16 Inches (18.1cm).

PLATE 5.25: Broad Glass Window Pane. Possibly from a Cabinet, Lightly Tinted Green, 12 Inches (30cm) X 5 7/8 Inches (14.7cm).

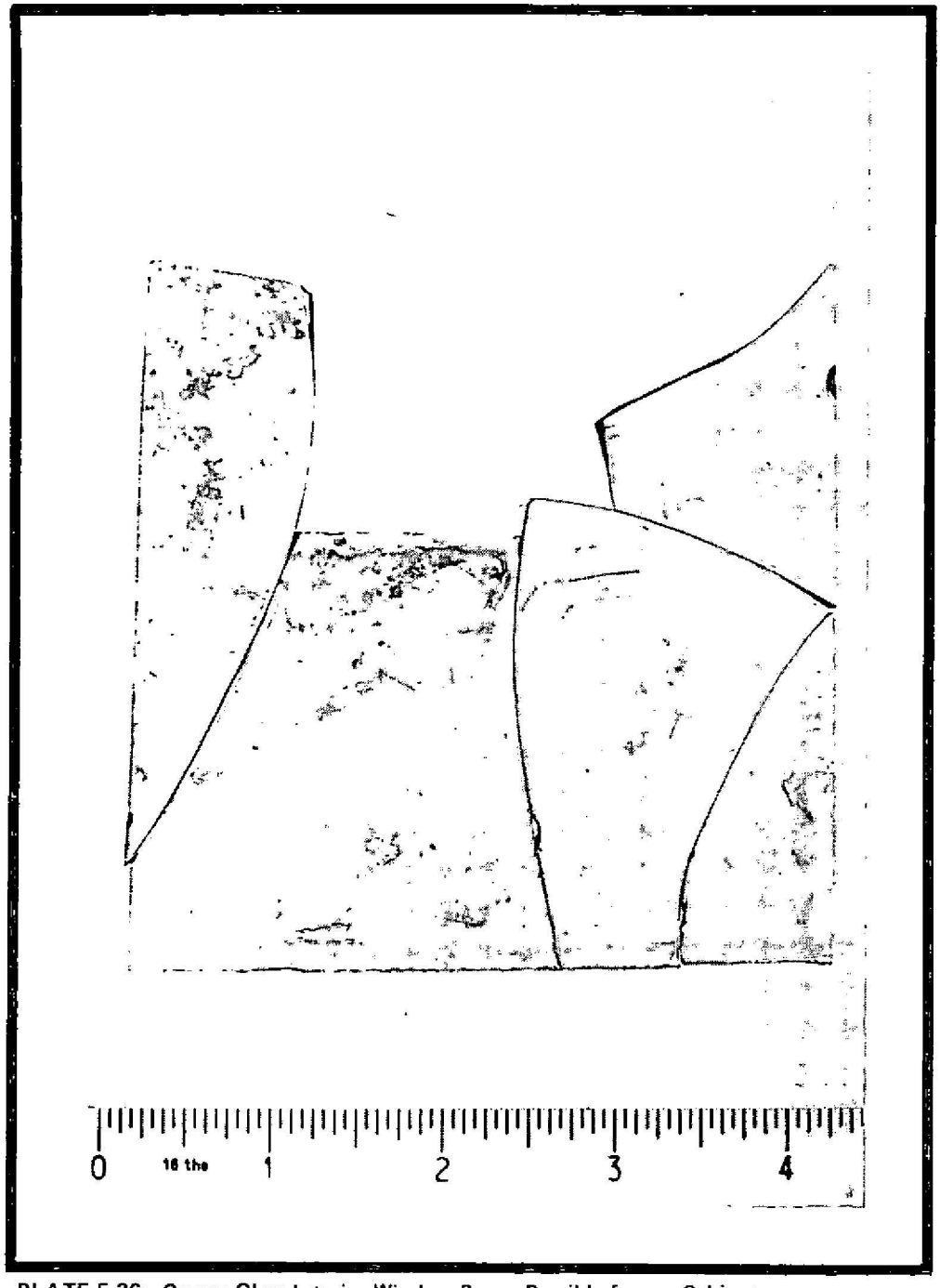


PLATE 5.26: Crown Glass Interior Window Pane. Possibly from a Cabinet. Lightly Tinted Green, 4 1/4 Inches (10.9cm) x 4 Inches (10.2cm).

mentary. In addition, they were discarded in a shorter time span (1898 to 1901).

There were at least nine marmalade/preserve jars in this deposit. Most were unlabeled, but one (Vessel #41) has a partial black transfer printed label that reads ". . . DAL OF MERIT VI . . . ER & S . . . FOR MARMALADE . . . DON, 1862 . . . T BRITAIN" surrounding an oak leaf and acorn wreath. The other jars are identified as marmalade/preserve jars based on their distinctive rim shape, size, and ware type (hard whiteware or ironstone). The unmarked jars probably originally had paper labels and it is possible that at least some of the numerous fruit seeds found in Feature 5 (see floral section) came from purchased - and probably imported - fruit preserves and jams.

Other ceramics in the upper deposit in Feature 5 include flowerpots, tablewares, and teawares. Some of the table and teawares are similar to those in the lower deposit (see discussion above) but most are late nineteenth- to early twentieth-century whitewares or ironstones, probably American made, decorated with overglaze polychrome transfer prints. The one maker's mark on an earthenware ("International Pottery Company" on Vessel #32) is from Trenton, New Jersey and dates post 1885. One vessel, a small after-dinner-sized porcelain coffee cup (Vessel #3) mends between the upper and lower deposits. It is French from Limoges; the mark is dated post 1890, and includes the word "France."

The glass assemblage from the upper strata of the Mouquin Feature 5 deposit is very different from that recovered below. Extremely fragmentary, the only intact vessel is a perfume or toilet bottle embossed "E.D. PINAUD/PARIS" on the body with "E.D. PINAUD" in script on the base. Although most bottle and tableware groupings are represented, the majority of sherds (1,600 out of a total 1,799) are unidentified as to specific function and/or form. The only sherds of note are two fragments of the cut baluster-type stemwares recovered from the lower deposit (see descriptions for Vessel #s 72, 78, 79, and 76 above). Only one mend (Vessel #90) between deposits was noted and this occurred at the depositional unit interface (Strata 13 and 14). The glass TPQ for the upper deposit is 1930 based on the presence of a milk bottle base with a machine-made valve mark in Stratum 3. A more reliable TPQ, however, would probably be 1891, based on a crown cap closure recovered from Stratum 11.

7. Depositional Unit 7

This depositional unit contained deposits that were associated with the site's structural elements (i.e., foundation walls, walkways, etc.) A number of artifacts were recovered from builder's trenches, the clay cistern's (Feature 11) walls, and the stratum lying directly below the brick and cobble walkways. This material was used, in conjunction with architectural information, to help date the construction sequences of the house. The results of the analyses are presented in Section D.

8. Depositional Unit 8

The final depositional unit includes those contexts that have been disturbed by military activities (i.e., construction of barracks, sewer and utility lines, etc.). Material recovered from Depositional Unit 8 was not utilized in addressing the research questions.

D. STRUCTURAL REMAINS OF THE HOUSE

An unexpected characteristic of the VanDeventer-Fountain House Site, not evident from the Phase II study was the site's structural complexity. The testing program documented the fragmentary remains of a foundation measuring approximately 62 feet east-west by 28 feet north-south, and two unattached outbuildings (see Figure 1.5).

Hand-excavation, combined with mechanical stripping and excavation in and around the structures during the data recovery program, indicated the house complex consisted of: a "main" or original structure containing a deep basement; an addition to the main structure; an eastern extension or "east bay," also containing a basement; and a western extension, incorporating Feature 1 (a stone foundation with a cellar). In addition, a brick outbuilding (Feature 2) and several brick and cobble work features (3 and 9) were documented north and west of the main structure (Figure 5.2). The data recovery effort documented five construction episodes for the VanDeventer-Fountain House. The architectural and archaeological evidence suggests the following sequence:

Section	Date Range
1. Original structure, 24 x 28 feet, with a deep basement.	Mid-to late eighteenth century
2. Addition to the original main structure.	1795 to 1827
3. Eastern structure with a deep basement.	Prior to 1795
4. Eastern extension, "east bay."	1827 to 1854
5. Western extension, "west bay."	1849 to 1854

A description of these five episodes is presented below.

1. Original Structure

The original farmhouse appears to have consisted of a 24 x 28 foot structure that contained a deep basement (see Figure 5.2).

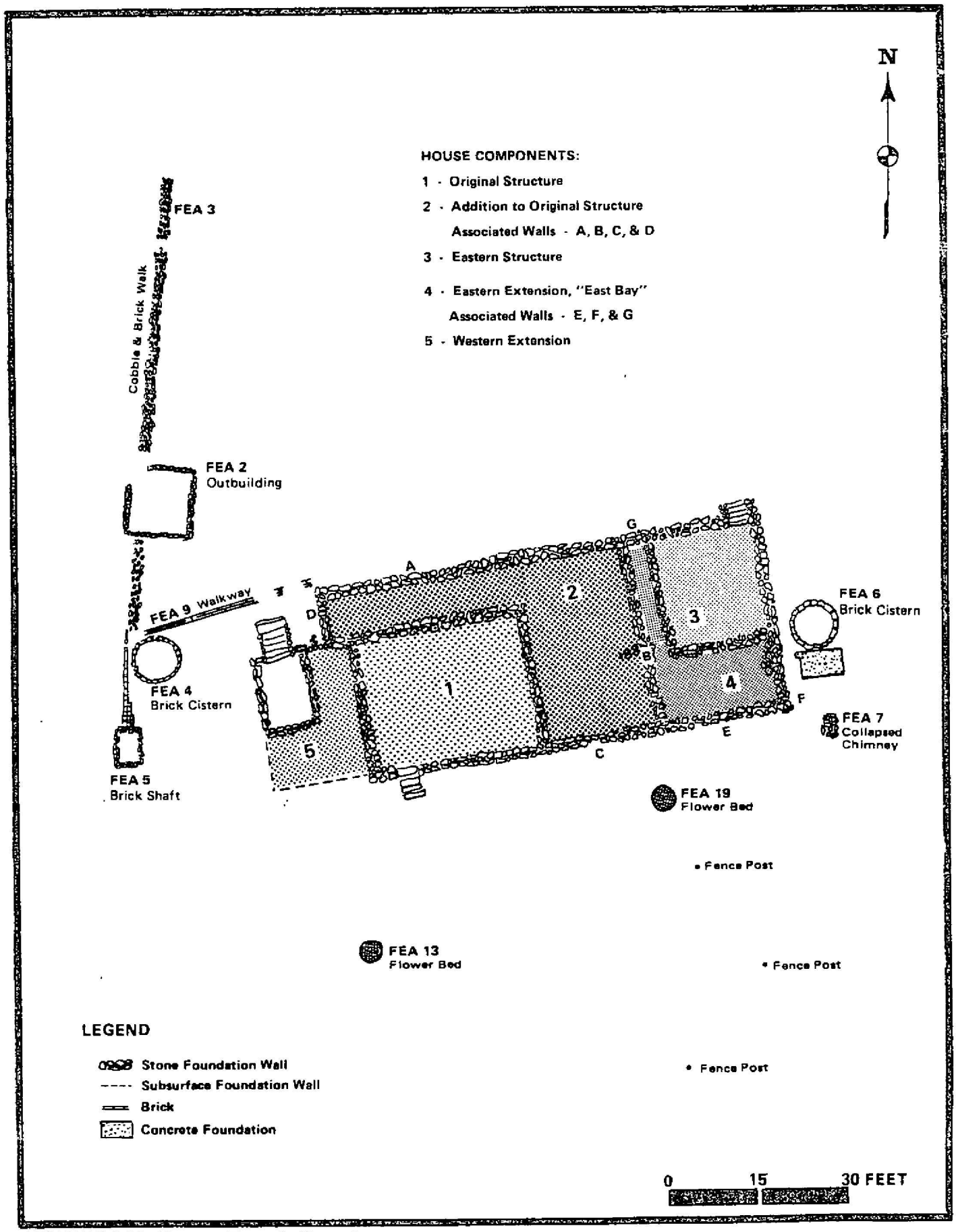


FIGURE 5.2: VanDeventer-Fountain House Core Plan

This is based on the fact that an addition to this structure dates between 1795 and 1827 and correlates to an expansion of the Fountain household, while the eastern structure's addition post-dates 1827. Although Phase II testing (Test Unit 2) confirmed the presence of the cellar, its overall size, depth, and method of construction was not determined until the data recovery phase. Hand stripping and mechanical excavation indicated that the mortared stone walls were approximately two feet wide and dressed in the interior (Plate 5.27). In addition, access was obtained via a stairwell located on the south wall (see Figure 5.2). In Pre-Revolutionary Dutch Houses, Rosalie Bailey states that Dutch style houses, almost without exception, "had cellars which were reached from the outside... and were at the front of the house" (Bailey 1968:28).

Previous results from Phase II testing, combined with mechanical excavation, identified a series of grading deposits overlying the cellar fill. These fills contained varied amounts of demolition debris, covering the remains of a possible burnt wood floor approximately five feet below the surface (Plate 5.28). Diagnostic materials recovered from the demolition debris and burnt floor indicated that the basement was filled in by the Army in 1907/08. Therefore, a date of construction could not be assigned to this section of the house based on the recovered artifactual material. However, historical documentation indicates that the house was built sometime after 1739, when John VanDeventer settled on Staten Island, and before 1786 when his grandaughter Elizabeth VanDeventer Fountain inherited the property.

2. Addition to the Original Structure

It appears that the original house was expanded to include a 35 x 50 foot structure. Unlike the original house, the new addition consisted of a one-course mortared stone foundation that butt-joined against the northwest and southeast corners of the deep basement (see Figure 5.2). This addition represented a single construction episode since its walls consisted of bonded joins. This expansion may have been to provide more living space for the Fountains; the Federal census indicated that the household had grown from 8 individuals in 1790 to 17 by 1800. This growth coincides with the 1795 TPQ date produced by the builder's trenches (Units 9, 13, and 29) for the addition's foundation wall (see Figure 4.1).

3. Eastern Structure

A second structure with a deep basement, measuring 18 x 21 feet, was situated approximately 20 feet east of the original structure (see Figure 5.1). Archaeological and architectural evidence suggests that this structure stood separately from the original house at one time. First, Units 11 and 29 located a buried surface containing ceramic sherds, bottle glass, bone and shell fragments, and nails (Figure 5.3, Table 5.3). This domestic deposit indicates that the area between this structure and the

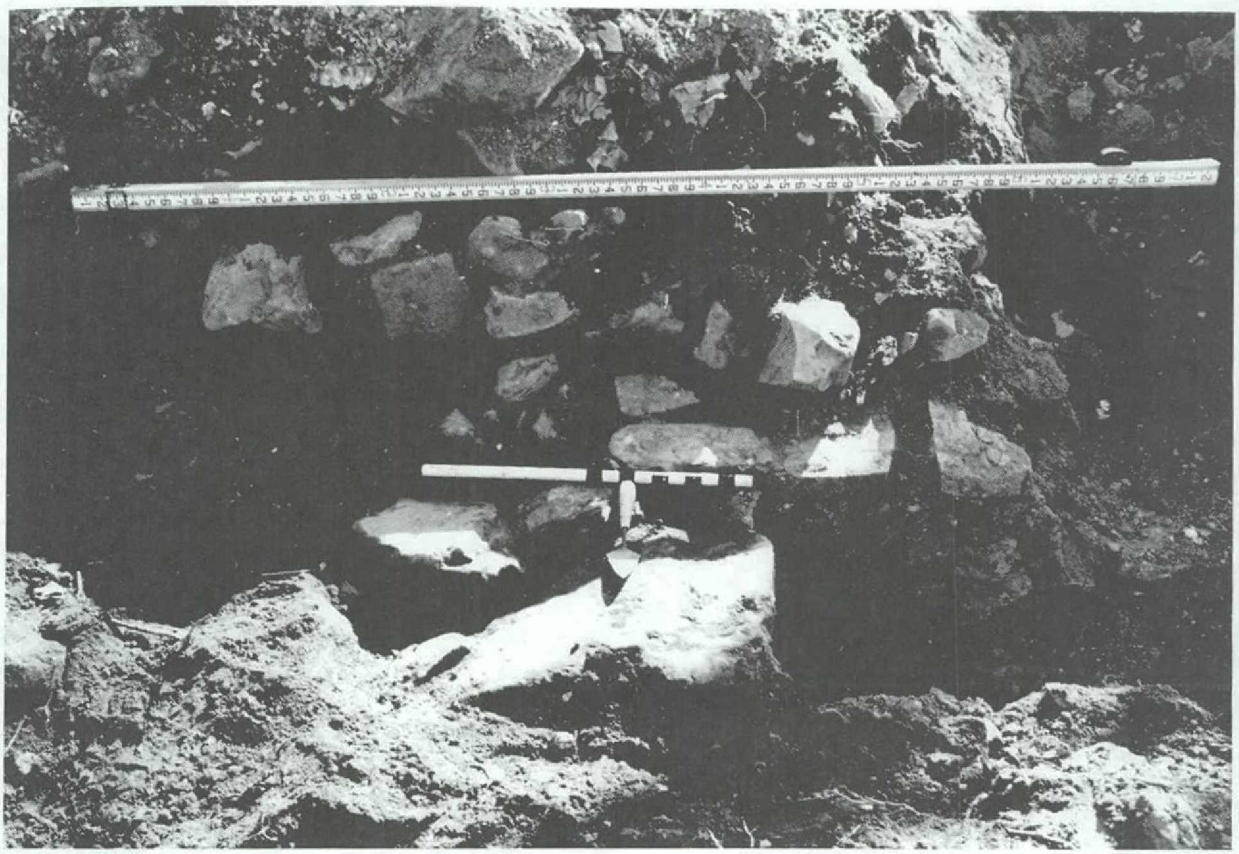


PLATE 5.27: Interior Dressed Stone Walls of Original Structure's Basement. View to South.

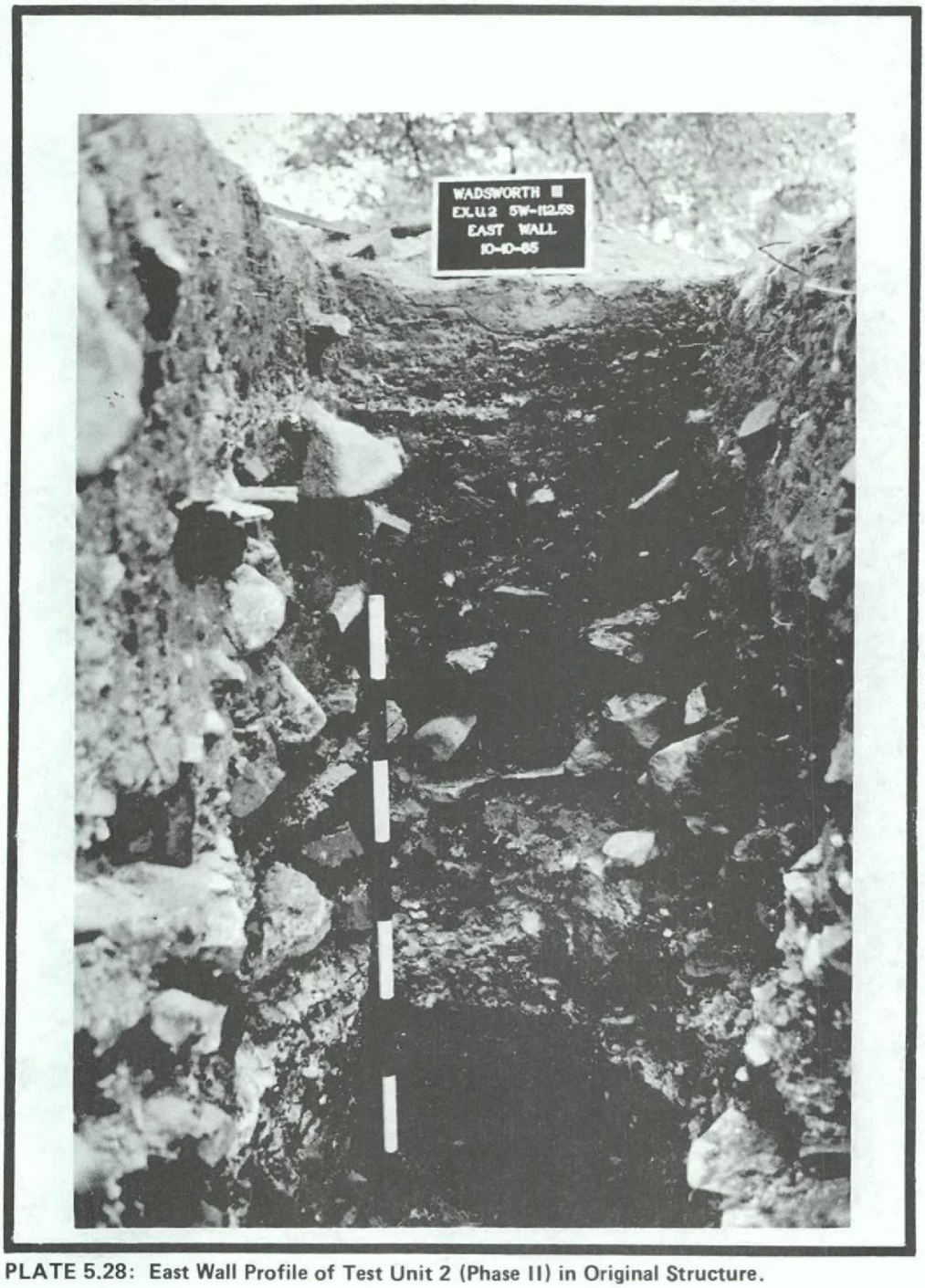
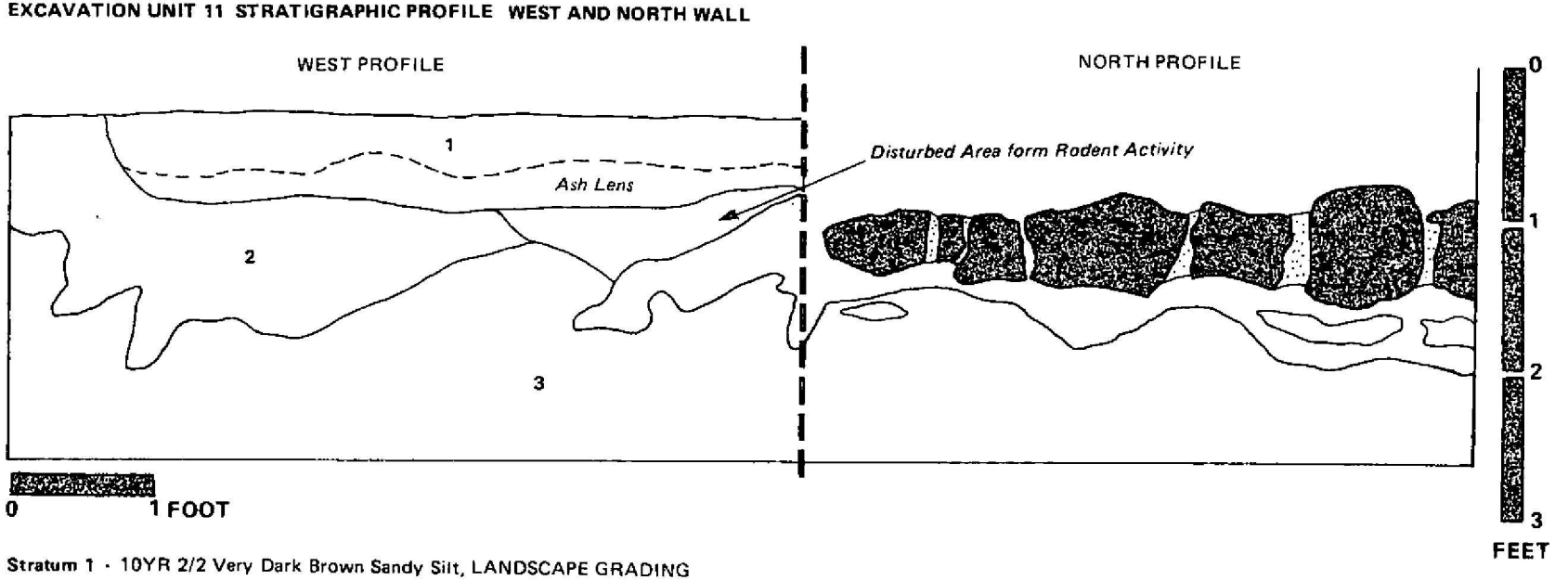


PLATE 5.28: East Wall Profile of Test Unit 2 (Phase II) in Original Structure.



Stratum 1 - 10YR 2/2 Very Dark Brown Sandy Silt, LANDSCAPE GRADING
Stratum 2 - 10YR 3/2 Dark Brown Sandy Silt, BURIED SURFACE
Stratum 3 - 7.5YR 4/4 Brown to Dark Brown Coarse Sand, SUBSOIL

Stone

Mortar

FIGURE 5.3: West and North Stratigraphic Profile, Excavation Unit 11

TABLE 5.3

EXCAVATION UNIT 11 STRATIGRAPHY

STRATUM NUMBER	MUNSELL NUMBER	MUNSELL COLOR	TEXTURE	DESCRIPTION	DEPTH
1	10YR 2/2	Very dark brown	Sandy silt	Grading	0.4/1.0' to 1.03'
2	10YR 3/2	Dark brown	Sandy silt	Buried surface	1.03' to 1.43'
3	7.5YR 4/4	Brown to dark brown	Coarse sand	Subsoil	1.43' to 2.63/2.7'

western structure served as a yard area prior to the expansion of the main structure. Second, the intervening walls between the two structures exhibit different bonding techniques, which suggests different episodes of construction (see Figure 5.2, A thru G). Finally, hand and mechanical excavations of the basement revealed similar construction techniques used in the western structure. Both were constructed of mortared Manhattan schist, dressed on the interior. Although the construction date for the eastern structure is unknown, the similarity to the western structure suggests that they may be contemporaneous. In any event, it predates the original structure's addition date of 1795.

The stratigraphy within the basement was similar to that seen in the western basement. Underlying the grading deposits were several levels of demolition debris that overlaid the remains of a possible wood floor (Figure 5.4, Table 5.4). Artifactual material recovered from the basement fill were almost identical in type and date range to those from the western basement. This indicates that both deposits represent one depositional sequence, i.e., the demolition of the house by the Army in 1907/08. Both the burnt floor and basement walls rested on sterile glacial outwash sands. Analysis of the materials recovered from the basement could not determine this structure's function.

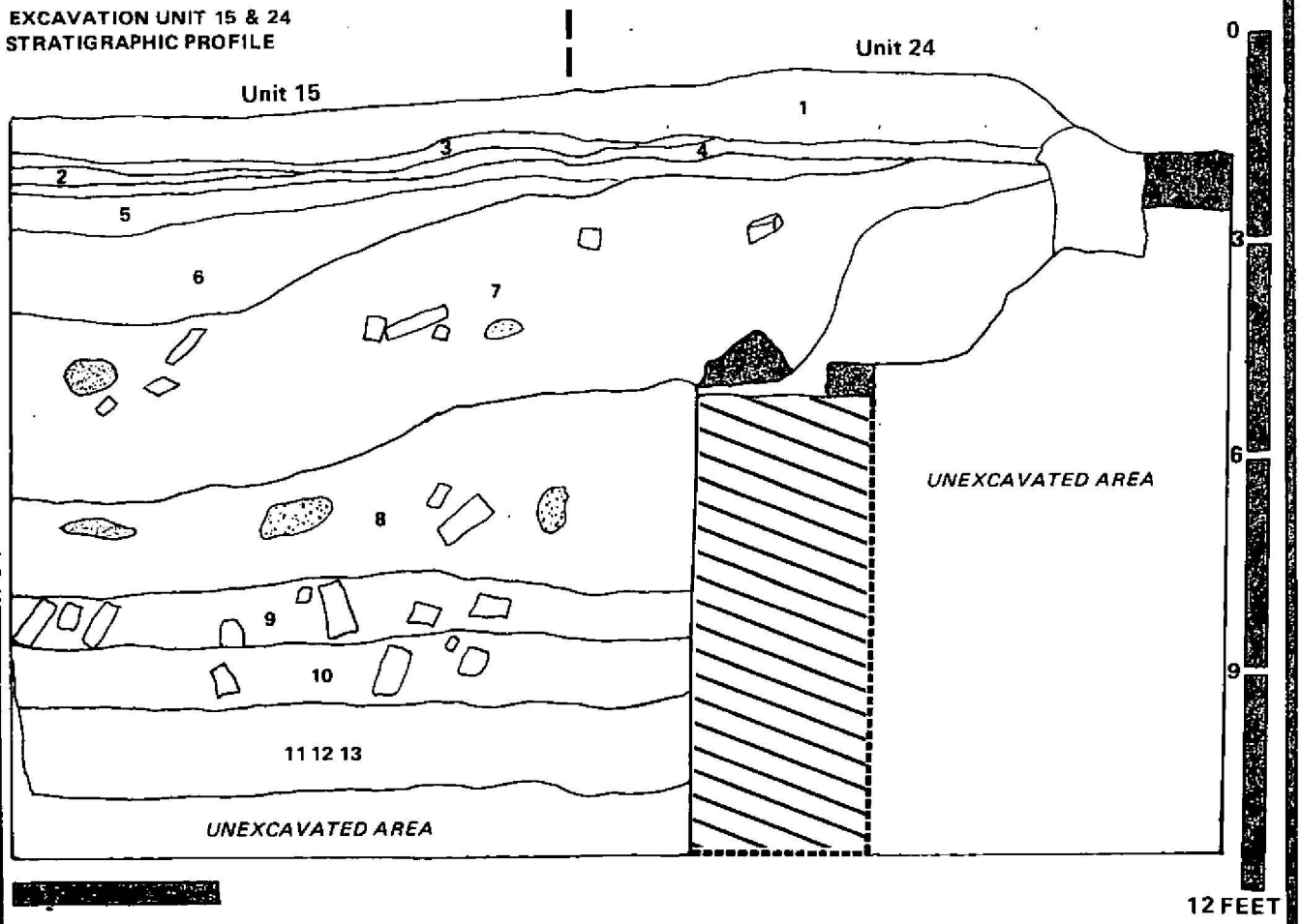
4. Eastern Extension "East Bay"

The eastern structure and it's deep basement was finally incorporated into the main structure with construction of the "east bay" (see Figure 5.1, Walls E, F and G). These walls were butt joined to the basement and main structure's foundation walls, indicating that the last bay was built after these two structures. Figure 5.5 illustrates this quite clearly. The wall labeled "A" represents the northeast corner to the original structures expansion. The section labeled "B" is the northwest corner of the eastern basement's walls, while "C" is the wall used to join the basement to the main house (Plate 5.29). A similar type of bonding was used at the southwest corner of the east bay, connecting it with the southeast corner of the main structure (see Figure 5.2).

Artifactual material recovered from the builder's trench in Test Unit 3 (Phase II study) consisted of ceramic sherds, bottle glass, pipe/stem fragments, bone, shell, and architectural material. Diagnostic artifacts from the assemblage yielded a TPQ of 1827. This date, along with an 1854 bird's eye view of the house (see Figure 3.4), indicates that the east bay was constructed sometime between 1827 and 1854.

5. Western Extension, "West Bay"

Archaeological and architectural evidence indicates that Feature 1, like the eastern structure, was once a separate structure. The wall connecting the feature with the main house was butt joined,



Stratum 1 - 10YR 2/2 Very Dark Brown Sandy Silt, LANDSCAPE GRADING

Stratum 2 - 7.5YR 4/4 and 10YR 3/2 Brown to Dark Brown Silty Sand, LANDSCAPE GRADING

Stratum 3 - 7.5YR 3/4 Dark Brown Silty Clay, LANDSCAPE GRADING

Stratum 4 - 10YR 2/1 Black Silty Sand with Gravel, LANDSCAPE GRADING

Stratum 5 - 10YR 2/2 Very Dark Brown Silty Sand, LANDSCAPE GRADING

Stratum 6 - 10YR 4/2 and 10YR 4/3 Dark Grayish Brown Mottled with Dark Brown Silty Sand, LANDSCAPE GRADING/DEMOLITION DEBRIS

Stratum 7 - 10YR 3/2, 10YR 7/3, 10YR 7/6 and 7.5YR Very Dark Gray Brown Mottled with Very Pale Brown, Yellow and Reddish Yellow Silty Sand, DEMOLITION DEBRIS

Stratum 8 - 10YR 3/4 Dark Yellowish Brown Sandy Silt, DEMOLITION DEBRIS

Stratum 9 - 10YR 2/2 Very Dark Brown Sand with Trace Silt, DEMOLITION DEBRIS

Stratum 10 - 10YR 6/5, 2.5Y 7/4 and 10YR 7/1 Pale Brown Mottled with Light Gray and Pale Yellow Crushed Mortar, DEMOLITION DEBRIS

Stratum 11 - 10YR 4/4 and 7.5YR 3/2 Dark Yellowish Brown Mottled with Dark Brown Sand with Trace Silt, CHARRED FILL

Stratum 12 - 10YR 4/2 Dark Grayish Brown Silty Sand with Coal, CHARRED DEBRIS

Stratum 13 - 10YR 4/3 Brown to Dark Brown Sand with Trace Silt, CHARRED DEBRIS

Stone
Cobble
Brick
Concrete
Mortar

FIGURE 5.4: South Stratigraphic Profile, Excavation Units 15 and 24

TABLE 5.4

EXCAVATION UNIT 15 AND 24 STRATIGRAPHY

STRATUM NUMBER	MUNSELL NUMBER	MUNSELL COLOR	TEXTURE	DESCRIPTION	DEPTH
1	10YR 2/2	Very dark brown	Sandy silt	Grading	0.15/0.40' to 0.5/0.8'
2	7.5YR 4/4	Brown to dark brown	Silty sand	Grading	0.5/0.8' to 0.73/0.85'
3	7.5YR 3/4	Dark brown	Silty clay	Grading	0.66/0.85' to 0.76/1.05'
4	10YR 2/1	Black	Silty sand w/ gravel	Grading	0.76/1.05' to 0.85/1.2'
5	10YR 2/2	Very dark brown	Silty sand	Grading	0.85/1.2' to 1.0/1.5'
6	10YR 4/2, 10YR 4/3	Dark gray-ish brown, mottled w/ dark brown	Silty sand	Grading/ Demolition debris	1.0/1.5' to 1.3/2.18'
7	10YR 3/2, 10YR 7/3, 10YR 7/6, 7.5YR 7/6	Very dark gray brown, mottled w/ very pale brown, yellow and reddish yellow	Silty sand	Demolition debris	1.43/2.18' to 3.25/3.86'
8	10YR 3/4	Dark yellowish brown	Sandy silt	Demolition debris	3.25/3.6' to 4.67/4.4'
9	10YR 2/2	Very dark brown	Sand w/ trace silt	Demolition debris	4.67/4.4' to 5.26/5.33'

TABLE 5.4

EXCAVATION UNIT 15 AND 24 STRATIGRAPHY

(Continued)

STRATUM NUMBER	MUNSELL NUMBER	COLOR	MUNSELL TEXTURE	DESCRIPTION	DEPTH
10	10YR 6/5, 2.5Y 7/4, 10YR 7/1	Pale brown, mottled w/ light gray and pale yellow	Crushed mortar	Demolition debris	5.26/5.33' to 5.6/6.05'
11	10YR 4/4, 7.5YR 3/2	Dark yellowish brown, mottled w/ dark brown	Sand w/ trace silt	Charred fill	5.6/6.05' to 5.56/6.25'
12	10YR 4/2	Dark gray-ish brown	Silty sand w/ coal	Charred debris	5.85/6.05' to 6.23/6.37'
13	10YR 4/3	Brown to dark brown	Sand w/ trace silt	Charred debris	6.23/6.35' to 6.55/6.71'

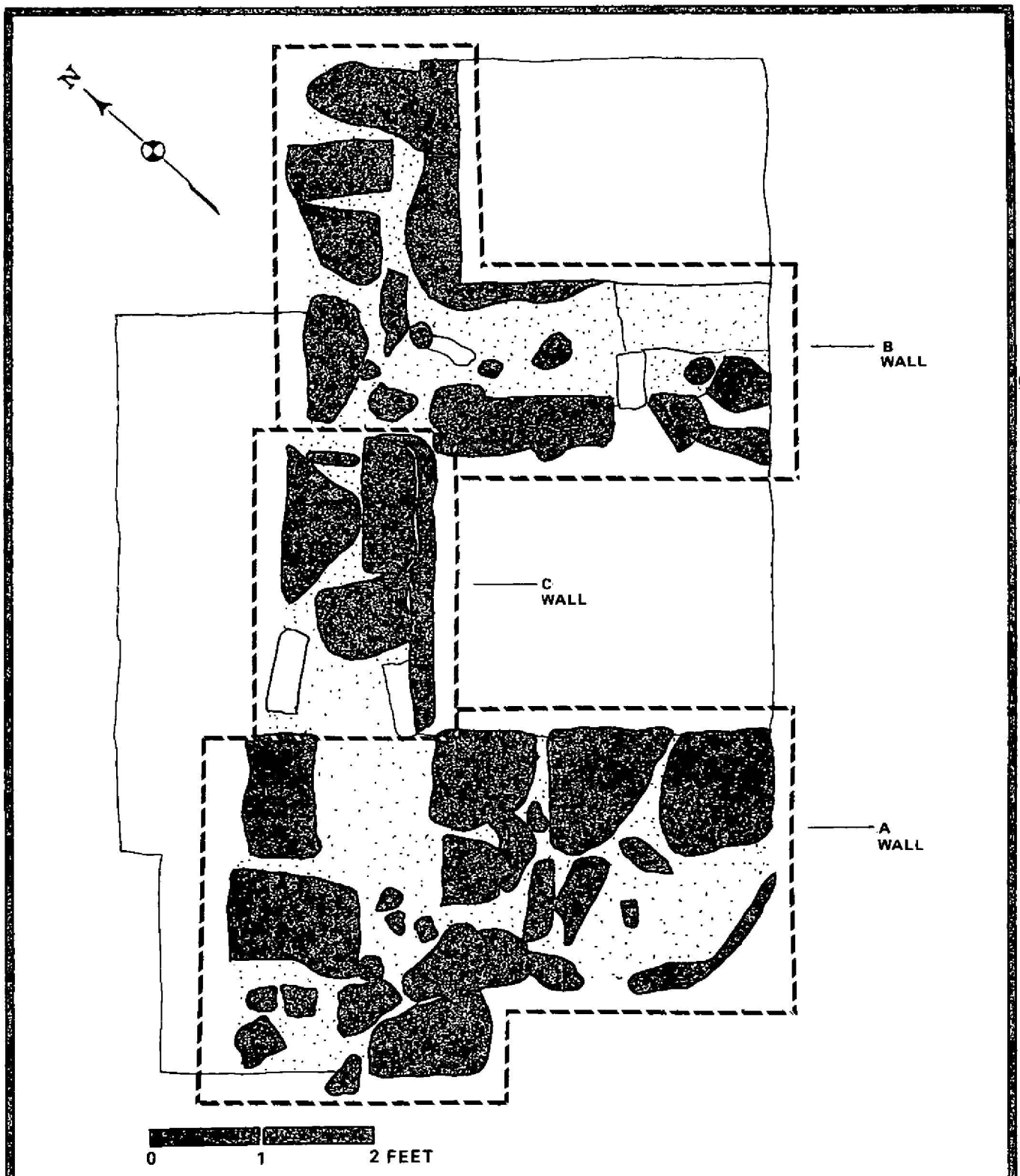


FIGURE 5.5: Plan View Excavation Unit 26

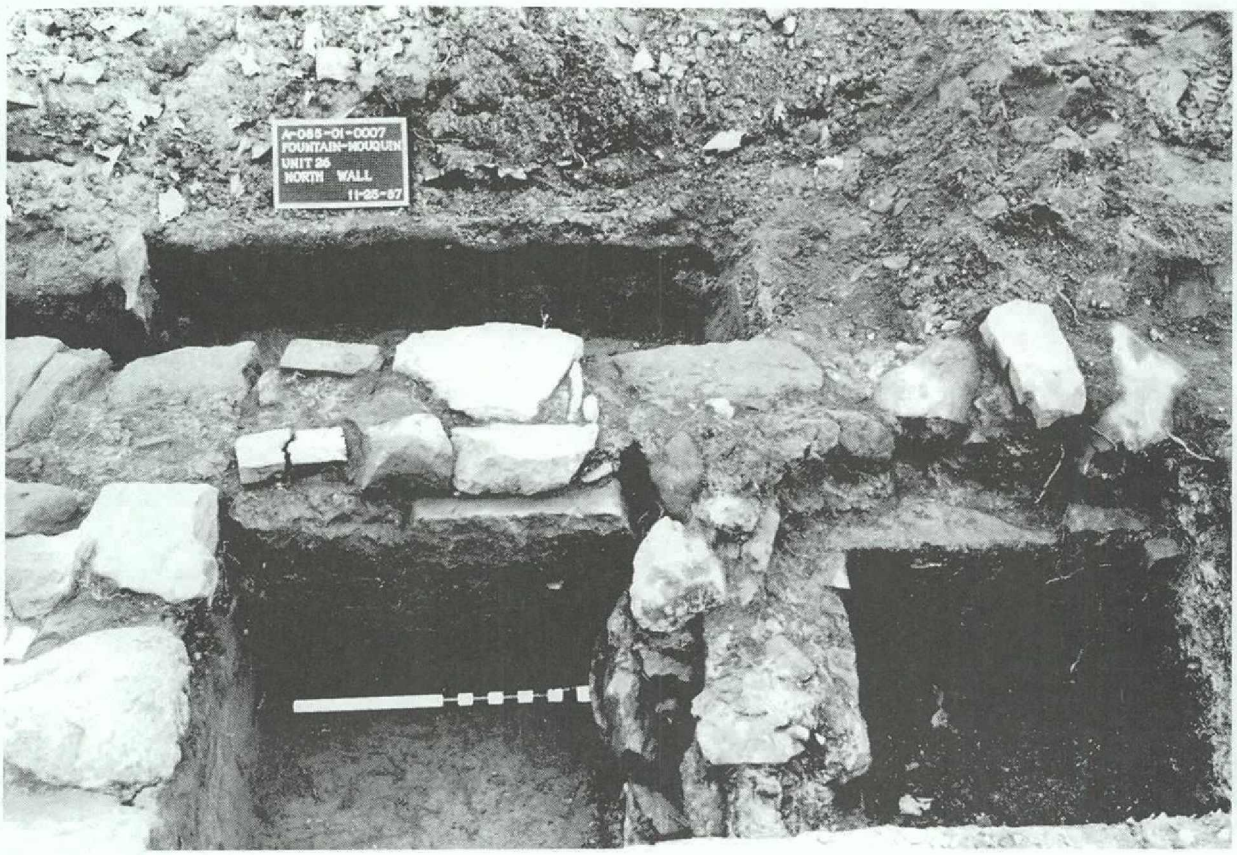


PLATE 5.29: View of Wall Join between Main Structure (left) with East Bay (right). View to North.

and not bonded, with their respective walls (Plate 5.30). In addition, the southwest and southern walls of the west bay were not located during investigations. It is highly likely that these walls were removed by the Army during the house's demolition or by the recent construction of the athletic field to the south. Whatever the reason, the fact that these walls were removed without destroying the walls to Feature 1 and the original house, suggests that they too were butt joined. Therefore, both positive and negative evidence would indicate that Feature 1 was built prior to, and later incorporated into the main house, through construction of the west bay.

The west bay was constructed sometime during the mid-nineteenth century. This is based on the construction date of 1840 to 1849 for Feature 1 (see Chapter IV, Section C.2) and the depiction of the west bay in the 1854 bird's eye view of the house (see Figure 3.4). Therefore, the west bay had to have been constructed before 1854 and after Feature 1.

An interesting aspect of the VanDeventer-Fountain house is its similarity to the foundation floor plans of a farmhouse in western New Jersey from a comparable time period (Figure 5.6). Phase III investigations at the Hamlin Site delineated a structurally complex farmhouse that originally had measured 18 x 18 feet. Over the next fifty years (1795-circa 1845), Thomas Hamlin and his son John expanded the original structure by constructing five additions. The house eventually measured 45 x 75 feet by the time it was abandoned in 1856 (Louis Berger & Associates 1986:VI.19-24). A similar progression occurred at the VanDeventer-Fountain House over a seventy-year period (circa 1786 to 1854). The original house measured 24 x 28 feet and was finally expanded to 35 x 90 feet by constructing four additions.

E. PREHISTORIC REMAINS

A total of 82 prehistoric artifacts was recovered during Phase III investigations of the VanDeventer-Fountain Site. The prehistoric assemblage included the following remains: 6 prehistoric ceramic sherds, 1 point, 2 bifacial tools, 6 bifaces, 5 cores, 2 cobble tools, 2 unifacially retouched or utilized flakes, 53 flakes or debitage, and 5 pieces of fire-cracked rock (FCR). Table 5.5 presents a breakdown of the prehistoric artifact assemblage by unit from the Phase III excavations. A more detailed tally of these remains by provenience is included in Appendix C.

1. Lithic Artifacts

The single diagnostic lithic artifact is a Rossville type. This medium-sized point (4.8 cm long) has a typically tapered stem and rounded base (Plate 5.31). It is made of good quality black chert, similar to Normanskill chert from the Hudson Valley. The

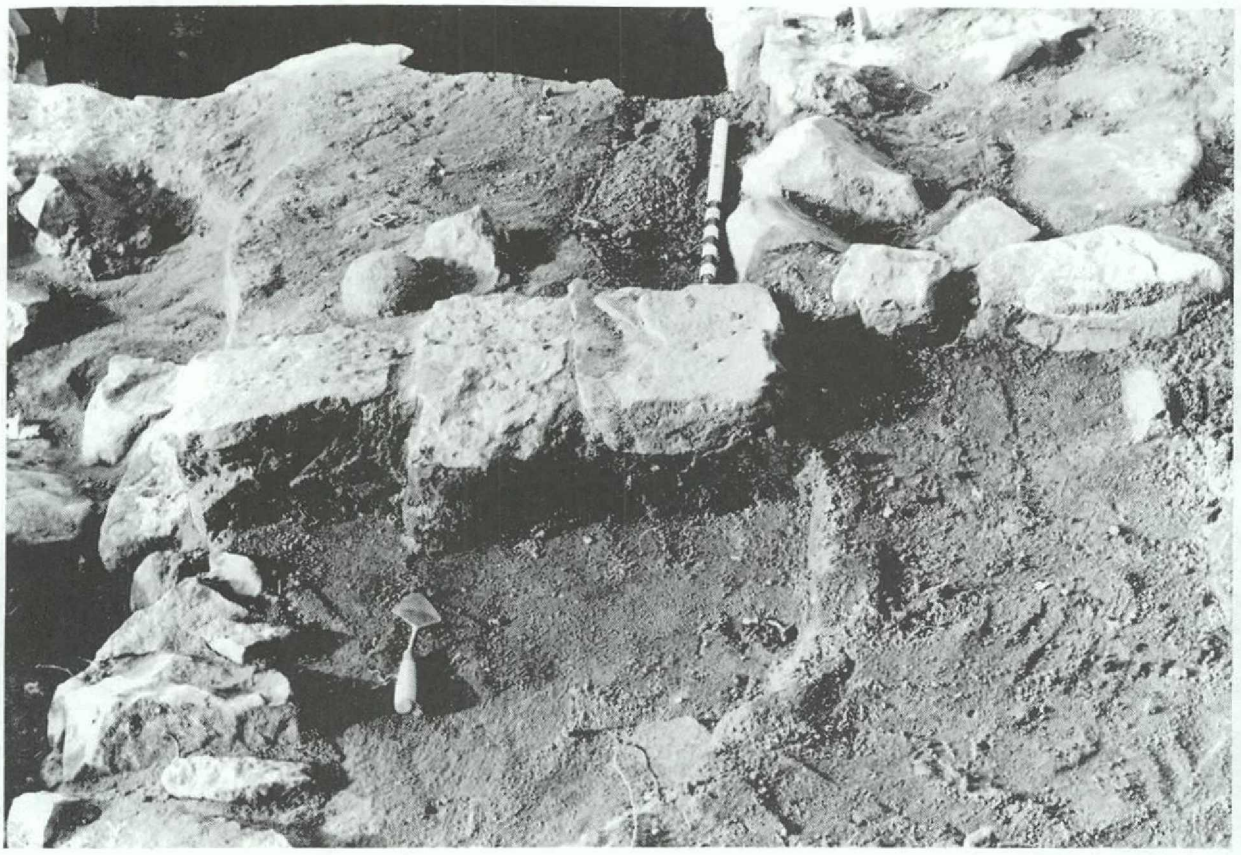


PLATE 5.30: View of Wall Join (center) between Feature 1 (left) and Main Structure (right). View to North.

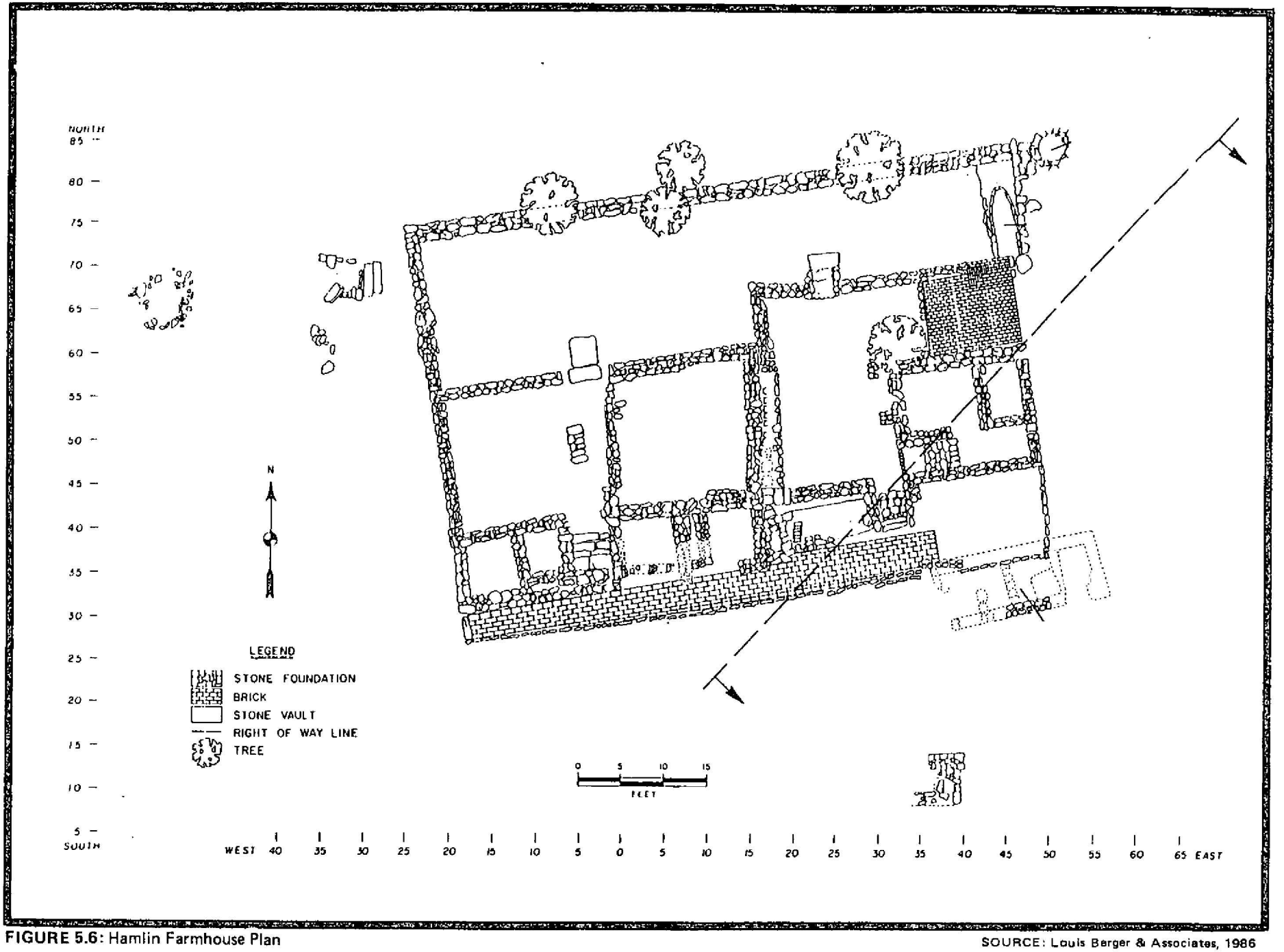


FIGURE 5.6: Hamlin Farmhouse Plan

SOURCE: Louis Berger & Associates, 1986

TABLE 5.5

PREHISTORIC ARTIFACT CATEGORIES BY UNIT

UNIT	COUNT	ARTIFACTS REPRESENTED
6	21	2 sherds, 2 cores, 1 utilized flake, 11 flakes, 5 FCR
7	4	2 sherds, 1 drill, 1 biface
9	4	1 core, 3 flakes
11	16	3 bifaces, 13 flakes
14	2	2 flakes
15	1	1 flake
16	3	1 core, 1 cobble tool, 1 flake
22	14	1 core, 13 flakes
23	15	1 point, 1 point tip, 2 bifaces, 1 cobble tool, 1 utilized flake, 9 flakes
28	2	2 sherds

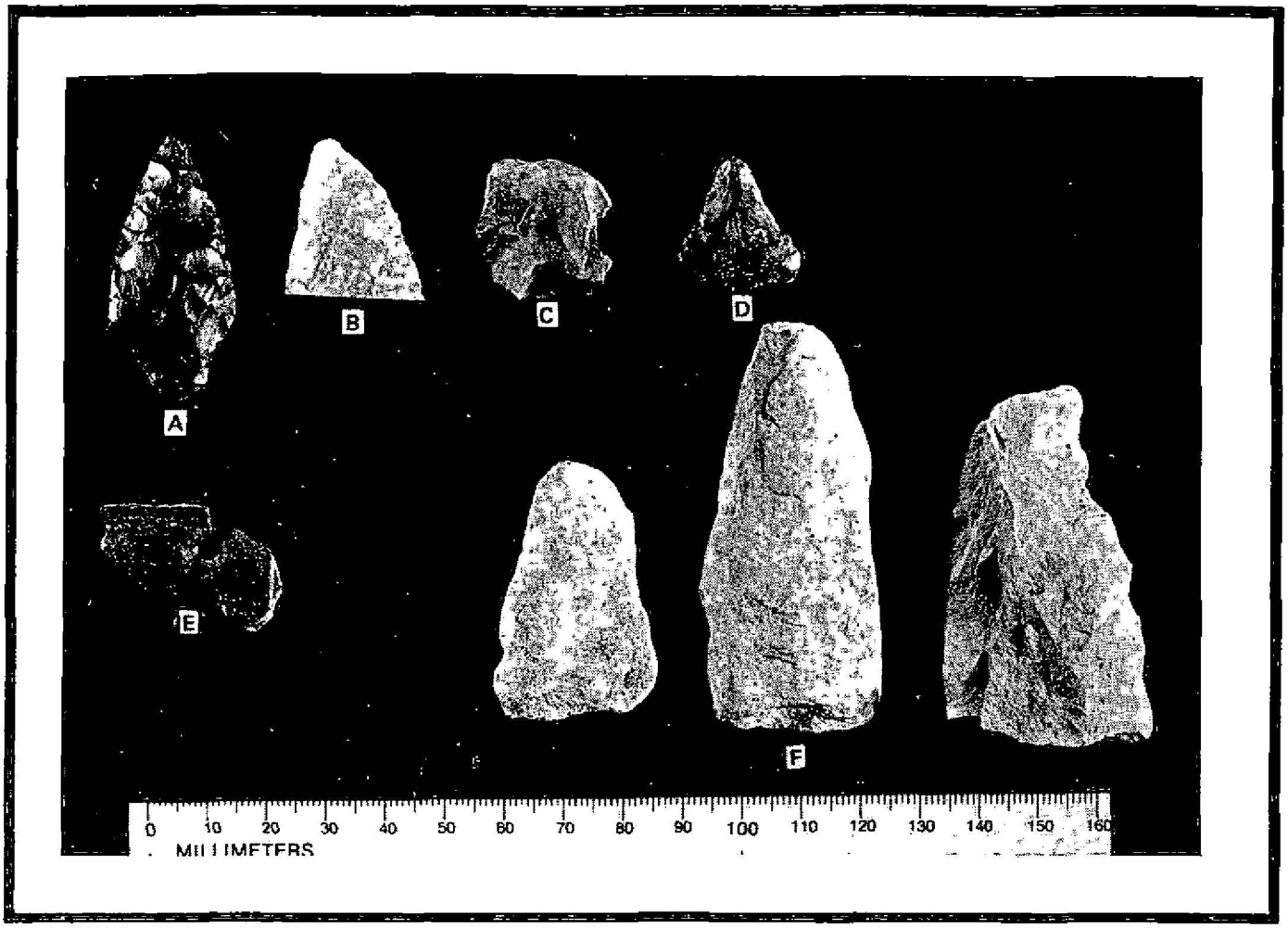


PLATE 5.31. Selected Prehistoric Artifacts.

A. Rossville Point
B. Biface Tip
C. Flake Uniface
D. Biface Drill
E. Bowmans Brook Sherd
F. Argillite Biface/Preforms

Rossville projectile point type is characteristic of Middle Woodland occupation, circa 520 - 100 BC (Kinsey et al. 1972:435-436).

The two other bifacial tools that were recovered during Phase III investigations are the distal end of a drill or perforator, also made of black chert (Plate 5.31), and the tip of a point or knife made of jasper (Plate 5.31).

The six remaining bifaces, all made of argillite, appear to represent stages in the biface reduction/tool manufacturing process. None of these bifaces appear to be "finished" tools, although some may have been used expediently (Plate 5.31). Because argillite deteriorates readily, it was not possible to observe flaking patterns, edge morphology, or possible utilization damage on these artifacts. Several of the argillite bifaces appear to be characteristic of preforms for Fox Creek points (Cresson n.d.). The Fox Creek type is indicative of Middle Woodland and/or early Late Woodland occupation, circa AD 300 - 800 (Kinsey et al. 1972:445; Ritchie and Funk 1973:123; Handsman and McNett 1974; Dent 1979; Stewart 1982).

Two flake tools were identified. Both of these were chert flakes with unifacial retouch. One of these flake tools is shown in Plate 5.31.

One of the two cobble tools from the site is a large quartzite cobble, weighing 0.5 kg, with battering on both ends. This tool may have been used as a hammerstone and/or pecking stone for initial lithic reduction, and/or as a pestle for grinding or pulverizing foods. The other cobble tool, also of quartzite, is somewhat smaller, as well as broken. This tool also retains damage on its ends from utilization.

Among the five cores, four were quartz and one was argillite. The quartz specimens are all relatively small cobble cores, ranging in size from 3.5 cm to 5.3 in greatest dimension. The size of the quartz cores contrasts with the single argillite core, which, at 11.6 cm in length, is considerably larger. The sample of cores from the VanDeventer-Fountain Site represents two different lithic reduction patterns. The quartz specimens exhibit damage typical of a bipolar technique, which is a common method of flaking small cobble materials. The argillite core exhibits bifacial flaking around its edge and a prepared platform on one end, characteristic methods of working tabular pieces of stone.

The sample of 53 unretouched flakes recovered from the VanDeventer-Fountain Site is also informative about patterns of prehistoric lithic technology. Argillite flakes represent the largest group within this category, followed by quartz, jasper and chert (Table 5.6). (The other materials represented are siltstone and gneiss.) The maximum size of the argillite and quartz flakes reflects the size of the core materials being uti-

TABLE 5.6

REPRESENTATION OF LITHIC ARTIFACTS BY RAW MATERIAL

ARTIFACT CATEGORY	RAW MATERIAL TYPES					
	Argillite	Quartz	Jasper	Chert	Quartzite	Other
Flakes	21 (40%)	14 (26%)	9 (17%)	6 (11%)		3 (6%)
Utilized Flakes				2 (100%)		
Cores	1 (20%)	4 (80%)				
Bifacial Tools			1 (33%)	2 (67%)		
Bifaces	6 (100%)					
Cobble Tools					2 (100%)	
TOTALS	28 (39%)	18 (25%)	10 (14%)	10 (14%)	2 (3%)	3 (4%)

lized. The largest argillite flake is 5.6 cm long, compared with the largest quartz flake, which is 4.1 cm long.

The size of flakes is also indicative of lithic tool production and maintenance activities. The larger flakes within the sample represent initial lithic reduction; some of the smaller flakes represent tool trimming and resharpening stages. The mean lengths of argillite and quartz flakes are 2.6 cm and 2.4 cm, respectively. This is considerably larger than the mean lengths of jasper and chert flakes, which are 1.6 cm and 1.7 cm. This pattern exhibits a basic contrast between primary reduction of argillite and quartz at this site, versus the finishing and maintenance/resharpening of possibly curated tools. The presence of cobble cortex on some flakes is also indicative of primary reduction activities. Six, or 43 percent, of the quartz flakes retain cortex, compared with two, or 22 percent, of the jasper flakes and none of the chert flakes. (Primary flakes from argillite cores would not exhibit cortex because of the origin of this material in tabular rather than cobble form.)

Table 5.6 presents a breakdown of lithic artifacts by raw material. A comparison of the raw materials represented by each lithic artifact category demonstrates some interesting patterns. Although quartz dominates the assemblage of cores and is prevalent among the sample of flakes, no quartz tools were located at the site. Although chert accounts for only 11 percent of the debitage, both unifacially retouched flakes and two of the three bifacial tools are made of chert. This pattern is consistent with patterns of selection of high-quality cryptocrystalline materials for making chipped stone tools. In contrast, quartzite cobbles were selected as percussive implements, but not for chipped stone tools, because this material is less suitable for flaking than chert, jasper, argillite, and quartz.

While quartz was widely available as beach cobbles along the shores of Staten Island, there are no sources of argillite on the island. The intensive exploitation of argillite for lithic tools found at the VanDeventer-Fountain Site may indicate a link between the prehistoric occupation of eastern Staten Island and the Upper Delaware Valley (Rutsch 1968, 1970).

2. Ceramic Artifacts

The prehistoric ceramic sherds are very small, which makes it difficult to classify them according to type or to determine vessel forms. Among the six sherds, the ceramic paste of one specimen is tempered with shell, one has crushed argillite or siltstone temper, and the remaining four have grit temper.

The two grit-tempered sherds found in Unit 28 join to form an old repair hole (see Plate 5.31). The vessel represented by these sherds was decorated with incised lines. The type of temper and decora-tion represented by these two sherds is consistent with the Bowmans Brook type, named for the type site on the

northwestern shore of Staten Island (Skinner 1909:5-9; Cross 1956; Staats 1974; Ritchie 1980:268-270). These ceramic artifacts represent occupation during the late Middle Woodland or Late Woodland, after circa AD 700.

Argillite and shell tempers are characteristic of ceramic types from the Middle Atlantic region that are dated to the Middle Woodland to early Late Woodland periods, circa AD 200-800 (Stewart 1985). The sherd with argillite temper is a portion of a vessel rim that exhibits cord marking on the exterior and cord-wrapped stick impressions on the lip.

3. Spatial Distribution and Context of Prehistoric Remains

Consistent with the findings from the Phase II investigations, the majority of prehistoric artifacts were recovered from excavation units situated south of the house site, particularly Units 6, 22, and 23. The only test within the house to yield a quantity of prehistoric artifacts was Unit 11.

The context of the prehistoric artifacts recovered from the VanDeventer-Fountain Site has been affected by various post-depositional processes, including natural soil movement, animal burrows, house building, landscaping, demolition, grading, and modern military construction activities. Nevertheless, some discrete prehistoric activity areas have been preserved.

Several lithic workshop areas are represented by high proportions of particular lithic materials. For example, the lithic assemblage recovered from Unit 22 included a predominance of quartz, which accounted for 11 of the 13 flakes and the single core from this context. In contrast, the remains from Unit 11 were almost entirely of argillite, including three bifaces and 12 of the 13 flakes from this unit. The only artifact that was not of argillite was a small chert flake. Unit 6 produced eight of the nine jasper flakes recovered during Phase III investigations. These jasper flakes represent 75 percent of the debitage from this unit.

The proportion of tools to flakes within each unit is also indicative of activity differentiation. For example, only 60 percent of the prehistoric artifacts from Unit 23 were debitage, compared with 81 and 93 percent of the artifacts from Units 11 and 22, respectively. Unit 23 had a relatively high proportion of tools, including the Rossville point, the broken jasper bifacial tool, and one of the two unifacial flake tools.

A possible feature, consisting of five fragments of fire-cracked rock with a total weight of 387 g, was located within Unit 6. These five sandstone pieces, which fit together, show evidence of heating. The association of these fire-cracked rocks with prehistoric artifacts indicates that they probably represent a disturbed hearth feature.

VI. ANALYSIS OF HOUSEHOLD DIET

A. INTRODUCTION

As previously discussed, the artifact assemblage from the majority of deposits associated with a particular household was small and fragmentary in nature. This was due to the types of refuse disposal patterns (i.e., horizontal yard deposits), movement and trampling of artifactual material by farm animals and continuous residential activities, and military disturbance. However, faunal and floral specimens recovered through excavation and flotation from Feature 5, a brick shaft, permitted a detailed analysis of the Mouquin household. Feature 5 has a known historical context and is associated with the occupation of Henri Mouquin. This feature was separated into an upper and lower deposit.

Flotation samples were taken from each stratum and level of Feature 5. The samples were floated in order to separate the light fractions from the heavy fractions. The light fractions were analyzed by Cheryl A. Holt, Analytical Services for Archaeologists. The heavy fractions were analyzed at LBA's East Orange Laboratory. The light fractions contained floral materials only, while the heavy fractions contained both floral and faunal materials. The results of both analyses are presented in Tables 6.1 and 6.2. Floral and faunal materials received the Standard Stage I level of analysis, using the coding systems for floral and faunal created by LBA Cultural Resource Group (see Chapter V. Sections B6 and 7). These systems allow for identification of species and element, and recordation of element modifications. All floral and faunal materials were counted.

It was anticipated that the floral material might contribute information concerning diet. The faunal material was examined to enhance information already obtained during the Stage II analysis of the faunal remains from Feature 5 (see Section C).

B. FLORAL

Floral materials recovered consisted primarily of seeds and pits from a variety of edible and inedible plants. All of the plants were locally available. While inedible plants may be the result of invasive activity, they may also be present as a result of gardening activities, such as weeding. An example is the tansy plant, inedible but commonly placed on window sills in the nineteenth century to ward off insects. Edible plants included raspberry, grape, nightshade, cherry, strawberry, and blueberry. Raspberry and grape were by far the most common. Raspberry seeds were found in all levels. It has been suggested that the high frequency of raspberry seeds is the result of plant invasion into a cleared area. However, during the nineteenth century it was

TABLE 6.1

FEATURE 5 - FLOTATION SUMMARY

STRATA 3 TO 12

Floral Species	Count
Raspberry	12,550
Strawberry	11
Grape	200
Blueberry	4
Cherry	1
Nightshade	18
Goosefoot	15
Clover	21
Amaranth	3
Purslane	22
Sea Purslane	2
Goosegrass	12
Kentucky Blue	3
Punctatum	2
Smartweed - Pennsylvanic	1
Stinkgrass	10
Total	12,875

Faunal Species	Count
Unidentified Bird - Unspecified	40
Unidentified Fish	5
Unidentified Bone	20
Pelec - Hard Shell Clam	1
Total	66

TABLE 6.2

FEATURE 5 - FLOTATION SUMMARY

STRATA 13 TO 19

Floral Species	Count
Raspberry	43,825
Strawberry	9
Grape	172
Blueberry	1
Ground Cherry	1
Nightshade	114
Goosefoot	2
Clover	48
Amaranth	2
Buttercup	1
Oxalis	2
Purslane	15
Goosegrass	45
Kentucky Blue	4
Beauty Berry	4
Sudan Grass	2
Dicot - Unidentified	11
Total	44,258

Faunal Species	Count
Domestic Mammal - Unspecified	1
Rodent - Small	49
Unidentified Mammal - Small	9
Unidentified Mammal - Unspecified Other	22
Chicken	1
Wild bird	13
Bird - Small	4
Unidentified Bird - Unspecified	154
Unidentified Bird/Rodent	6
Salt Fish - Cod	1
Salt Fish - Sheepshead	1
Unidentified Fish	140
Unidentified Bone	247
Pelec - Hard Shell Clam	1
Total	649

common for people to make wines, jellies, and vinegar from fruits such as grapes and raspberries.

The floral assemblage contained many identifiable species, both edible and inedible, which were possibly exploited for consumption and other purposes. Many inedible species were utilized during the nineteenth century for reasons other than consumption such as medicinal. Although it is not known at this time whether any of the inedible species present served some medicinal or other purpose it should not be ruled out as a possibility.

C. FAUNAL

Analysis of faunal material from Feature 5 was conducted by Cheryl A. Holt, Analytical Services for Archaeologists:

The faunal materials recovered from flotation included mammal, bird, and fish. In addition to bone, fish scales were recovered and subjected to microscopic examination. In general, the fragmentary nature of the bone did not allow for identification of species or elements, with a few exceptions. The breakdown of Feature 5 into two depositional units allows for a limited comparison of recovered materials. The lower deposit differed from the upper deposit in having a greater diversity of species as well as a greater quantity of bone (see Table 6.2). While it was only possible to identify species for fish, general identifications about mammal and bird were made. Within the Mammal class, rodent heavily predominated. The size of the bird vertebrae suggest a small wild species about the size of a sparrow. Fish species included cod, croaker, and sheepshead. The identification of sheepshead was based on the presence of fish scales. This is interesting because no bone elements from the bulk of the faunal or from the flotation were identified as being sheepshead, with the exception of the fish scales.

The macrofaunal remains provided a unique opportunity to enhance understanding of the lifestyle of the occupants during the late nineteenth century. It was hypothesized that the faunal material from Feature 5 represented a temporal period in which the house was occupied as a suburban villa. This provided an opportunity to understand the configuration of a faunal assemblage associated with a wealthy and colorful figure in New York City's restaurant life.

It was interesting to examine dietary debris derived from a family noted for providing quality cuisine on a commercial basis. This faunal analysis provided a unique opportunity to study the Mouquin family's personal dietary consumption. Indeed the patterning of faunal elements was unique and insightful as to the lifestyle as well as the occupation of the inhabitants. The faunal data did not conform to patterning expected for a rural economy, nor did the data conform to typical market purchase pat-

terning often manifested in urban settings. The faunal data also did not conform to patterning typical of wealthy consumers. The uniqueness of the patterning was reflected in what appeared to be commercial cuts of meat being utilized in a domestic setting.

1. Methodology

Bones and bone fragments were identified anatomically and to species with the aid of a comparative faunal collection and reference materials (Schmid 1972; Chaplin 1971; Cornwall 1956; Olsen 1964, 1968, 1979; Ryder 1969; Morris 1975; Gilbert 1973). Each bone and bone fragment was counted, weighed to the nearest gram, described by taxon, element fragmentation, segment or portion, and side. Bone fragments which cross-mended or articulating bones which fit together were noted. The presence or absence of epiphyseal fusion of long and short bones was noted. Bone modification by burning was noted and whether the specimen was charred to a black or white condition. Specimens that had been gnawed by rodents/dogs were also noted. Bone modification by butchering or breakage was described and illustrated. Complete or partially complete bones were measured according to von den Driesch (1976). The following abbreviations are used: lgth- greatest length and wdth-greatest breadth. Whole bones were noted. Some general length measurements were recorded for rib, longbone, and some flat bone fragments. Measurements were recorded in millimeters or centimeters.

The recovered bone comprised three levels of identifiability: highly diagnostic, partially diagnostic, and non-diagnostic. Highly diagnostic bone was identified to genus and/or species and to specific anatomical placement, including side. Partially diagnostic bone refers to bones that could be assigned a class size (e.g., small, medium, and large mammal) and specific anatomical placement, or to bones which are identifiable to general anatomical (vertebrae, skull, longbone) placement. Specimens listed as non-diagnostic are merely fragments from undetermined skeletal elements. Remains listed as longbone fragments refer to the particular structure of limb bones, and how they are differentiated from the structure of the skull, axial skeleton and girdles (Cornwall 1956).

In cases where the body part could be identified but the species could not; small, medium, and large mammal determinations were made by a process of measurement and elimination. The fragments labeled as large are probably cow. The fragments labeled as medium are probably pig. The class size medium/large has lost meaning since this category could encompass several undifferentiated species. Medium/large bones are described but are not discussed further in the report.

Species frequencies and the relative frequency of meat types in the diet was based on four methods: the total number of fragments for each species; the relative percentages; the minimum number of

butchering units (Lyman 1987); and the total bone weight for each species represented. No single analytical technique is sufficient to compensate for all the variables affecting a faunal assemblage. All species are underrepresented to some degree in any faunal analysis because of numerous preservational and depositional variables. It is more likely that what is derived from analysis is a proportional relationship, which suggests relative importance placed on various species and the role each played in dietary composition.

The ages of pig, deer, sheep, and cattle were determined by analysis of fused elements and tooth eruption (Silver 1963; Schmid 1972; Gilbert 1973).

A total of 2,020 faunal specimens with a total gram weight of 4347.6 kilos were examined and analyzed from Feature 5. Table 6.3 gives the frequency distribution of the faunal elements for the feature as a whole and reports the gross number of faunal fragments as well as the adjusted totals which reflects cross mending and matching fragments from the same bone. For example, 24 pig skull fragments were identified in Stratum 19, level 1 and 2 pig skull fragments were identified in level 2 of the same stratum. All of the skull fragments comprise a single skull and the adjusted totals reflect cross mends of this kind. The adjusted figures will be used for analysis. A percentage is calculated based on the adjusted TNF for each recovered species. Eggshell was subtracted from the total number of fragments (TNF) when calculating the percentage of each species as represented by TNF. Eggshell fragments were excluded from this computation so as not to equate an eggshell fragment with bone fragments. It was thought that inclusion of the eggshell figure would skew all other figures. The total bone weight is given for each recovered species and what percentage that weight comprises of the total weight.

The domesticated species represented in the faunal material from Feature 5 included cow (Bos taurus), pig (Sus scrofa), and sheep (Ovis aries). A variety of domesticated and game birds were identified within the samples studied and they included: chicken (Gallus gallus), grouse (Tetraonidae sp.), duck (Anatidae sp.),goose (Anser sp.), and dove/pigeon (Columbidae sp.). The non-food species were cat (Felis domesticus), rat (Rattus sp.), mouse (Mus musculus) and robin (Turdis migratorius). Mud turtle (Kinosternon subrubrum) elements were recovered. However, it is not known if they were commensal or dietary components. Hard shell clam (Mercenaria mercenaria) fragments were also identified within the samples.

2. Species Patterning

Tables 6.4 and 6.5 aid in understanding the frequencies of recovered species for each stratum of Feature 5. The adjusted total number of fragments (TNF*) is listed for each recovered

SPECIMEN	TNF	TNF*	%TNF*	WEIGHT	% WEIGHT
SHEEP	109	101	7	573.5	13
PIG	65	25	2	543.2	12
COW	42	35	3	2012	46
MEDIUM MAMMAL	6	6	<1	28.5	1
LARGE MAMMAL	6	2	<1	37.9	1
MED/LG MAMMAL	7	7	<1	4.8	<1
MAMMAL LONGBONE	236	236	18	527.2	12
MAMMAL UNDET RIB	2	2	<1	16.3	<1
NON DIAGNOSTIC MAMMAL	409	409	30	247.1	6
CAT	3	3	<1	0.8	<1
MOUSE	93	93	7	14.5	<1
RAT	3	2	<1	0.9	<1
TURTLE	11	11	1	5.7	<1
PIGEON	11	11	1	2.7	<1
CHICKEN	36	35	3	21.7	1
DUCK	5	5	<1	3.1	<1
TURKEY	93	71	5	191.6	4
GOOSE	27	13	1	29.4	1
GROUSE	37	25	2	12.5	<1
ROBIN	6	6	<1	1.1	<1
BIRD UNDETERMINED	243	239	18	49.4	1
EGGSHELL	567	567	-	6.5	<1
CLAM	3	3	<1	17.2	<1
TOTAL	**2020**	**1907**	**98**	**4347.6**	**98**
		1340*			
weight in grams					
TNF - Total Number Fragments					
TNF* totals adjusted for cross mends					
1340* total without eggshell count-this figure used to compute %TNF*					

TABLE 6.3: FEATURE 5 Faunal Distribution

SPECIMEN	Sur	1	3	6	7	8	9	10	11	12	13	14	15	16	17	18	19	TOTAL[a]
SHEEP #	1		1				1			2	6	2	9	40	6		33	101
SHEEP WGT	21.3		10				1.7			31.7	22.9	49.5	30.5	234.9	52.7		118.3	573.5
COW #									1			1		23	8		2	35
COW WGT									44.4			29.7		665.4	955		317.3	2011.7
PIG #								2						8	1		14	25
PIG WGT								29						196.1	39.1		278.9	543.2
MED MAMMAL#								6										6
MED WGT								28.5										28.5
LG MAMMAL #									2									2
LG MAM WGT									37.9									37.9
MED/LG MAM #																	7	7
MED/LG WGT																	4.8	4.8
MAM LONGBONE		3	18	3	1	1		54	9		6		5	100	9		29	236
LONGBONE WGT		3.2	53.9	13.8	3.6	3.2		127.3	9.1		6.4		9.9	180	23.8		96	527.2
MAM UNDET RIB															2			2
MAM RIB WGT															16.3			16.3
N D MAM #			5	4	2		1	105	10					138	20	3	121	409
N D MAM WGT			4.8	1.6	0.8		0.6	97.5	5.7					47.1	30	2.1	56.9	247.1
TURTLE #													9	2				11
TURTLE WGT													4.8	0.9				5.7
CAT #																	3	3
CAT WGT																	0.8	0.8
MOUSE #													5	8	77	3		96
MOUSE WGT													0.7	1.3	12.2	0.3		15.4
RAT #												2						2
RAT WGT												0.9						0.9

TABLE 6.4: FEATURE 5 Faunal Distribution by Strata

SPECIMEN	Sur	1	3	6	7	8	9	10	11	12	13	14	15	16	17	18	19	TOTAL*
GROUSE #										2		9		12	1			24
GROUSE WGT										1.1		7.9		3.2	0.3			12.5
PIGEON #													3				8	11
PIGEON WGT													0.6				2.1	2.7
GOOSE #																	13	13
GOOSE WGT																	29.4	29.4
CHICKEN #			5						3		1			22	4			35
CHICKEN WGT			3.2						1.8		0.8			13	2.9			21.7
DUCK #								2						3				5
DUCK WGT								1.3						1.8				3.1
TURKEY #												71						71
TURKEY WGT												192						192
ROBIN #																	6	6
ROBIN WGT																	1.1	1.1
BIRD UNDET #			8		1	2	2	8	1	3	2	29	11	88	33		51	239
BIRD WGT			2.2		2.2	0.4	0.9	4	0.2	0.3	0.4	8.7	1.8	11.4	6.9		10	49.4
EGGSHELL #									24		17	6	12	7			501	567
EGGSHELL WGT									0.4		1.3	0.2	0.1	<.1			4.5	6.5

TABLE 6.5: FEATURE 5 Bird by Strata

species. The adjusted figures account for cross mends and multiple fragments of a single skeletal element. Total gram weight is recorded for recovered species from each stratum.

Sheep, pig and cow were the predominant species recovered from Feature 5, and comprised 62 percent of the total assemblage. The highest frequency of skeletal elements identified to species were from sheep; the number of sheep elements was three times that for cow and four times the number of pig. However, the gross recovered skeletal weight is far higher for cow than for either sheep or pig. In fact, the gross weight of identified cow specimens is 2,011.1 grams, which accounts for 46 percent of the weight of the total assemblage. Sheep and pig comprise 13 percent and 12 percent respectively.

One-third of the assemblage (30%) was comprised of bird elements. The recovered chicken and turkey were domesticated; however, grouse, goose, duck, and pigeon/dove were probably not. Turkey is represented by the largest frequency of specimens. However, the total recovered elements could be from a single turkey. All of the goose specimens are from a single bird. Grouse, duck, and pigeon/dove would have been abundant locally. It is possible that they were game birds killed for sport.

3. Butchering Patterns

a. Beef

An entire beef carcass weighs between 600 and 750 pounds before it is divided into two sides to be marketed. Each side of beef is then divided into a forequarter and a hindquarter. From these two portions come what are called the seven primal cuts. Four of the primal cuts come from the forequarter and four from the hindquarter. The two forequarters comprise 52 percent of the carcass. A forequarter weighs from 155 to 190 pounds and is divided into four primal cuts, which are chuck, ribs, brisket and short plate (Evans and Greene 1973).

The neck is generally cut away from the chuck. The neck is one of the least tender beef cuts and is usually boiled. The neck includes the axis and cervical vertebrae 3-7.

Chuck comes from the neck and shoulder which is a mobile part of the beef and consequently this is not a highly tender cut. The whole chuck usually weighs somewhere between 78 and 98 pounds before it is divided into consumer-sized sections. The chuck represents approximately nine percent of the entire carcass. Chuck is cut into a variety of steaks and roasts. Chuck includes thoracic vertebrae 1-5, dorsal rib 1-5, and the scapula.

Brisket is a very fibrous part of the beef with lots of connective tissue and fat. This cut requires long and slow moist cooking or curing to make it tender enough to eat. Cured brisket is

known as corned beef. Brisket includes the sternabrae and coastal cartilage 1-5.

Ribs of beef is the only immobile primal cut of the forequarter. It yields the most tender steaks and roasts. Beef ribs generally weigh about 28-40 pounds. The rib section represents about 10 percent of the carcass. The rib section includes the dorsal ribs 6-13 and the thoracic vertebrae 6-13.

The short plate is a part of the sternum. The cuts obtained from the short plate are adaptable only to moist cooking or grinding. This meat is usually combined with lean parts of the chuck for grinding. Short plate cuts are most frequently used for soup or stews. The short plate includes the coastal cartilage 6-13.

The hindquarters comprise 48 percent of the steer carcass but yield more steaks, more roast, and less stew and chopped meat than the forequarters. A hindquarter weighs from 145 to 180 pounds and is divided into four primal cuts: the full loin, whole flank, rump, and the round (Evans and Greene 1973).

The full loin is the most select section of the hindquarter, and the most tender part of the entire beef carcass. It is the primal cut from which the beef tenderloin, the porterhouse, the sirloin, and the filet mignon are cut. The full loin is subdivided into the short loin and the sirloin. The short loin includes the lumbar vertebrae. The sirloin includes the ilium and sacrum.

The round represents 20 percent of the carcass weight or about 60 pounds of beef. The round is often divided into three sections: top round, bottom round, and eye of round. The round is represented by the distal femur and diaphysis (Evans and Greene 1973).

The flank is hidden in much fat. Flank steak is also called London broil. There are no bones associated with the flank section. Archaeologically it is quite difficult to ascertain the extent to which this cut was consumed.

The rump is about 4 percent of the carcass weight and weighs approximately 12 pounds. The rump is associated with the acetabulum, pubis, ischium, and proximal femur.

b. Pork

A hog, when slaughtered, weighs about 200 pounds. The seven primal cuts of pork are: the leg, the loin, pork belly, breast, pork shoulder, jowl, and feet (Evans and Greene 1973).

The leg represents 18 percent of the hog and yields the greatest amount of solid, lean meat for roast and steaks and most importantly, hams. Generally a 12 to 16 pound leg is divided into two roasts: a 6 to 8 pound fresh ham butt end and a 6 to 8 pound fresh ham shank end (Dardick 1986).

The loin of pork consists of the greater piece of the vertebrae and encompasses part of the scapula. Young whole pork loins weigh from 10 to 14 pounds and represent about 15 percent of the animal. The cuts from the extreme loin end contain a great deal of bone. Those from the extreme rib end have more fat. The center cut which is about 8 pounds of a 14 pound loin, corresponds roughly to the rib section of the beef. It yields roasts and chops (Evans and Greene 1973).

The pork belly represents almost 18 percent of the animal and adapts well to smoking and curing. Pork belly is usually turned into salt pork and bacon. There are no bones associated with the pork belly.

The breast of pork is the primal cut that renders spare ribs. It is only 3 per cent of the entire animal. There are 13 ribs that weigh from 2 to 5 pounds.

The pork shoulder weighs from 12 to 16 pounds and represents 15 percent of the animal (Dardick 1986). Visually the shoulder resembles the fresh ham of the leg of pork, but the meat it yields is not as tender and lean. The shoulder can also be divided into butt, picnic, and feet (Dardick 1986). The bones associated with the butt are scapula, atlas, axis, cervical 1-7, and dorsal vertebrae 1-2. The bones associated with the picnic are humerus, ulna, and radius. Phalanges, metacarpals, and carpals are associated with the foot.

c. Lamb/Sheep

The best of domestic lamb is readied for market when it is between five and seven months of age. Spring lamb is available between March and September. A lamb carcass weighs from 45 to 60 pounds and is divided across the back into two equal sections: the foresaddle and the hindsaddle (Evans and Greene 1983).

The foresaddle represents 50 percent of the entire lamb and encompasses four of the primal cuts which are: shoulder, rack, foreshank, and breast (Dardick 1986).

The shoulder is cut from the neck, shoulder, and part of the shank portions and represents 24 percent of the carcass. The chuck of lamb corresponds to the chuck of beef in that it is the most mobile part of the animal. Lamb is not as mature, however, and its connective tissue is not as fully developed as those in beef chuck. The meat is therefore still fairly tender and some of the cuts may be roasted or broiled.

The rack of lamb comes from the rib section and is about 12 percent of the carcass. It is the most tender section of the foresaddle of lamb from which up to fourteen rib chops may be cut. The rack corresponds to that section of beef that yields rib roast and rib steaks.

The foreshanks are the two front legs of the lamb and are 4 percent of the carcass. This portion of the lamb is more commonly referred to as lamb shanks.

The breast of lamb represents 10 percent of the carcass and is the least meaty section of the lamb. The breast may either be cut into lamb riblets or de-boned and rolled as a roast or ground. The lamb breast is very boney but it is priced lower than cuts from the shoulder or leg. However, it may well end up costing more after it has been trimmed than those other more solid pieces of meat (Evans and Greene 1973).

4. Butchering Implements

In some cases, the instrument used for butchering was discernable on the modified bone because knives, cleavers, and saws leave different markings on bone. A cleaver cut was identified on cross-section bones as clean cut marks without striations. Cleavers or hand axes often left signs of crushing or splintering. Knife marks were shallow and of pencil line thickness. Handsaws leave coarse striations and many cuts show irregular back and forth motion of the human arm.

A total of 158 bones from Feature 5 exhibited traces of butchering modification. A coarse tooth saw was the predominant butchering implement observed and of the 158 butchered bones, 94 bones exhibited a coarse sawed surface. The use of a cleaver was observed on three specimens. It is of interest to note that in each instance the cleaver was used in conjunction with a saw. Cleaver marks were noted on a cow distal tibia, a femoral head, and two humeral head portions.

A total of four goose and turkey bones exhibited knife marks. Some mammal bones exhibited traces of secondary butchering with the use of a knife. Two cow ribs, a sheep rib, as well as an unidentified longbone fragment had knife marks suggesting that meat had been scraped off the bones. Knife marks were observed on a pig mandible along the horizontal ramus; however they did not suggest scraping.

Butchering by breakage must also be considered a butchering technique. Game bird and chicken bone probably were butchered in this way. A large portion of the bird bone was broken.

The butchering pattern inherent in carcass butchering was one whereby the carcass was split into halves or sides by means of a saw. Most of the vertebrae were sawn in half longitudinally. A total of 112 bone, primarily vertebrae, were split longitudinally. This finding is consistent with that butchering practice. Each side was probably quartered for manageability.

The locations of butcher marks were recorded in an attempt to identify general and/or specific meat cuts. All butchered faunal

remains were examined for butchering patterns and resulting meat cuts. Figure 6.1 illustrates the location and nomenclature of skeletal elements. Figures 6.2, 6.3, and 6.4 illustrate the delineation of skeletal elements into butchering cuts for cow, pig, and sheep. Figures 6.5, 6.6, and 6.7 illustrate butchered elements recovered from cow, pig, and sheep.

5. Butchering Unit Distribution

Butchering activity can produce three different kinds of refuse. Primary refuse generally refers to the waste from the initial slaughtering process and can include skulls and skull fragments, distal metatarsals, and phalanges. If the breast is split for heart and organ removal, then small fragments of sternum and distal ribs may also be found. If tails (caudal vertebrae) are not to be eaten, they are disposed of at this time. Secondary refuse is discarded when the carcass is cut into halves, quarters, or smaller primal cuts of meat. The type of scrap bone varies but generally includes vertebral remains, sternal fragments, and heavy dense bone fragments such as proximal and distal ends of long bones. Tertiary refuse refers to the meat waste such as blade roasts, steak bones, etc., that results from meal preparation.

The data were viewed using butchered meat units because it was thought that this would give more insight as to how a carcass was apportioned. Utilizing butchered meat units as an analytical unit also gives insight as to the way the household cooked and the kinds of dishes prepared.

Tables 6.6, 6.7, and 6.8 give the minimum number of meat units for cow, pig, sheep, and the archaeological representation of that unit for each stratum under study.

A primary function of a faunal analysis is to discern the unit of meat acquisition. Meat acquisition units vary depending upon the temporal, spatial, and geographical variables impacting the site area. Farmsteads most likely processed entire animal carcasses. Therefore, the entire animal would be considered the meat unit. Analysis would focus on the quantity of animals slaughtered and Minimum Numbers of Individuals (MNI) would be determined. Occupants of urban sites had access to a market economy whereby cuts of meat could be purchased. Therefore, the unit of acquisition would have been roasts, steaks, ribs, etc., rather than an entire carcass. All too frequently, occupants of both urban and rural sites would utilize a mixed economic strategy, whereby some animals and poultry would be raised at the site and some would be purchased at the market.

Critical to analysis of Feature 5 is understanding how meat was procured. The VanDeventer-Fountain Site is unique in the sense that although its location was rural, it was not used in a traditionally rural manner, i.e., as a farmstead, during the period under study.

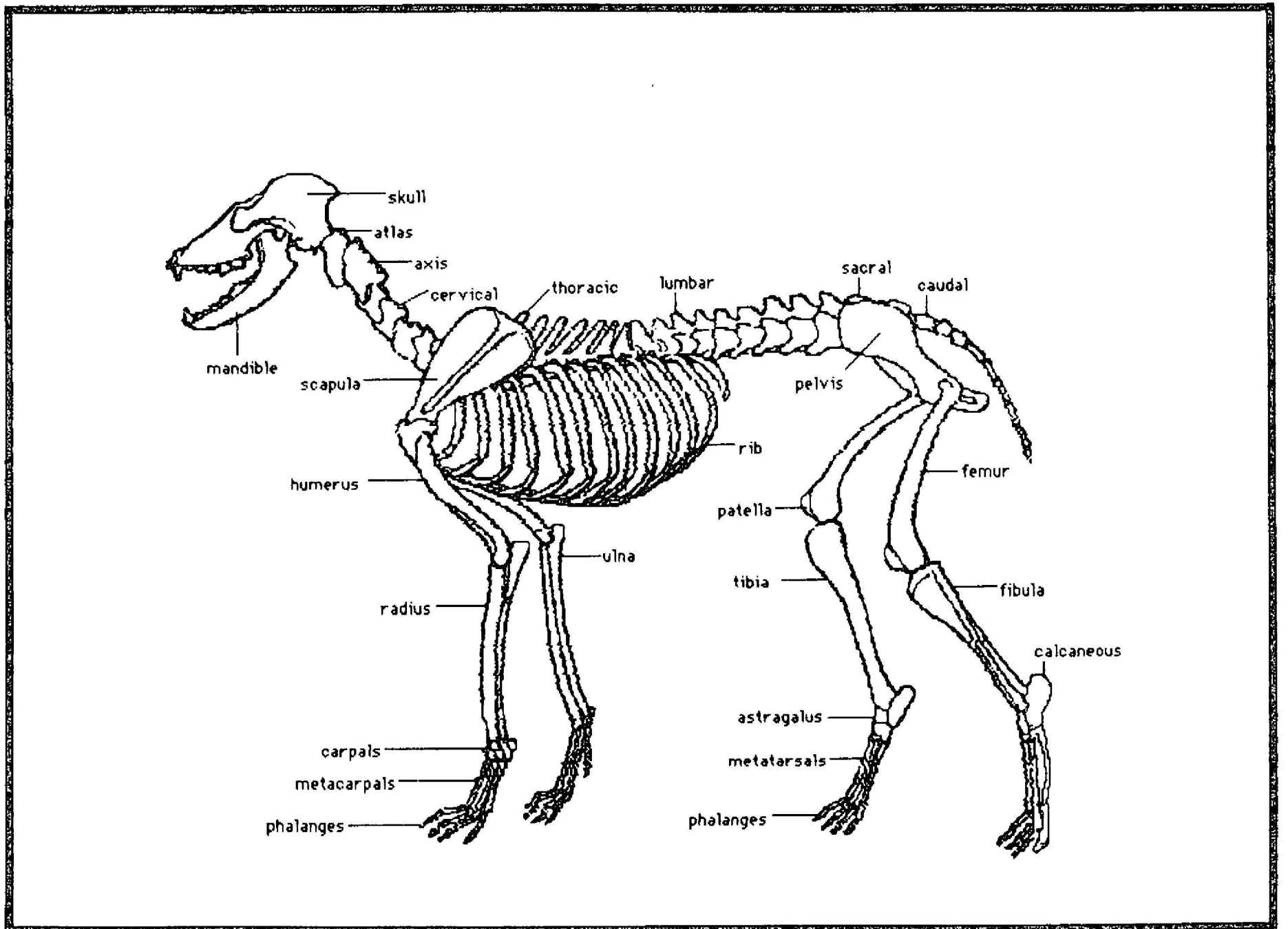


FIGURE 6.1: Skeletal Diagram Illustrating Osteological Terminology

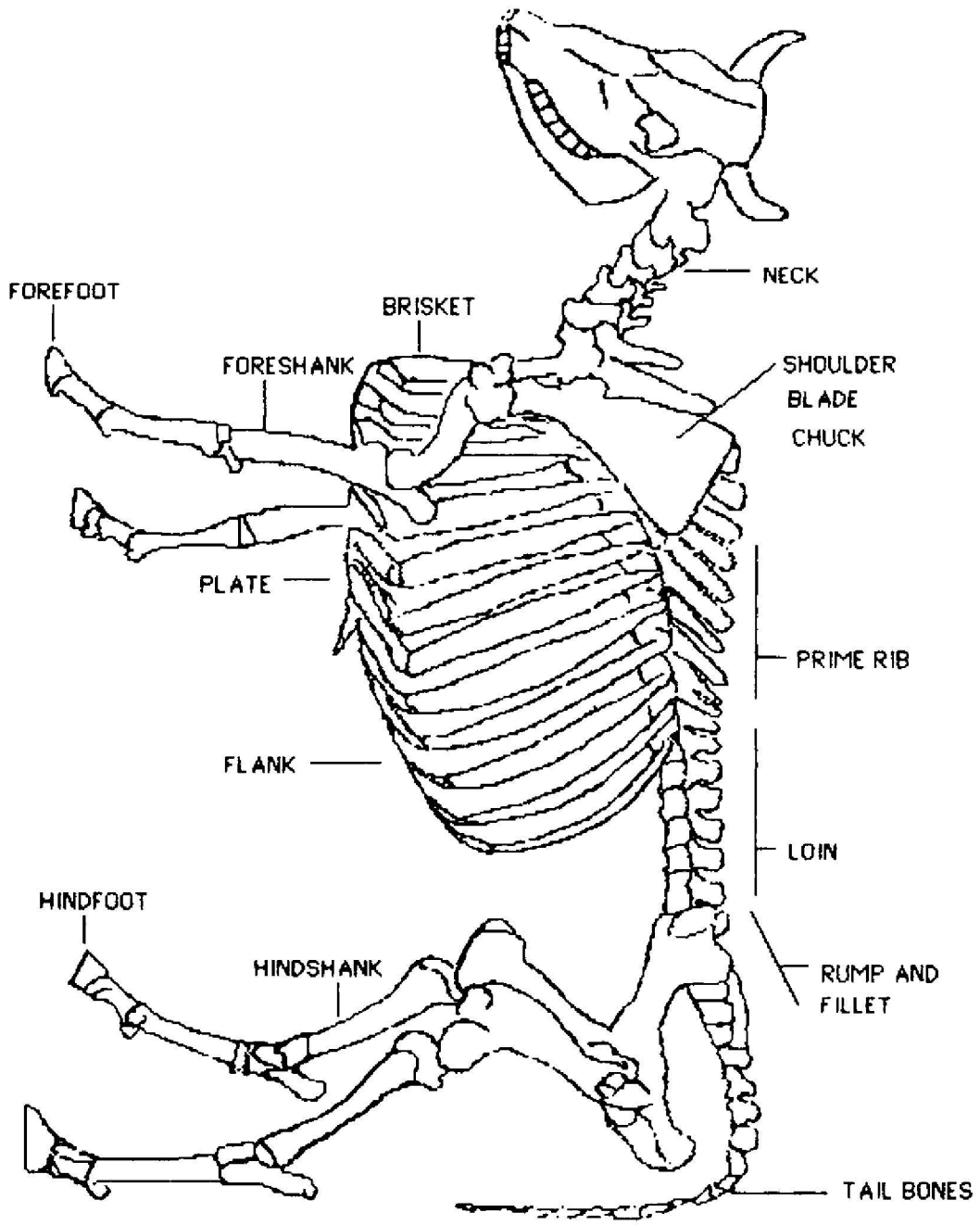


FIGURE 6.2: Butchering Cuts of Meat for Cow

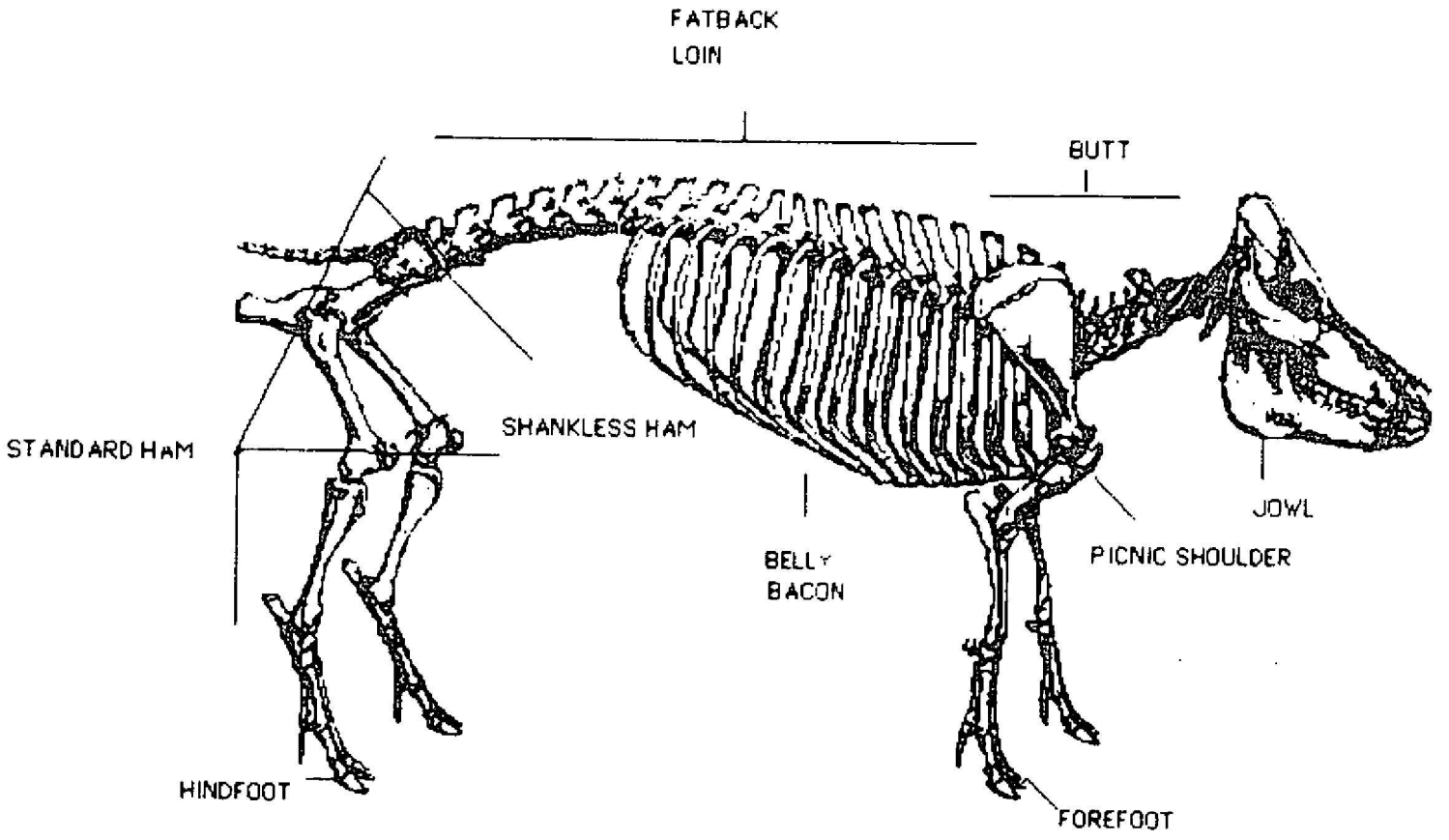


FIGURE 6.3: Butchering Cuts of Meat for Pig

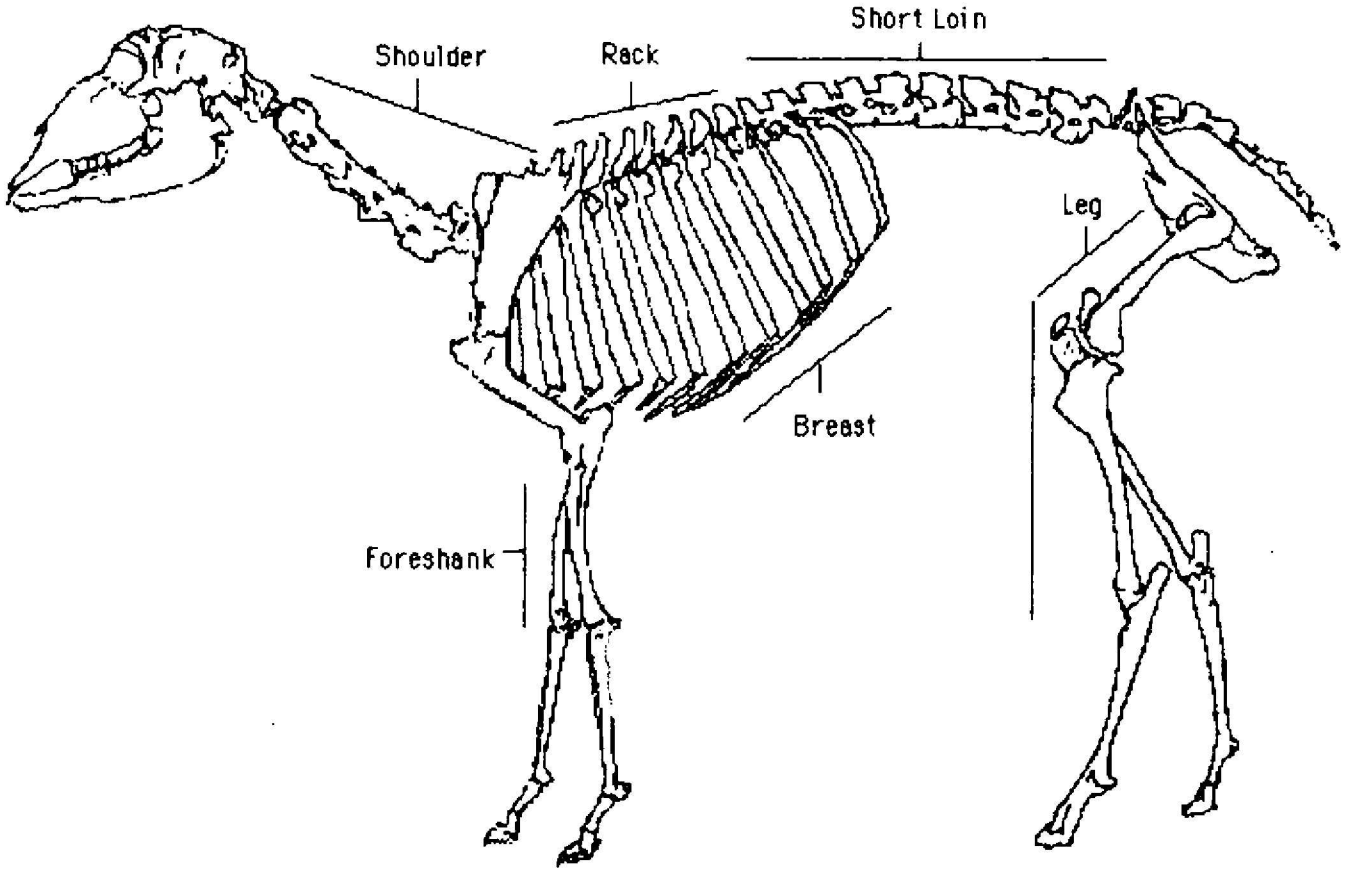
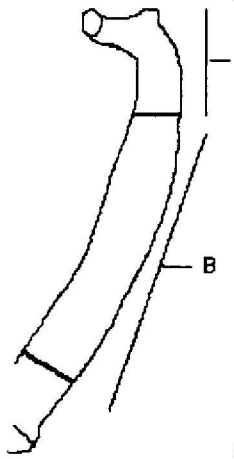


FIGURE 6.4: Butchering Cuts of Meat for Sheep

BONE UNIT	No. OF UNITS Left	Right	TOOL	#CUTS	COMMENTS
STRATUM 11					
B	(1)		saw	2	15 1/2 cm x 4.5 cm butchered both sides (400)
STRATUM 16					
B	(4)		saw	4	2 18 cm, 16 cm, 4 cm 2 split longitudinally 1 butchered both sides (503)
B	(4)		saw knife	6+	2 17.5 cm ,2 18 cm 2 butchered both sides 2 w/knife marks (432)
STRATUM 17					
B	(1)		saw	2	butchered both sides 8 cm x5 cm (504)
A	(1)		saw	2+	2 butchered surfaces +multiple saw marks 9 cm lgth (457)
STRATUM 14					
A	(1)		saw	2	2 butchered surfaces split longitudinally 6 cm lgth (417)

Rib



Scapula

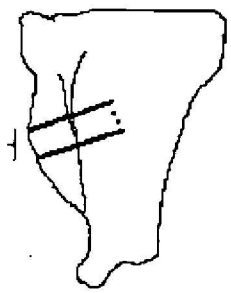


FIGURE 6.5: Butchered Cow

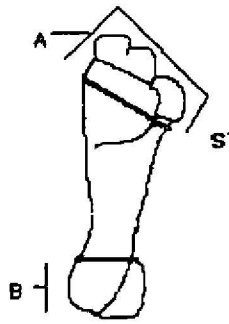
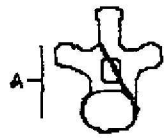
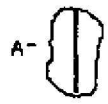
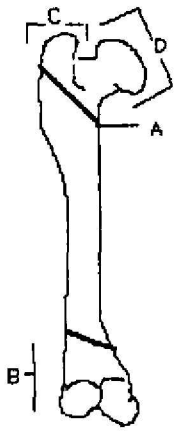
BONE UNIT	No. OF UNITS Left	Right	TOOL	#CUTS	COMMENTS
STRATUM 16					
Humerus 					
B	1		saw	1	6 cm bdth (432)
STRATUM 17					
B	1		saw	2	12.5 cm lgth butchered & broken (504)
A	1	(1)	indet	2+	multiple cut marks 1 humeral head 1 head + tuberculum (504)
B	1		saw	1+	multiple saw marks (457)
STRATUM 16					
Vertebrae 					
A		(4)	saw	4	cut longitudinally 1 cervical 3 thoracic (432)
STRATUM 16					
Scaphoid 					
A		(1)	saw	1	cut longitudinally (432)

FIGURE 6.5: Butchered Cow con't

BONE UNIT	No. OF UNITS Left	Right	TOOL	*CUTS	COMMENTS
STRATUM 17					
Femur					
B	1		saw	1	11.5cm lgthx12 cm bdth (504)
A	1		saw	2+	multiple cut marks (504)
C	(2)		indet	2	(504)
STRATUM 19					
D		1	saw	2	2 xmend (495)
A	1		saw	1	split longitudinally epiphysis missing (495)
Tibia					
STRATUM 16					
A	1		saw	1	split longitudinally (432)
B/C		1	saw cleaver	2+	xmend, cleaver marks on B (432)



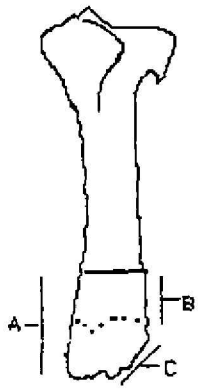


FIGURE 6.5:Butchered Cow con't

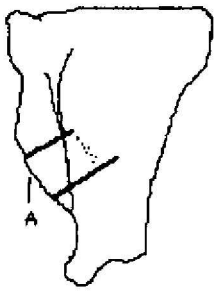
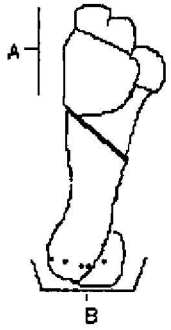
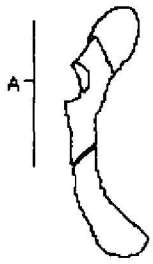
BONE UNIT	No. OF UNITS Left	Right	TOOL	#CUTS	COMMENTS
Scapula					
					
STRATUM 19					
A		(2)	saw	4	butchered both sides and broken (495)
Humerus					
STRATUM 16					
					
A		(2)	saw	2	head + shaft xmend not fused (432)
B		(1)	saw	1	condyle, not fused (432)
Ulna					
STRATUM 16					
					
A	1		saw	1	(432)

FIGURE 6.6: Butchered Pig

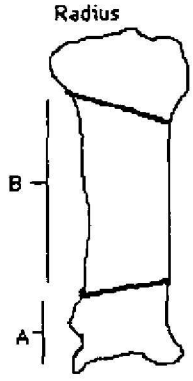
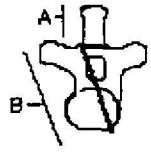
BONE UNIT	No. OF UNITS Left	Right	TOOL	#CUTS	COMMENTS
STRATUM 16					
Radius 	A	2	saw	3	2 xmend and xmends w/prox (432)
	B	1	saw	2	2 xmend and xmend w/distal (432)
STRATUM 18					
Vertebrae 	A	(1)	saw	1	(377)
	B	(1)	indet	1	xmends w/spine (377)
STRATUM 16					
	B	(5)	indet	5+	multiple cuts (432)
STRATUM 19					
	B	(1)	indet	1	(495)

FIGURE 6.6: Butchered Pig con't

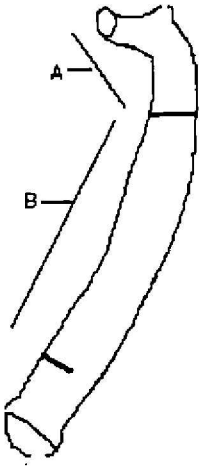
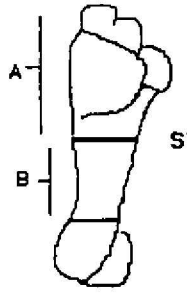
BONE UNIT	No. OF UNITS Left	Right	TOOL	#CUTS	COMMENTS
Metatarsal II 	**STRATUM 19**				
A	(1)		indet	1	split longitudinally (460)
	STRATUM 17				
					
B	(1)		saw	2	17.5 cm lgth (446)
	STRATUM 19				
A	(1)		saw	1	9.5 cm lgth (495)
B	(4)		saw	8	11,6.5,9.5,4.3 lgth 2 butchered both sides 2 butchered & broken (495)
B	(1)		saw	2	14.5 cm lgth (460)

FIGURE 6.6: Butchered Pig con't

BONE UNIT	No. OF UNITS Left	Right	TOOL	#CUTS	COMMENTS
Humerus					
STRATUM 12					
A	1		saw	1	9.5 cm lgth epiph missing (485)
STRATUM 16					
A	1		saw	1	7 cm lgth (503)
STRATUM 19					
B		(1)	knife indet	6+	secondary butchering w/knife multiple cuts (495)
Scapula					
STRATUM 19					
A		(2)	saw	4	butchered both sides and broken (495)
B		(1)	saw	1	(495)
A		(3)	saw	3	butchered both sides and broken (460)



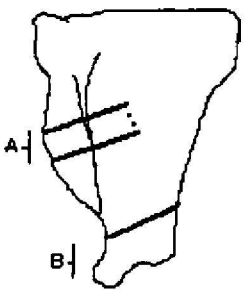
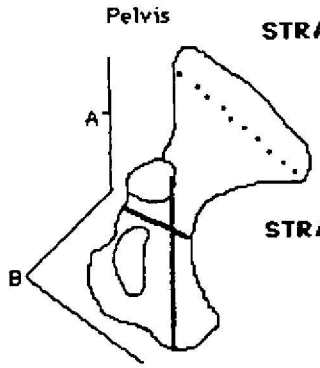


FIGURE 6.7: Butchered Sheep

BONE UNIT	No. OF UNITS Left	Right	TOOL	#CUTS	COMMENTS
Pelvis					
STRATUM 14					
A		1	saw	1	broken as illustrated (417)
STRATUM 15					
B	(1)		saw	1	(428)
STRATUM 16					
B		1	indet	1	(432)
Rib					
STRATUM 16					
B	(5)		indet	10	<5 cm lgth (432)
A	(5)		saw	5	>5<8 cm lgth (432)
STRATUM 19					
B	(5)		saw knife	10+	2) 7 cm lgth 1<3 cm 1<2cm, 3.5, 5 cm lgth knife marks on 1 (495)
B	(1)		undet	2	<4 cm lgth (460)



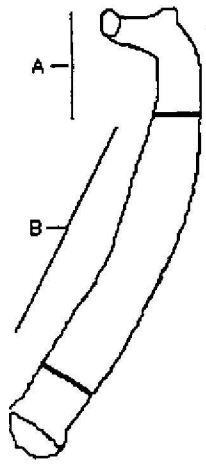
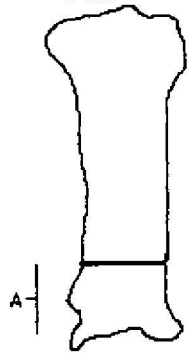


FIGURE 6.7: Butchered Sheep con't

BONE UNIT	No OF UNITS Left	Right	TOOL	#CUTS	COMMENTS
Radius					
STRATUM 16					
A		1	saw	1	(432)



Femur					
STRATUM 15					
A		1	saw	1	3 cm lgthx2 cm bdth epiphysis not fused (428)
STRATUM 16					
A,B,C		1	saw	3	xmend (432)

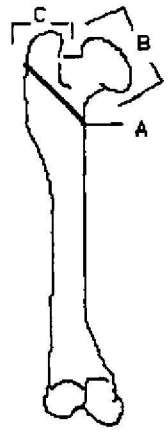


FIGURE 6.7: Butchered Sheep con't

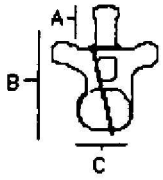
BONE UNIT	No. OF UNITS Left	Right	TOOL	*CUTS	COMMENTS
Vertebrae	**STRATUM 12**				
					
A	(1)		saw	1	(485)
STRATUM 13					
B	(2)		indet	2	(416)
STRATUM 15					
B	(2)		indet	2	(428)
STRATUM 16					
B	(5)		indet	5	(432)
C	(1)		indet	1	(432)
STRATUM 19					
A	(2)		indet	2	(495)
B	(4)		indet	4	(495)

FIGURE 6.7: Butchered Sheep con't

LOCATION	MINIMUM NO.	BUTCHERED MEAT UNIT	ARCHAEOLOGICAL REPRESENTATION
Stratum 11	1	Rib	1 rib midsection (400)
Stratum 14	1	Chuck	1 scapula midsection (417)
Stratum 16	4	Rib	4 rib (503)
	1	Forefoot	1 magnum, 1 lunate, 1 trapezoid, 2 xmend cuneiform, 1 scaphoid, 3 xmend unciform, 1 MC epiphysis (432)
	1	Neck	1 cervical vertebrae(432)
	2	Short Rib	2 rib midsection (432)
	3	Rib Steak	3 thoracic vertebrae (432)
	2	Rib	2 rib (432)
	1	Foreshank	humerus distal and humerus proximal (432)
	2	Round	2 xmend Right tibia distal, 1 Left tibia distal (432)
Stratum 17	1	Round	femur distal (504)
	1	Rump	femoral head and trocanter frags (504)
	2	Foreshank	humerus distal (504)humerus distal (457)
	2	Chuck	humerus head (504)
	1	Short Rib	1 rib midsection (504)
	1	Rib	1 proximal rib (457)
Stratum 19	1	Rump	femur proximal and 2 femur ball xmend (495)

catalog # in parenthesis

TABLE 6.6: Butchered Meat Units for Cow

LOCATION	MINIMUM NO.	BUTCHERED MEAT UNIT	ARCHAEOLOGICAL REPRESENTATION
Stratum 10	1	head	molar 2 (377)
	1	butt	1 cervical vertebrae xmends w/ 2 spine frags (377)
Stratum 16	3	picnic shoulder	1 distal radius (503),2 left distal radius frags xmends w/2 left proximal radius frags(432), 1 distal radius (432),1 left ulna (432), humerus proximal and humerus distal condyle (432)
	1	forefoot	pisiform (432)
Stratum 17	1	rib	rib (446)
Stratum 19	6	rib	5 rib (495),1 rib (460)
	1	shoulder	scapula ,humerus epiph xmends w/humerus (495)
	1	head	M2, mandible w/M3, 24 xmend skull frags, 3 xmend molar frags, (495), 2xmend skull frags (460)
	1	loin	thoracic vertebrae (495)
	1	hindfoot	MT2 (460),MT5 (495)

catalog # in parenthesis

TABLE 6.7: Butchered Meat Units for Pig

LOCATION	MINIMUM NO.	BUTCHERED MEAT UNIT	ARCHAEOLOGICAL REPRESENTATION
Surface	1	Forefoot	1 Metacarpal shaft (305)
Stratum 3	1	Forefoot	1 Metacarpal shaft (365)
Stratum 9	1	Head	1Molar 3 (364)
Stratum 12	1	Shoulder	1 humerus proximal(405)
	1	Rib	1 vertebrae spine f (405)
Stratum 13	1	Rib roast	1 thoracic vertebrae spine(416)
	1	Foreshank	1radius midshaft (416)
	1	Rib	2 vertebrae frags, 1 epiphysis (416)
Stratum 14	1	Leg	1 tibia proximal (417)
	1	Leg (sirloin)	2 pelvis (417)
Stratum 15	1	Leg (sirloin)	pelvis (428)
	7	Rib	vertebrae (428)
	1	Leg	Right femur proximal (428)
Stratum 16	1	Leg	Left femur (503
	2	Shoulder	humerus proximal (503),1 scapula 1 humerus shaft, 1 humerus ball(432)
	5	Sparerib	5 rib midsection (432)
	25	Rib	20 vertebrae ,1 epiph,5 proximal rib (432)
	1	Leg (sirloin)	pelvis (432)
	1	Hindfoot	metatarsal distal epiphysis (432)
Stratum 17	1	Shoulder	humerus proximal (504)
	2	Sparerib	2 rid midsection ((457)
	3	Rib	1 rib (444), 2 rib (504)

catalog # in parenthesis

TABLE 6.8: Butcherd Meat Units for Sheep

LOCATION	MINIMUM NO.	BUTCHERED MEAT UNIT	ARCHAEOLOGICAL REPRESENTATION
Stratum 19	2	Rib chops	2 proximal rib (495)
	1	Foreshank	1 radius mid shaft, 1 radius distal (495)
	1	Shoulder	3 scapula mid blade, 1 scapula proximal, 1 humerus mid-shaft(495)1 humerus proximal, 3 scapula blade frag(460)
	7	Spererib	3 rib midsection (495), 4 rib midsection (460)
	12	Rib	3 vertebrae spine, 3 rib, 4 thorecic vertebrae, 2 vertebrae epiphysis (495), 2 vertebrae (460)

catalog # in parenthesis

TABLE 6.8: Butchered Meat Units for Sheep

The faunal data were carefully examined to evaluate the following questions: 1) Were sheep, cows, or pigs raised and slaughtered at the site? 2) Were butchered meats being brought to the site? 3) If butchered meats were brought to the site, in what units were they brought, i.e., sides, quarters, or individual cuts?

Butchering wastage is distinctive in being the dense foot, tail, and head elements. Teeth are virtually indestructible and have a high survival rate in an archaeological context. No cow or sheep teeth were recovered from the feature under study. Phalanges are dense structured bones and also have a high survivability rate. On-site butchering and processing is usually characterized by high frequencies of waste elements. Assemblages comprised of market purchased meats are usually lacking in waste elements (unless they were used in a dietary manner such as pigs' feet) and there is a random pattern to the assignment of the side of the animal from which the particular bone came.

Figure 6.8 illustrates the distribution of primary, secondary, and tertiary butchering waste for the domesticated meat animals under study. An interesting pattern emerged from examination of butchering units for cows and sheep. The distribution of skeletal elements for cow is one such that what would be classified as primary butchering waste is exclusively from a single left fore-foot. The elements articulate into a single foot which probably articulates with the metacarpal. Humerus and femur elements are primarily from the left side. The pattern is such that the elements all seem to be from one side of the cow and there is a great deal of cross mending and articulation between elements. This pattern does not suggest that an entire cow was slaughtered on site but rather that a side of beef or beef quarters were the unit of acquisition for cow.

Virtually no butchering wastage is present for sheep. There does not seem to be a randomness to the left or right side recovery. Recovered sheep elements comprise a pattern similar to that for cow; it does not appear that sheep were butchered at the site area but rather that a side, forequarter, or hindquarter was brought to the site.

Teeth, skull, and foot elements are present for pig. This is a somewhat different pattern from what was observed for sheep and cow. It is possible that pigs were slaughtered at the site or that at least a whole carcass was brought to the site. The high frequency of shoulder elements may suggest that pork was brought to the site in the form of hams.

6. Slaughter Age

Analysis also focused on the quality of meats being consumed at the site area. Quality of meat can be assessed by the age at which it is slaughtered.

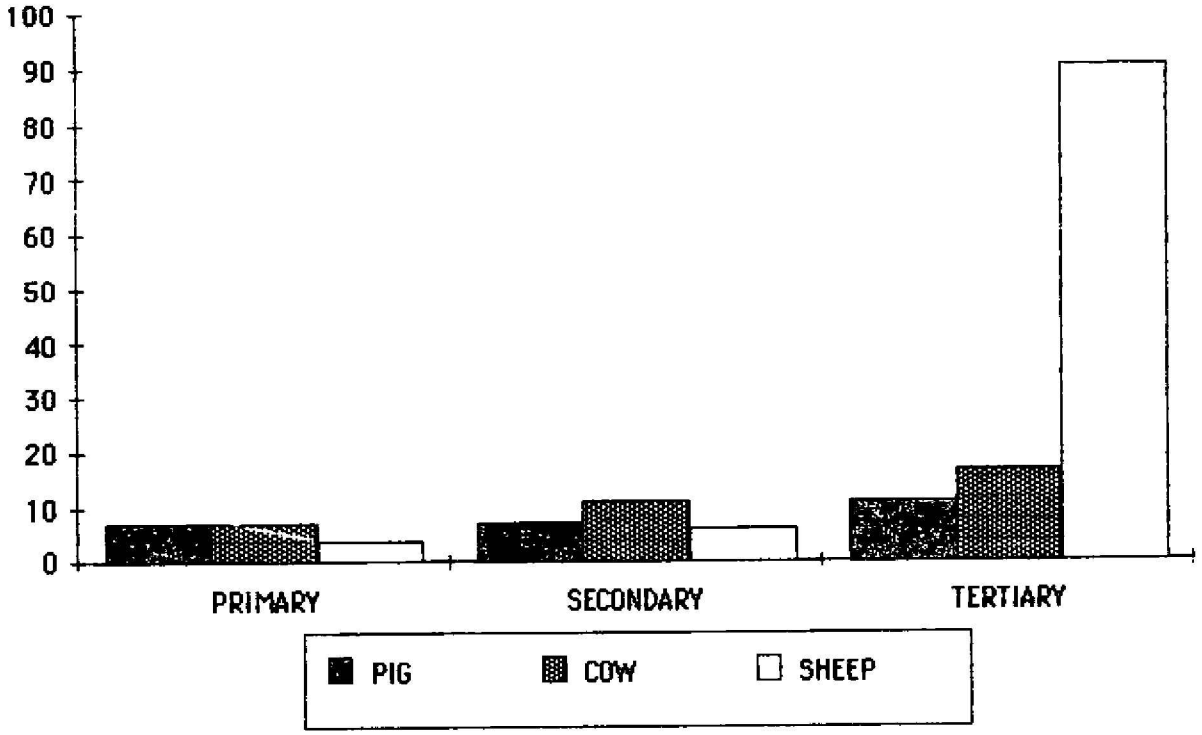


FIGURE 6.8: Primary, Secondary, and Tertiary Butchering

A very interesting pattern became evident during analysis; no fused epiphyses were noted for cow, sheep, or pig. Epiphyses which fuse early are the distal humerus, proximal radius, and the proximal second phalanx (cow). For cattle this fusion occurs at 1.5 years, for sheep at less than a year, and for pig at 1 year. Middle fusing epiphyses fuse from 2 to 2.5 years in cows and pigs and from 1 to 2.5 years in sheep. Late fusing epiphyses are the proximal humerus, distal radius, proximal ulna, distal ulna, proximal femur, proximal tibia, and the distal femur. The epiphyses on these elements fuse at 3 to 3.5 years of age for sheep and pig and from 3.5 to 4 years for cows. Table 6.9 lists the early, middle, and late fusing elements that were recovered for cow, pig, and sheep.

Most lamb carcasses are from animals less than 12 months old; although some lambs may be as old as 14 months when slaughtered. Carcasses from sheep more than 20 months old are known as mature mutton (Bull 1951). The age of sheep at death is the most important factor in the quality of the meat. The best meat comes from lambs. Anything over one year is mutton and has a strong flavor not preferred for meat. The data suggests that no mutton was a part of the assemblage from Feature 5. The lack of epiphyseal closure and the size of the bones suggested that the sheep assemblage was comprised of lamb.

Veal is from calves less than 12 weeks old and weighing less than 350 pounds. The wholesale and retail cuts of veal are the same as for beef except veal is just smaller (Bloch 1977:56). There is no longer a limited season for veal, but traditionally the best meat from calves was available in the spring. The youngest and most delicate was called milk veal and came from animals born late in the winter. It is thought that some of the recovered cow specimens are from very young animals. In addition to the unfused epiphyses present within the assemblage, the size of the elements also suggests that the animals were quite young. The typical breadth of a distal humerus on a mature cow is 100 centimeters whereas the breadth of a distal humerus (Stratum 16) from this assemblage measured 60 centimeters in breadth.

Pigs are traditionally marketed young and fat. Even brood sows are seldom more than three years old when marketed. Pigs are bred solely for meat. They mature at an early age and usually a sow has her first litter when she is a year old and then is marketed after the first litter is weaned. (Bull 1951:94).

7. Depositional Patterning

All too frequently, refuse deposition is so random that discerning patterning is difficult. Even in a bounded context, such as a farm, when it is assumed that animals were slaughtered on site, elements representing the whole animal are rarely recovered. This may be a function of apportioning various parts to be cured, smoked, dried, or pickled and hence eaten and disposed of at

	Unfused	Fused
Early Fusing Epiphysis		
Cattle (1.5 years)	1 distal humerus	
Sheep (<1 year)	1 distal humerus	
Pig (1 year)	1 distal humerus	
Middle Fusing		
Cattle (2-2.5 years)	1 distal tibia	
Sheep (1-2.5 years)		
Pig (2-2.5 years)		
Late Fusing		
Cattle (3.5 - 4 years)	1 proximal humerus	
	2 proximal femur	
	1 distal femur	
Sheep (3-3.5 years)	2 proximal humerus	
	2 proximal femur	
Pig (3-3.5 years)	1 proximal humerus	
	1 distal humerus	
	1 distal ulna	

TABLE 6.9: Epiphyseal Fusion

various intervals throughout the year. It also may be a function of the fact that all waste may not be disposed of in the same place.

The refuse deposition in Feature 5 was not as random as is normally encountered in such a context. The patterning was such that elements articulated with one another, suggesting origin from the same carcass. It further suggested that they were disposed of at the same time and in the same place. This suggests that large portions of meat were cooked and eaten in relatively short time periods.

A family unit will rarely prepare a quarter section of beef at one time and eat it all within a short period of time. Lack of proper refrigeration and the desire for a varied diet are but two variables which affect the decision to prepare such a large portion of meat.

One hypothesis is that the occupants of the home entertained extensively. This could account for the large portions of beef, lamb, and pig which appear in the archaeological record and appear to have been cooked and disposed of as a unit.

a. Birds

Thirty percent of the faunal assemblage was comprised of bird. The proportion of fowl within the assemblage suggests that birds, both wild and domesticated, were an important dietary component. Chicken, duck, grouse, dove/pigeon, turkey, and goose were represented within the assemblage. Six skeletal elements identified as robin were recovered from Stratum 19. These elements most likely represent a single bird and it is an accidental inclusion into the faunal assemblage. Chicken and turkey were the only fowl which were definitively domesticated.

Goose is a grazer capable of fending for itself. Geese turned into a meadow operate much like sheep and require about as much pasture. Although they are web-footed, they are the most terrestrial of water birds. They need some water in their vicinity, but can make do with much less than ducks. Geese are able to feed themselves on whatever greenery happens to be handy, with a minimum of expensive fattening before they are killed. They are generally raised on a small scale, for the farmer's family and perhaps a few of his neighbors. Even today, commercial goose production does not exist except in Germany, Austria, and Scandinavia (Root 1980).

Grouse resemble hens and share some aspects of behavior. They are relatively ground bound. Their terrestrial habits account for the fact that their meat is lighter in color than that of most game birds. (The breast meat of game birds is dark because a rich blood supply is required by strong flyers.) Grouse can fly fast but only for short distances. They nest on the ground and

find their food close to it in seeds, berries, and young plant shoots.

Ducks have historically been plentiful in America. Ducks were still plentiful in the first half of the nineteenth century; Charles Dickens told of crossing two wide streams on his way from Philadelphia to Washington, in which "the water in both was blackened with flights of canvas-backed duck which abound hereabouts" (Root 1980:112). Actually it was not the canvas-back duck which became the most widely eaten domesticated bird in the United States, but the Peking duck. This fowl is eaten throughout the country under the name "Long Island duckling" (Root 1980: 112). Long Island produces more than half of all ducks consumed in the United States. This dates from 1873, when a Yankee Clipper brought Peking ducks from China; all the ducks of this species in America are descended from this event (Root 1980:112). Since the deposit in Feature 5 most likely postdates 1873, the duck represented in the sample is most likely "Long Island duck."

Pheasant, partridge, woodcock, pigeon, duck, geese, and quail were abundant from Maine to Virginia (Earle 1974:110). The Hudson River, the East River, and their tributaries furnished each autumn vast feeding grounds to millions of swan, wild geese, and numerous varieties of duck.

Pigeons were quite plentiful and it is reported that "flights of pigeons darkened the sky, and broke down the limbs of trees on which they lighted" (Earle 1974:110). The passenger pigeon is now extinct, but it was once an abundant and economically important game species. The collection methods associated with exploitation of passenger pigeon included pushing the young (squabs) from their nest with poles and sticks. Trees in which the pigeons were roosting would be knocked down killing many of the pigeons when the tree toppled. Game birds were primarily shot and sometimes retrieved by trained dogs.

A whole turkey was identified in Stratum 14. A single goose was identified in Stratum 19. Grouse was recovered from Strata 12, 14, 16, and 17. Chicken was recovered from Strata 3, 11, 13, 16, and 17. Duck was recovered from Strata 10 and 16.

Poultry can be raised and killed on-site, purchased live at the market and killed on-site, or purchased in the dressed, drawn, or cut-up form. A dressed bird is one that has been killed and plucked. A drawn bird is a dressed bird from which the head, feet, and entrails have been removed. A cut-up bird is a drawn bird that has been cut into small parts. The apportioning of poultry into pieces at the market is a somewhat recent innovation and it is therefore unlikely that the residents at the site area purchased poultry cut-up.

The recovery of phalange, mandible, and skull fragments suggests that either the poultry was raised on-site or purchased as whole birds either alive or dressed. Mandible fragments were recovered

for chicken. Phalange and skull fragments were recovered from turkey. Skull fragments were identified as grouse. Numerous skull and phalange fragments were recovered that could not be specifically identified to species.

Approximately 567 eggshell fragments were also recovered. The majority (88%) of the eggshell fragments were recovered from Stratum 19.

b. Non-Dietary

Among the taxa represented; rodents, a cat, and probably turtle, are not directly associated with dietary activity. Turtle soup was a popular regional dish of the South and Southeast and Europe. The basic method for preparation is attributed to the French (Root 1980). However, there is little evidence that mud turtles were used in a culinary fashion. Traditionally, turtles of the Chrysemys (snapping turtle) and Malaclemys (diamond back terrapin) genera were the turtles whose flesh and eggs were used for food.

Rodents are attracted to trash deposits and their inclusion in archaeological deposits is quite common. Field mice were recovered from Strata 15, 16, 17, and 18. The only rat specimens were recovered from Stratum 14. It is of interest that, while a small amount of bone was noted as having been gnawed by rodents, a great deal of rodent specimens are present within Feature 5. It is possible that Feature 5 was the repository for mice caught in the house.

Two cat molars were recovered. One was from Stratum 19, Level 1 and the other was from Stratum 19, Level 2. It is possible that both molars are from a single animal. It is somewhat puzzling that no other elements were identified as cat. However, given the small size of the specimens, they could have been affected by vertical or horizontal dispersion caused by rodents or earthworms.

c. Bone Modification

The presence of rodent- and/or dog-modified bone in an archaeological context can be an indication of the way in which trash was discarded. If trash is left in an open context, then rodents and dogs have easy access to it. If trash is buried, covered, or thrown into a privy or cistern, then scavengers are less likely to gain access to it. No bone specimens had been chewed by dogs and very few bone specimens had been gnawed by rodents. Only 17 specimens from the entire assemblage studied showed evidence of rodent gnawing. The total amount of rodent impacted bone from each stratum is as follows: Stratum 3 (1); Stratum 11 (5); Stratum 12 (1); Stratum 13 (1); Stratum 14 (2); Stratum 18 (3); and Stratum 19 (4).

Burned bone indicates direct contact with fire or coals. Burning of bones may result as a by-product of roasting, or from disposal in a hearth. Bone can become burned when food waste is disposed of in the same context with ashes and stove debris. Therefore, bone can become burned as a result of cooking as well as trash disposal.

Accidental or purposeful exposure of bone to fire alters the calcium content of bone. If a fresh bone is burned, it does not necessarily alter its shape, but it does lose weight and becomes very friable. The destruction of organic material in bone through burning can shrink it from 5 to 15 percent and reduce its weight by 50 percent (Wing and Brown 1979:109).

Heat can result in the blackening of bone. Deeply blackened bone may suggest that flesh was still present during the burning (Brothwell 1971:19). Charring of bone during roasting is confined to the exposed ends of the bone not protected from the fire by meat. Burning at high temperatures for prolonged periods can leave the bone pure white, friable, soft, and porous, suggesting complete oxidation. Some burned bone that is not completely calcined does not reach the fragile state and, although light in weight, may be quite strong (Carbone and Keel 1985:7).

It is of interest to note that not all of the bone was charred in an even fashion. Burned bone ranges in color from black through blues and grays to white, depending on the completeness of its combustion (Wing and Brown 1979:109). Some bones of the assemblage were only slightly charred, while others within the same context were whitened. This suggest uneven exposure of the bone to fire or hot coals. Bones exposed to repeated dumping of coals or hot ashes upon them would exhibit more modification than bones not affected in such a manner.

Thirty percent of the total faunal assemblage was charred. A total of 402 faunal elements were charred. Of those, 115 were charred to the blackened state and 287 were charred white. Of the charred bone, approximately 84 percent was mammal bone, 16 percent was bird bone, and less than 1 percent was rodent. The charred mammal bone was primarily non-diagnostic fragments or longbone fragments. There was a significant concentration of charred specimens in Stratum 16 and Stratum 10.

D. SUMMARY

The faunal specimens under study were hypothesized to have been deposited during the period of time when the VanDeventer-Fountain House was used as a suburban villa by Henri Mouquin. The data were examined to ascertain in what ways the faunal material would reflect the dietary patterning and social status of the wealthy inhabitants. The patterning of the faunal elements associated with animal slaughter suggests that primary butchering of animals was not occurring at the site. Virtually no primary butchering

wastage is present for sheep or cow. The proportion of secondary refuse indicates that some secondary butchering did occur on-site. The pattern does not suggest that sheep or cows were butchered at the site area, but rather that a side, forequarter, or hindquarter was brought to the site. Therefore, beef and lamb must have been purchased in units larger than retail cuts and cut into smaller units at the site. Teeth, skull, and foot elements are present for pig. This is a somewhat different pattern from what was observed for sheep and cow. It is possible that pig was slaughtered at the site or at least a whole carcass was brought to the site. The high frequency of shoulder elements may suggest that pork was brought to the site in the form of hams.

The refuse deposition in Feature 5 was not as random as is normally encountered in such a context (privy, well, cistern). There does not seem to be a randomness to the left or right side recovery. Recovered sheep and cow elements comprise a pattern. The patterning was such that elements articulated with one another, which suggests that the elements were from the same carcass. It further suggested that they were disposed of at the same time and in the same place. This indicates that large portions of meat were probably cooked and eaten in relatively short time periods. A moderate-sized family unit will rarely prepare a quarter section of beef at one time and eat it all within a short period of time. Lack of proper refrigeration and the desire for a varied diet are but two variables which affect the decision to prepare such a large portion of meat. One hypothesis is that the occupants of the home entertained extensively. This could account for the large portions of beef, lamb, and pig which appear in the archaeological record and appear to have been cooked and disposed of as a unit.

The quality of meat consumed seems to be good. This assumption is based not only upon the cuts of meat but also upon the age of the animals when slaughtered. The faunal assemblage seems to be comprised of primarily young animals. Lamb and veal would have been more costly but would have been more flavorful, tender, and in general more desirable meat. The patterning of recovered faunal specimens suggests that the owners affiliation with the restaurant business may be manifested. Sides and quarters of meat are not considered a typical retail purchase. The faunal data may indeed reflect Mouquin's access to restaurant suppliers. Consequently, the most interesting finding of the study may be the use of commercial cuts of meat in a domestic setting.

VII. RESULTS

A. INTRODUCTION

The historical and archaeological investigations of the VanDeventer-Fountain House Site have contributed to current understanding of prehistoric and rural lifeways in Staten Island. The study also provides a comparative data base for future archaeological studies of Middle Woodland and Late Woodland sites and late eighteenth- to late nineteenth- century farmsteads. Specific research domains include the comparisons between consumer behavior of the site with the contemporaneous Hamlin family in northwestern New Jersey and urban households in New York City; an examination of the urban/rural continuum; and the study of the spatial arrangement of the farmstead over time. In addition, the research domains for the prehistoric component of the site consist of data on the chronology of site occupation, and comparison with contemporaneous sites in Staten Island and the general region. Each of these issues has been discussed earlier and will be summarized here in terms of the research questions posited in Chapter II.

B. PREHISTORIC RESEARCH ISSUES

The prehistoric remains from the VanDeventer-Fountain Site represent occupation during the Middle Woodland and Late Woodland periods, circa 500 BC to AD 1500. The oldest chronologically diagnostic artifact found on the site is a well-made chert Rossville point, dated circa 500 - 100 BC. Several ceramic types are represented among the small number of very fragmentary prehistoric sherds. Evidence of shell and argillite temper are indicative of ceramic types dated circa AD 200 - 800. Two sherds that crossmended were tentatively identified as a Bowmans Brook type, dated sometime after AD 700. Several large argillite bifaces are suggestive of preforms for Fox Creek points, which is consistent with a Middle Woodland occupation date.

Even though the Woodland components at this site were mixed and disturbed, several activity areas could be defined by the distribution of particular kinds of raw materials. In addition, several fragments of fire-cracked rock were interpreted as a small prehistoric hearth feature. Unfortunately, no subsistence remains could be associated with prehistoric utilization of the site area. Although several small shell features were excavated at the site, these were associated with historic rather than prehistoric deposits.

The small range and low density of prehistoric remains located at the VanDeventer-Fountain Site suggests that utilization of this site area was intermittent and consistently of short duration.

The function of this prehistoric site is interpreted as a hunting or gathering station occupied by a small group that dispersed from a local village or base camp site. There are no particular resources at this location, either in terms of food or raw materials, that would have made this site unusually attractive for prolonged occupation. Other Woodland occupations are known on Staten Island, such as Burial Ridge and Bowmans Brook sites, that may relate to the utilization of the Fort Wadsworth area during this era. The prehistoric remains from the VanDeventer-Fountain Site are consistent with patterns of settlement and population interaction recognized by artifact types and raw material utilization patterns from these other sites (see Jacobson 1980:65-67). The use of argillite, and perhaps some of the cherts and jasper, represented at the VanDeventer-Fountain Site indicates resource acquisition exchange with groups from areas such as eastern New Jersey, the Upper Delaware River Valley, and the Hudson Valley.

C. HISTORIC RESEARCH ISSUES

Research Question 1:

Was the consumer behavior during the occupation of the VanDeventer-Fountain Site similar to that associated with the contemporaneous Hamlin family (i.e., late eighteenth-early nineteenth century)?

Historical archaeologists have used ceramics as a primary means to measure the economic value of a household assemblage. The most useful analyses for measuring this value, in order to study consumer behavior, are the Miller ceramic economic scaling, the relative ceramic ranking, and the pattern and vessel function analyses (cf. Beidleman et al. 1983; Exnicios and Pearson 1985; Louis Berger & Associates 1985b, 1986, and 1987; Miller 1980; and South 1977). Because of the fragmentary nature and small amount of recovered data from the various faunal studies performed on the household assemblages, faunal information was not used to address this question or the second question discussed below.

The ceramic collection from the VanDeventer-Fountain Site was, in general, very fragmentary. This was especially true for the ceramics associated with the Cornelius and Abraham Fountain households. Therefore, vessel form and function could not be determined for the vast majority of either assemblage, thus precluding the use of the analyses mentioned above. Only a general comparison, based on sherd count, can be made between the Fountain assemblages and that of the contemporaneous Hamlin family. In order to make this

comparison, the ceramic assemblage from the respective households was placed within five general ceramic categories based on ware type. These categories consisted of: 1) Chinese porcelains, 2) tin-enameled earthenwares, 3) other imported fine wares, 4) imported coarse wares, and 5) domestic coarse wares (cf. King and Miller 1987).

Historical documentary evidence indicates that both Thomas Hamlin (ca. 1790 to 1810), a farmer in northwestern New Jersey, and Cornelius Fountain (1786 to 1815) were wealthy individuals. The size of Thomas Hamlin's farm, the number of livestock, and the ownership of a distillery clearly set him apart in wealth and importance (cf. Louis Berger & Associates 1986). VanDeventer was a member of a large and prominent family on Staten Island. In addition, he was listed on the 1790 Federal census as the owner of four slaves. While certainly not unknown in this region, ownership of slaves was relatively rare, and on the eve of American independence tended to characterize people of relatively high social and economic status (Jones 1980:205).

It is the incongruity between these indicators of status and Hamlin's and Fountain's household goods that proves interesting. The overwhelming majority of the Hamlin ceramic assemblage, both in number and percentage, were redwares (Table 7.1). This is due to the fact that the majority of these redwares were storage vessels (i.e., apple-butter jars) and represented a major commercial component of the farm. The remaining ceramics indicated that Hamlin preferred to use undecorated to minimally decorated imported fine wares. In contrast, Cornelius Fountain's assemblage exhibits an equal distribution between fine imported wares and domestic coarse wares. This may indicate that Fountain was not involved in any commercial activities requiring the storage of foodstuffs in redware vessels, at least not to the degree that Thomas Hamlin was. The absence of porcelain from both these assemblages suggests that a conscious choice was made not to purchase porcelain vessels, even though they were available to Hamlin through local area stores and to Fountain through New York City. This choice may be linked to a decision to place their wealth in land, animals, slaves, and farm structures, and in perishable items (i.e., textiles, coffee, tea, spices, etc.) that would not be found in the archaeological record.

Unlike the two earlier households, a striking difference can be seen between Abraham Fountain's and John Hamlin's assemblages (see Table 7.1). A dramatic rise is evident in fine imported wares within Abraham's assemblage. Almost 84 percent of his assemblage consists of these wares, while the rest of the assemblage is evenly divided among the tin-glazed earthenwares, imported coarse wares, and domestic coarse wares categories. This distribution contrasts sharply with John Hamlin's assemblage, where imported fine wares made up only 32 percent of the assemblage and redwares the remaining 68 percent (see Table 7.1). John's assemblage exhibits an almost identical pattern to that of his father (Thomas). Since

TABLE 7.1

COUNTS AND PROPORTIONS OF TOTAL CERAMICS
BY HOUSEHOLD FROM SELECTED RURAL SITES

	Cornelius Fountain (1786-1815)		Thomas Hamlin (ca. 1790-1810)		Abraham Fountain (1815-1835)		John Hamlin (1810-1856)	
Ceramic Type	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Chinese Porcelain	-	-	2	0.1	2	0.5	-	-
Tin-glazed Earthenwares	-	-	3	0.1	21	4.7	-	-
Other Imported Fine Wares	65	50.4	1,664	35.6	371	83.9	968	32.0
Imported Coarse Wares	1	0.8	-	-	25	5.7	-	-
Domestic Coarse Wares	63	48.8	3,003	64.2	23	5.2	2,062	68.0
TOTAL	129	100.0	4,672	100.0	442	100.0	3,030	100.0

TABLE 7.2

COUNTS AND PROPORTIONS OF TOTAL ARTIFACTS
BY HOUSEHOLD FROM SELECTED RURAL SITES

	Cornelius Fountain (1786-1815)		Thomas Hamlin (ca. 1790-1810)		Abraham Fountain (1815-1835)		John Hamlin (1810-1856)	
Artifact Type	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Tobacco Pipes	-	-	25	0.5	79	8.9	20	0.6
Bottle Glass	18	12.2	186	3.8	362	41.0	146	4.6
Ceramics	129	87.8	4,672	95.7	442	50.1	3,030	94.8
TOTAL	147	100.0	4,883	100.0	883	100.0	3,196	100.0

the majority of the redwares were storage vessels, John appears to have continued the family business established by his father. He also appears to have continued his father's preference for undecorated to minimally decorated imported fine wares. Abraham Fountain, on the other hand, unlike his father, overwhelmingly preferred imported fine wares. This preference may indicate a shift in Abraham's choice to express his wealth more through household and personal goods than through land, livestock, or structures.

A general pattern analysis was used to test whether these four households consumed a more diverse range of goods based on their locations and periods of occupation. Three broad categories were used: 1) tobacco pipes, 2) bottle glass, and 3) ceramics. The summary of this analysis in Table 7.2 does not indicate much of a difference in the diversity of goods among the households, but does show that proportions of items vary. Three of the four households had similarly high proportions of ceramics in relation to the rest of the assemblage, while the Abraham Fountain assemblage exhibited an almost equal distribution between ceramics and bottle glass. Whether this is an indicator of a change in his consumption pattern or the result of the archaeological testing scheme is unknown.

The assemblage associated with Henri Mouquin was not utilized to address this question because there are no comparable data in the region for his period of occupation (i.e., late nineteenth to early twentieth century). To date, no archaeological investigations have been performed on late eighteenth- to early nineteenth-century farmstead sites in the region. Archaeological investigations are currently being performed on late nineteenth- century farmsteads in upper New York State by Louis Berger & Associates. However, at the time this report went to press, the data were still in the process of analysis and could not be used for comparison with the data from the Mouquin household. Therefore, Henri Mouquin's assemblage could not be utilized to address this, or the following research question.

Research Question 2:

Was the consumer behavior of the occupants of the VanDeventer-Fountain Site similar to that defined for contemporaneous households in New York City?

Historical documentary evidence clearly indicates that Cornelius Fountain was a wealthy individual. Therefore, comparable wealthy urban households in New York City were used to examine this question. These consisted of the Van Voorhis household (1780-1790) and the households associated with Feature 48, a deep privy/well (cf. Louis Berger & Associates 1987). The association of the privy/well with only one household was not possible because the feature was located along a lot line. In addition, the Van Voorhis household represents a residential/commercial assemblage, as Van Voorhis lived at the location of his jewelry shop.

Table 7.3 indicates a difference in the variety of ceramics among the rural and urban households. Cornelius Fountain's assemblage was evenly divided between imported fine wares and domestic coarse wares, while the two urban households appeared to exhibit a preference for Chinese porcelains and imported fine wares over the remaining categories. In addition, differences were evident between the two urban households in their choices of ceramic wares. The majority of Feature 48's assemblage consisted of Chinese porcelains and imported fine wares (93%), while the Van Voorhis assemblage exhibited a wider diversity among the remaining wares. These differences may be due to the presence of commercial activities on the Van Voorhis house site. Whether Van Voorhis's commercial activities or other variables (i.e., household size and age, social requirements, choice of how to use one's wealth, etc.) affected the proportions in the remaining ceramic categories between the two assemblages is unknown. Clearly, these variables must be taken into account when comparing households.

Table 7.4 shows that the rural household, represented by Cornelius Fountain, did not exhibit a consumption pattern similar to the two urban households. This difference was in the proportion of ceramics to tobacco pipes and bottle glass. Fountain has an extremely high percentage of ceramics, while the two urban households display a more balanced proportion between ceramics and bottle glass. Van Voorhis's higher proportion of tobacco pipes over Feature 48 may be the result of the commercial activities related to his site. Therefore, when including this type of urban site in any artifact analysis or urban rural comparison, one must consider the commercial nature of the site.

Neither Abraham Fountain's (1810-1835) nor Henri Mouquin's (1875-1900) assemblages were utilized to address Research Question 2 since no comparable data were available for their respective periods.

Research Question 3:

Based on a review of the literature on Charleston, South Carolina, is the comparison between urban and rural sites in southern settings similar to or different from the similarities or variations observed in the Greater New York area?

The Charleston Museum has investigated several urban and rural sites in Charleston and the adjacent rural parishes. Zierden (1985) has suggested that the variation between urban and rural behavior should be viewed as a continuum rather than as a dichotomy. The same activities necessary for domestic life at a rural site were also necessary for life in the city. Therefore, Zierden postulates that many of the structures and activity areas found dispersed on a rural site would be packed into an urban lot. She has further argued that the country plantations may not have been as elaborate as the planters' town homes, where social competition

TABLE 7.3

COUNTS AND PROPORTIONS OF TOTAL CERAMICS
BY HOUSEHOLD FROM SELECTED RURAL AND URBAN SITES

	Cornelius Fountain (1786-1815)		Van Voorhis (1780-1790)		Feature 48* (ca. 1800)	
Ceramic Type	Count	Percent	Count	Percent	Count	Percent
Chinese Porcelain	-	-	375	14.7	380	16.5
Tin-enameled Earthenwares	-	-	204	8.0	17	0.7
Other Imported Fine Wares	65	50.4	1,546	60.8	1,760	76.5
Imported Coarse Wares	1	0.8	135	5.3	24	1.1
Domestic Coarse Wares	63	48.8	284	11.2	119	5.2
TOTAL	129	100.0	2,544	100.0	2,300	100.0

*Associated with the household(s) of Oliver Hull, and/or his sons; of Hugh Gaines; of Phillip Ten Eyck; of Richard Bowne; or possibly Calvin Baker.

TABLE 7.4

COUNTS AND PROPORTIONS OF TOTAL ARTIFACTS
BY HOUSEHOLD FROM SELECTED RURAL AND URBAN SITES

	Cornelius Fountain (1786-1815)		Van Voorhis (1780-1790)		Feature 48* (ca. 1800)	
Artifact Type	Count	Percent	Count	Percent	Count	Percent
Tobacco Pipes	-	-	300	6.6	36	1.0
Bottle Glass	18	12.2	1,725	37.7	1,260	35.0
Ceramics	129	87.8	2,544	55.7	2,300	64.0
TOTAL	147	100.0	4,569	100.0	3,596	100.0

*Associated with the household(s) of Oliver Hull, and/or his sons; of Hugh Gaines; of Phillip Ten Eyck; ;of Richard Bowne; or possibly Calvin Baker.

may have driven conspicuous consumption in architecture and furnishings as well as in dress and diet.

It is entirely possible that the dynamic that Zierden described in the South Carolina Low Country surrounding Charleston will not be replicated in this part of the Greater New York area. This may be due to the socioeconomic difference between the occupants of the VanDeventer-Fountain Site and the Low Country planters who maintained homes in Charleston as well as on their plantations. Occupants of the VanDeventer-Fountain Site were probably year-round residents. On the other hand, the continuum that Zierden has posited may, in fact, be specific to southern cities and their surrounding plantations, given the historical circumstances that resulted in an urban elite that was composed of the elite planters whose families were bound in a web of marriages.

At present, Zierden's database concerning the connection between the plantation and city is not large enough to test her assumptions. The same situation applies for the data from the VanDeventer-Fountain Site. The sample is too small to investigate her assumptions. Therefore, the research question cannot be addressed in this study.

Research Question 4:

Does the relationship between the dwelling and the dependencies, outbuildings, and barns reflect, in the late eighteenth and early nineteenth centuries, purely functional considerations; or does the position of the house, relative to the setting, evidence formal architectural considerations?

Historical and archaeological investigations did not provide enough information to adequately address this question. The relationship between the two delineated outbuildings (Features 2 and 5) and the house could not be determined because the date of construction and the function of the outbuildings were unknown. This seriously inhibited the examination of the farm's spatial layout over time, since none of the outbuildings could be linked to a particular period in the farm's history. The inability to determine the function and date of an outbuilding through historical and archaeological investigations appears to be a very common occurrence on intensively utilized rural sites of long term occupation. This is not surprising, since subsequent occupants of a farmstead usually will utilize an outbuilding for whatever purposes suit their needs, regardless of what it had been used for by the previous occupants. Such reuse may mask or obliterate an outbuilding's original function (cf. Louis Berger & Associates, Inc. n.d.).

Impacts from modern military construction activities were an additional problem in determining farm layout and building relationships. The construction of a barrack and houses just north of

the farmhouse, and the removal of a large area of land for an athletic field to the southwest, may have destroyed a number of associated outbuildings (i.e., barn, corncrib, smokehouse, etc.). In fact, a barn was never located during archaeological investigations, although the historical documentation alludes to one. The New York State Census of 1835 reported that Mary Guyon Fountain (Abraham's widow) possessed 115 acres of improved land, 14 neat cattle, and 3 horses (New York State 1835). The presence of cattle and horses indicates that a barn had to have existed on the farm at one time. It appears that military activities have obliterated any trace of them.

Historical and archaeological evidence did not indicate whether the siting for the house is based on functional or formal architectural considerations. The house may have been constructed atop a rise and oriented toward the bay simply because it provided good drainage and an excellent view.

Research Question 5:

What is the evidence of the functional transformation of the site from a farm to a seasonal residence for urban dwellers?

Historical documentation suggested that the house was used as a seasonal residence by Henri Mouquin between 1875 and 1884. City directory entries for Mouquin list his residence as New York City during that period. However, the first reference to his residence as being located on Staten Island occurred in the 1885 directory. Mouquin remained listed at a Staten Island address through 1902, when the property was sold to the Army. Therefore, the farm served as a seasonal residence for a short period of time before Mouquin moved in on a permanent basis.

Archaeological evidence clearly indicates a change in the physical makeup of the house during the late eighteenth to early nineteenth centuries. Under Cornelius Fountain's tenure the house contained of a 24 x 28 foot foundation with a deep basement, and a second structure (18 x 21 feet) with a deep basement was situated 20 feet northeast. He later expanded the house core area to a 35 x 50 foot structure. This expansion appears to have coincided with the growth of his household from 8 in 1790 to 17 by 1800. Subsequent heirs expanded the core area of the house by adding extensions east and west of the original structure between 1827 and 1854. It appears that between 1854 and 1907/08 (the latter date being when the house was razed) no major changes were made to the structure. Evidence for this can be seen in comparing an 1854 bird's eye view of the house (see Figure 3.4) with a circa 1900 photograph (see Plate 3.1). Both appear identical, with no structural changes evident. Therefore, the transformation from farm to villa around 1875 is not evident from the structural remains of the house. The two outbuildings were not useful in addressing this research topic

because their function and the period of their construction could not be determined from historical or archaeological information.

The delineation of four discrete refuse disposal patterns across the farmstead provided data on the existence of activity areas within the site. However, due to the fragmentary nature of the assemblage, it could not be determined what types of activities took place in these areas. The area north and adjacent to the house was the most heavily utilized extant section of the farmstead. It was in this area that a mixed deposit of material was recovered, which represented all periods of occupation (1786 to 1901). However, the majority of material dated to the occupation of Cornelius (1786 to 1815), Abraham (1815 to 1835), and James (1835 to 1845) Fountain, while very little is associated with the later households. The small amount of post-1845 artifacts indicates a shift in refuse disposal away from the house area and coincides with the change in the use of the property from a farm to a villa. It should be noted that in 1845-1846, the property was divided into four lots, with the house contained in a 6.87 acre parcel.

The shift in disposal patterns away from the areas adjacent to the house was very evident during Henri Mouquin's occupation. Mouquin utilized the abandoned brick shaft (Feature 5, see Figure 5.2) for refuse disposal, while Cornelius Fountain disposed of his trash in the west and north yards and Abraham and James Fountain utilized the north and southeast yards. The vast majority (approximately 95%) of the artifactual material associated with the Mouquin household was recovered from Feature 5. The remainder of Mouquin's assemblage was divided between the demolition debris and north yard area, indicating that Mouquin made a conscious effort to dispose of his refuse in an area hidden from public view (i.e., the brick shaft).

D. CONCLUSIONS

The previous discussion has summarized the findings of the data retrieval program at the VanDeventer-Fountain Site in light of specific research questions. The historical and archaeological investigations at the site have added information on the nature of rural versus urban consumer behavior. Keeping in mind that only one rural (Cornelius Fountain) and two urban (Van Voorhis and Feature 48) assemblages were used to explore this issue, preliminary findings suggest that there is an urban/rural dichotomy in the quality of ceramics used. These differences may have been influenced by a number of variables. These variables include access to the marketplace, purchasing second-hand ceramics, social requirements (i.e., the need to entertain), social standing (which can be linked to the previous variable), and choices in how to use one's wealth, which in a rural setting may have focused on the purchasing of land, equipment, slaves, and perishable items. It appears that Cornelius Fountain did not choose to make expensive

ceramic purchases, but rather placed his wealth in land, slaves, and/or farm structures. This choice was probably voluntary for Cornelius, since his economic standing and access to the marketplace did not appear to influence his ceramic purchases.

The VanDeventer-Fountain Site also has provided data on the transformation of a farmstead into a suburban villa for the wealthy and the manner in which this transformation is reflected in the material remains of Henri Mouquin's household. This assemblage has added to the database for future research on comparing late nineteenth-century rural sites to their urban counterparts.

A very apparent outcome of these investigations was to call attention to the difficulty in defining the spatial layout of a farmstead over time. A critical factor in addressing this issue is the ability to determine the function and date of the outbuildings. Once function and date have been established, the outbuildings can be linked to a particular period in the farm's history. Then the spatial arrangement of the farm over time can be determined. Historical and archaeological investigations were not able to define the function or date the construction of the two outbuildings on the VanDeventer-Fountain Site. Therefore the spatial relationship between these two structures and the dwelling could not be addressed in this study.

As previously mentioned, this research issue has been a problem when investigating rural sites of long-term occupation. Cultural resource investigations on farmstead sites within a 5,000-acre area in upstate New York recognized the same dilemma (cf. Louis Berger & Associates n.d.). Even when informants provided data on the functions of outbuildings within a particular farmstead, the information had to be used cautiously since it only provided the outbuilding's most recent function prior to its abandonment. Its original function may have been completely different. In addition, reuse of outbuildings tends to mask or obliterate their original function. Therefore, changes in a farmstead cannot be studied by investigating a site of continuous long-term occupation. Therefore, Louis Berger & Associates recommends a re-evaluation of current approaches to the study of intensively occupied nineteenth-century farmsteads. Current research issues do not appear to be appropriate to the available database in the Greater New York City area. Only by expanding this database and positing a new research framework can future archaeological research contribute to our understanding of the farmstead's place in the historical period and justify the continued study of farmsteads.

The prehistoric remains investigated at the VanDeventer-Fountain Site represent intermittent occupation of the site during the Woodland Period, between circa 500 BC and 1500 AD. The assemblage is characteristic of limited lithic tool production and maintenance and hunting and gathering activities. There are no apparent

difference in the function of the site through time. Because of the mixed and/or features, these prehistoric components have limited research value. The Woodland lithic and ceramic types identified at this site location are consistent with the general occupation history of Staten Island; unfortunately, these deposits do not offer any evidence to refine chronological or settlement pattern studies.

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