The Archaeological Investigation of the City Hall Park Site, Manhattan

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Prepared for:
The New York City
Department of General Services

June 1990

THE ARCHAEOLOGICAL INVESTIGATION OF THE CITY HALL PARK SITE, MANHATTAN

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In conclusion we wish to thank everyone involved with this project and we appreciate the opportunity to demonstrate the potential and the capabilities of the City Archaeology Program.

EXECUTIVE SUMMARY

The 1989 archaeological investigation within City Hall Park has clearly demonstrated that the land area between City Hall and the Tweed Court House building is one of high archaeological potential. The fieldwork uncovered the buried remains of an eighteenth-century building. The archaeological, architectural, and documentary evidence all indicate that this building was the kitchen for New York City's first municipal Almshouse (1736-1797).

In addition, this excavation in City Hall Park demonstrates the importance of identifying, assessing and preserving New York's historic resources. In 1989, the Department of General Services asked the Landmarks Preservation Commission's Archaeology Program to undertake the archaeological excavation of City Hall Park, prior to the installation of a new utility corridor between City Hall and the Tweed Court House. The two agencies planned a joint project which was funded by the Department of General Services. The fieldwork was carried out by the Commission's Archaeology Program in conjunction with the Brooklyn College Summer Archaeological Field School. Lab work and this report on the findings were prepared by the City Archaeology Program.

This report documents the project and provides recommendations to assist the City of New York in responsibly performing its capital work while protecting archaeological artifacts.

CHAPTER ONE: INTRODUCTION

Sherene Baugher

CHAPTER ONE: INTRODUCTION

This report presents the results of the archaeological excavation in City Hall Park, Manhattan which unearthed material associated with New York City's first municipal Almshouse (1736-1797). Only two other known almshouses, the 1696 Almshouse in Albany and the 1807 one in Philadelphia have been excavated by archaeologists (Huey 1987; Weber 1988; Clio Group, Inc. 1989). Fieldwork for this project was conducted from June 14 to July 24, 1989; this work was undertaken by the City Archaeology Program at the New York City Landmarks Preservation Commission in conjunction with the Brooklyn College Summer Archaeological Field School. Laboratory work and report preparation was funded by a grant from the New York City Department of General Services to the New York Landmarks Preservation Foundation (the Landmarks Preservation Commission's non-profit foundation) and the work was done by the City Archaeology Program.

This report contains background information about the City Hall Park site (see Figure 1:1), including the field testing methodology, the results of the excavation, our interpretations and conclusions.

Background

In 1988 the New York City Department of General Services (DGS) undertook preliminary design work for a utility corridor in City Hall Park, Manhattan (Block 122, Lot 1). The project area was located south of Chambers Street and east of Broadway between City Hall and Tweed Court House (see Figure 1:2). The proposed utility corridor will be approximately 130 feet long, 6 feet in diameter and the lowest point of

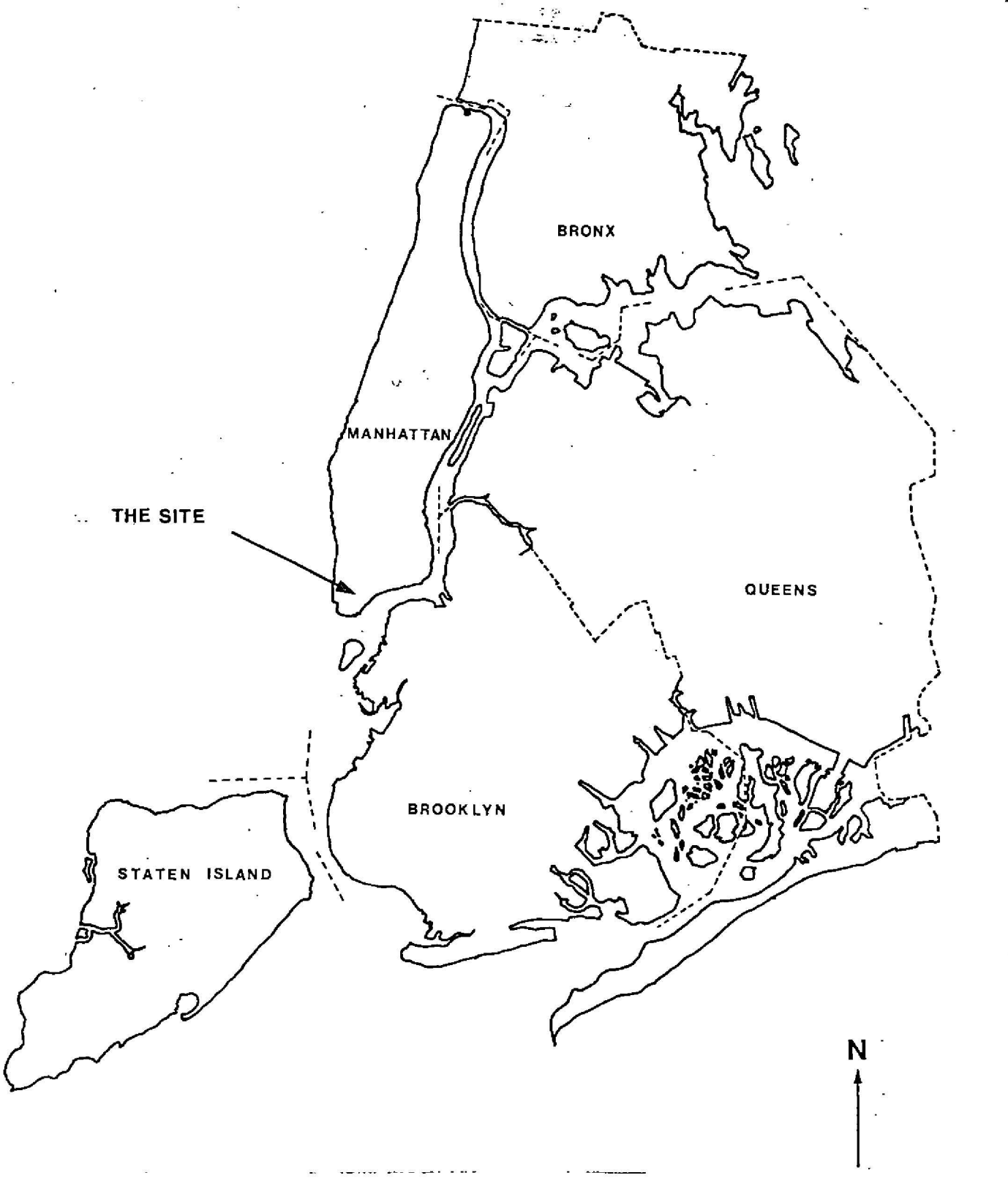


Figure 1:1 Map indicating the location within New York City of the City Hall Park archaeological site.

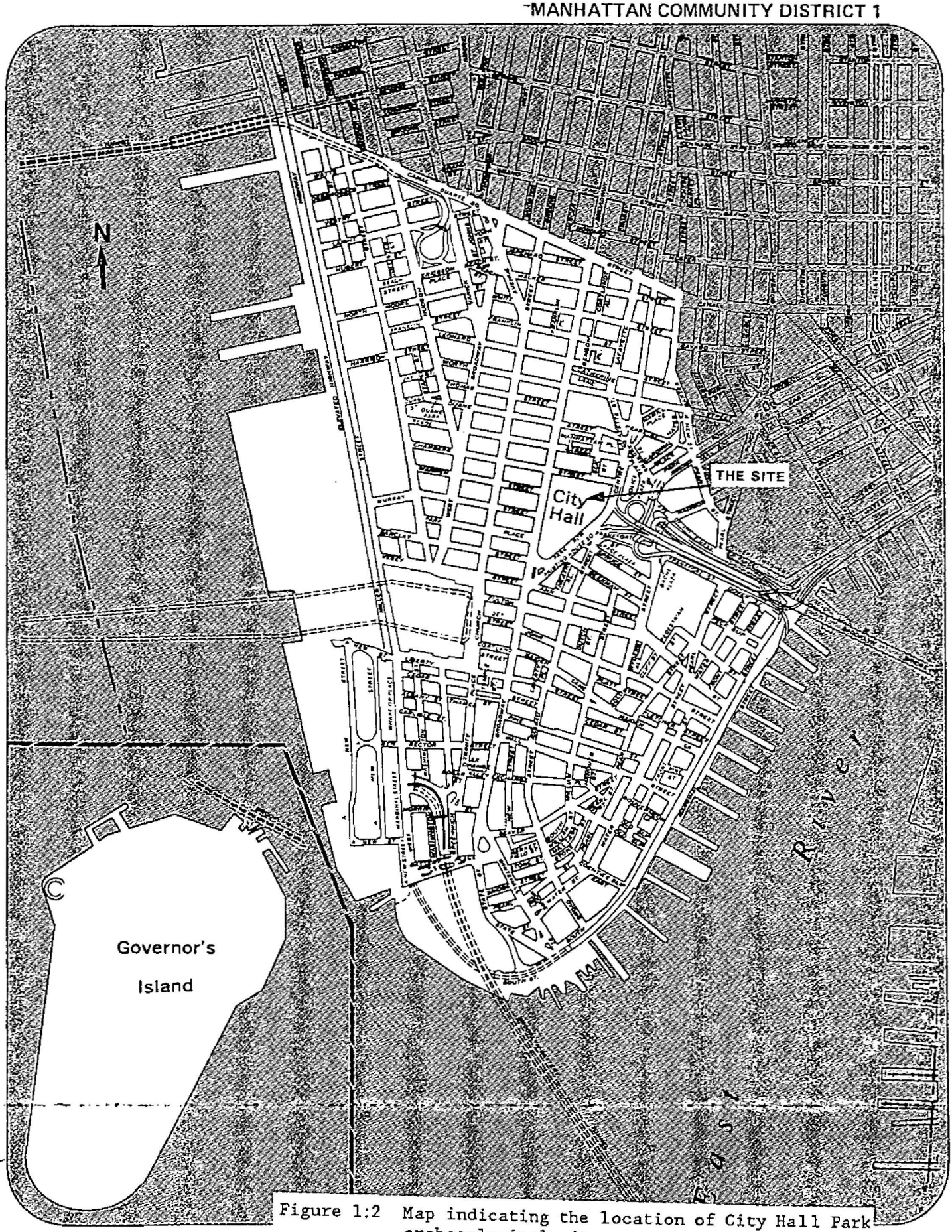


Figure 1:2 Map indicating the location of City Hall Park archaeological site.

the new installation will be located at 13 1/2 feet below ground level (see Figure 1:3).

DGS requested that the Landmarks Preservation Commission (LPC) evaluate the agency's proposed plans for City Hall Park, a designated New York City landmark and a potentially sensitive archaeological area.

The two extant buildings in the Park, City Hall and Tweed Court House, are both designated New York City Landmarks. City Hall, completed in 1811, was designed by Joseph F. Mangin, who worked with John McComb, Jr. It was built in "the Federal Style of architecture with considerable French influence" (Landmarks Preservation Commission designation report 1966:1, LP-0080). In 1954, the original Massachusetts marble facade and brownstone north facade and basement level of the exterior of the City Hall was removed and replaced with Missouri red granite for the basement level and Alabama limestone for the entire upper structure (Zurmuhlen 1956:17). Also, the original, steep, three-sided staircase at the rear of City Hall was replaced by "one with steps on two sides equipped with wrought iron handrails of period character" (Zurmuhlen 1956:25). On July 12, 1956 the rehabilitation work was completed and City Hall was rededicated (Neufeld 1956).

Tweed Court House, built between 1861 and 1881, was designed by architects John Kellum and Leopold Eidlitz and combined mid-nineteenth century commercial Italianate style with the later Victorian medievalism (Landmarks Preservation Commission designation report 1984: 2, LP-1437).

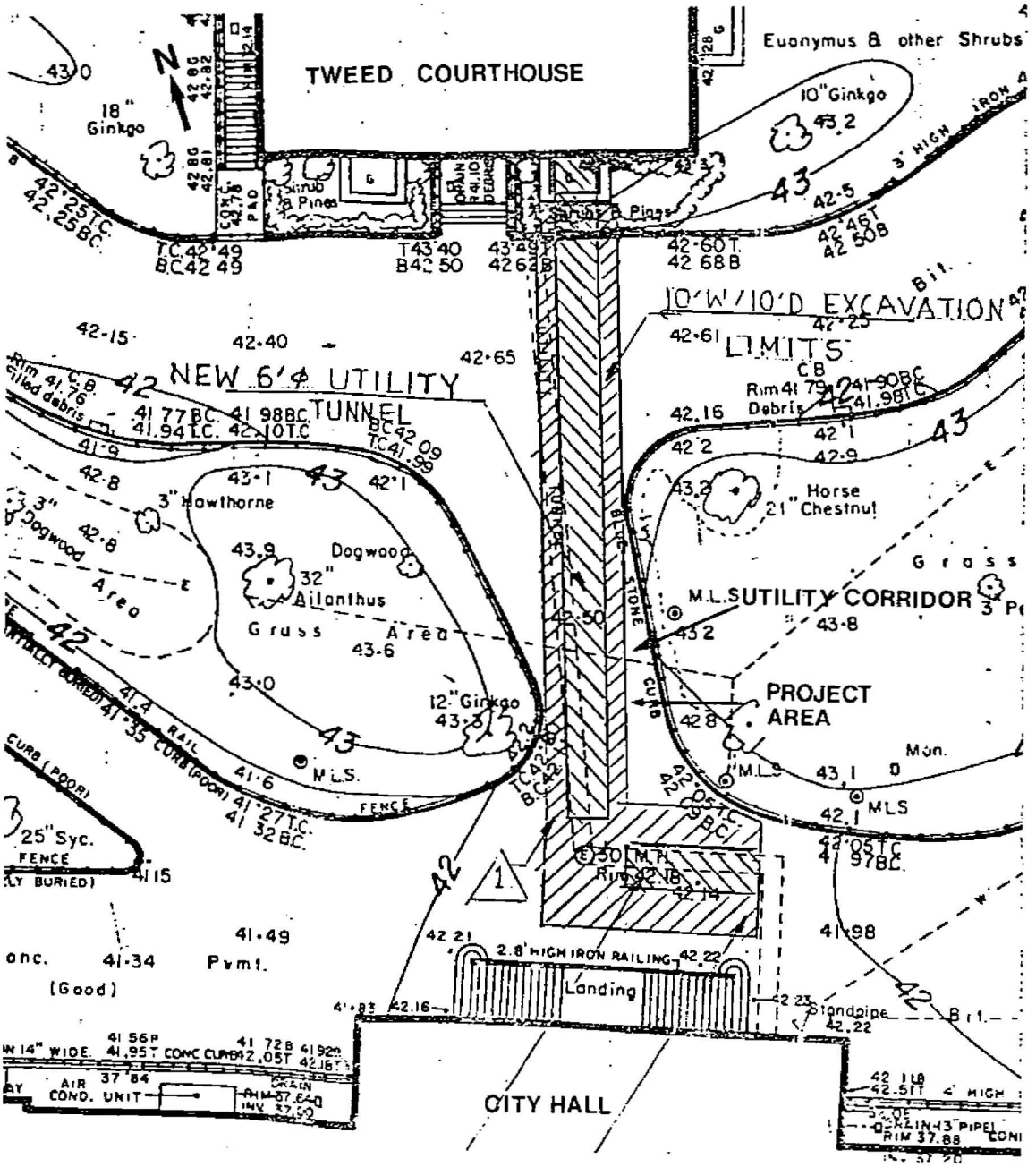


Figure 1:3 Department of General Services map locating the route of the proposed utility corridor/tunnel between City Hall and Tweed Court House.

In addition to the two extant buildings, there were at least eight other major structures on the northern portion of City Hall Park during the past two hundred and fifty years. In 1982, in their archaeological predictive model and maps for Lower Manhattan, the City Archaeology Program noted that the northern portion of City Hall Park contained the following eighteenth and nineteenth-century buildings:

1) the first municipal Almshouse, 1736-1797;
2) the Upper Barracks, 1757-1790;
3) the Bridewell, a reformatory and prison, 1775-1838;
4) the new Gaol, 1759-1830, reconstructed in 1830 to serve as a Hall of Records and Register's Office, demolished in 1903;
5) the second Almshouse, 1797-1815, later used as a cultural center housing at various times the New-York Historical Society and the predecessor of the American Museum of Natural History, demolished in 1857;
6) the City Court House, 1852-1928;
7) the Powder Magazine, 1747-1789;
8) the Rotunda, 1818-1870 (Baugher-Perlin et al. 1982, Appendices 1, 2, 11, and 15).

The City Archaeology Program identified the project site as having the potential to contain archaeological material associated with the first municipal Almshouse (1736-1797) and/or the Upper Barracks (1757-1790) and possibly with other late eighteenth century and early nineteenth-century buildings in the northern portion of City Hall Park (see Figure 1:4). The Almshouse was located on what is now the site of City Hall and the Barracks was located on the site of or immediately north of Tweed Court House. This information was sent to DGS and an

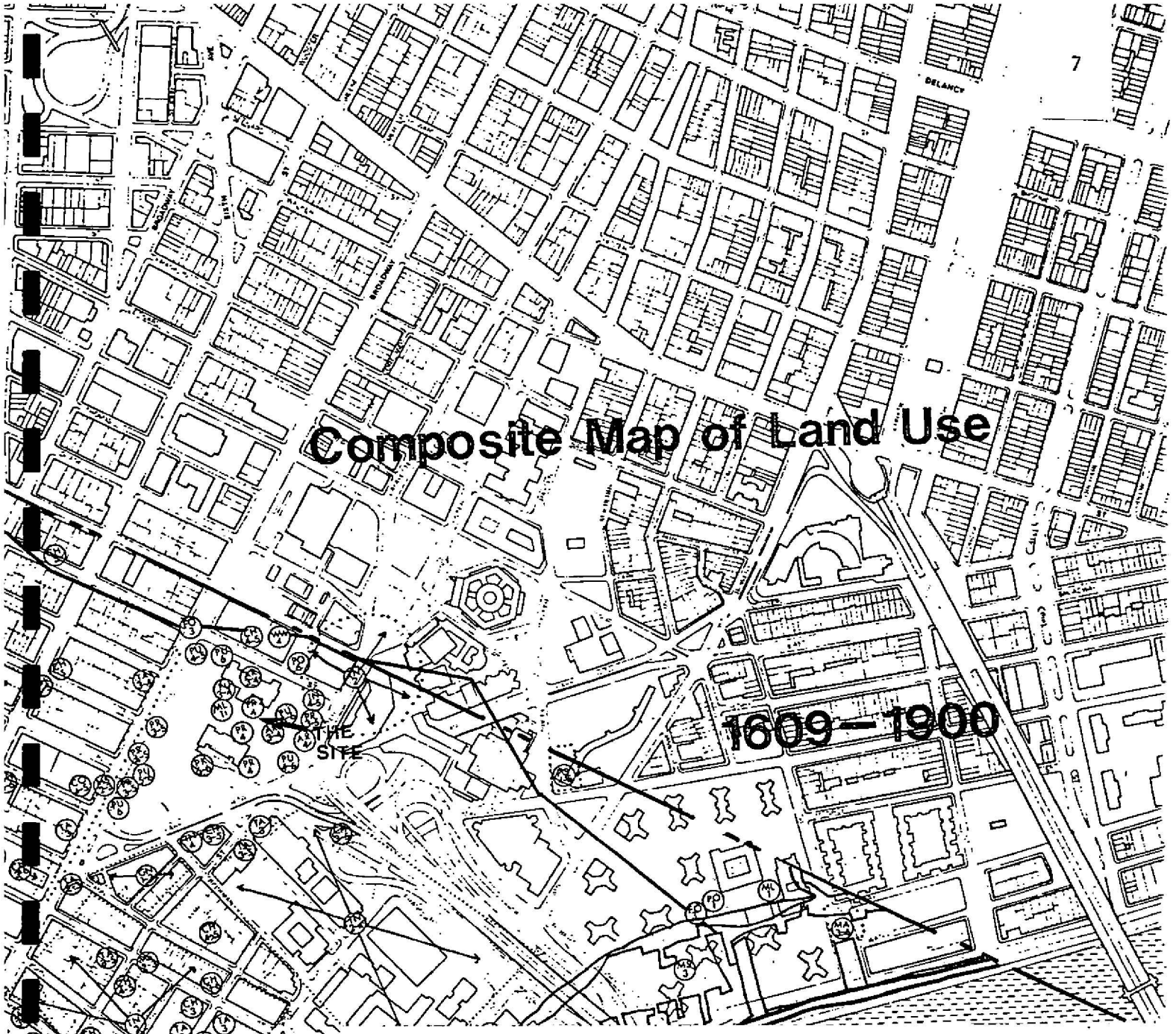
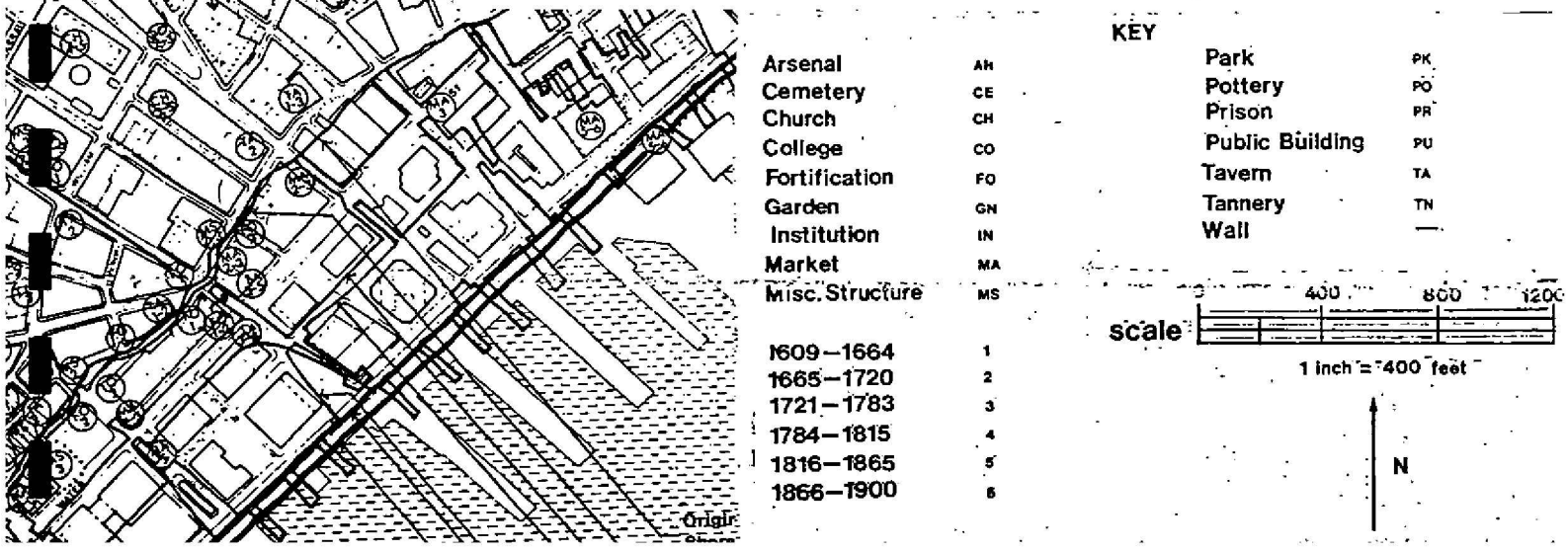


Figure 1:4 A segment of a NYC Landmarks Preservation Commission Archaeological Planning Map showing the location of former buildings on the northern portion of City Hall Park.



archaeological project initiated. This project did not require an environmental review.

Previous Archaeological Work

The Department of General Services contracted with a private consultant to undertake a documentary archaeological study to determine if the site might contain potential archaeological deposits. A report was submitted to DGS in November 1988 which summarized the history of the major structures within the Park including City Hall and Tweed Court House. The report evaluated information from historic maps, documentary records, and soil boring logs and noted that there were three to five feet of fill on the project site. The consultants concluded that the area of the proposed utility corridor "may have been minimally impacted, if not well preserved, by the addition of subsequent fill and landscaping which brought the topography to its present elevation" (Grossman and Associates, Inc. 1988:12). The consultants recommended archaeological field testing to determine the presence or absence of an eighteenth-century ground surface.

At this point, the Department of General Services requested that the LPC evaluate the consultant's report and recommendations for field testing prepared by the consultants. Suggestions were made by LPC to modify the field testing strategy and fieldwork began in March 1989. The consultants placed a one-by-two-meter trench in a walkway between two grass-covered knolls to minimize inconvenience to pedestrians and vehicular traffic along the primary east-west park paths between City Hall and Tweed Court House. The excavation trench was placed on the western side of the proposed utility corridor. In addition, the

consultant placed three shovel tests along the east side of the proposed corridor.

A section of a brownstone wall was uncovered in the trench. The consultant received permission from DGS to widen the trench as part of the initial field testing in order to obtain more information regarding the wall. The wall appeared to be part of an eighteenth-century building. The consultants then recommended that archaeological mitigation work be undertaken at this site.

At the end of this field testing, the site was backfilled and closed. The artifacts were taken to the consultant's laboratory. The field and laboratory data from the field testing has not been included in our report as the consultant's report is not available.

The Current Project

Following the completion of the initial field testing, the Department of General Services asked the City Archaeology Program and Brooklyn College (Brooklyn College is a division of City University) to perform the mitigation fieldwork. The planning and subsequent completion of the mitigation work was carried out by the three city agencies/institutions working together to preserve the City's cultural resources.

The City Hall Park excavations were conducted to determine the function and age of the building foundation uncovered during the preliminary testing program. In addition, questions about the architecture of the buried building were addressed in the research design for the site.

The excavation uncovered a total of 6,903 artifacts, including ceramics, glass, smoking pipes, and metal material. In addition, 4,514 faunal remains were unearthed. Artifacts associated with the buried foundation dated from the 1740s to the 1790s. The eighteenth-century artifact assemblage was a domestic deposit and we conclude that this building was associated with New York City's first municipal Almshouse (see Chapters Four, Five and Six). The Almshouse, located in this area, operated from 1736 to 1797. The site also contained material associated with the landscaping of City Hall Park in the late nineteenth and twentieth centuries and the construction of the rear steps to City Hall, circa 1810.

The site yielded almost one thousand artifacts dating from the 1740s through the 1790s which were associated with the inhabitants of the Almshouse. The assemblage contains a wide variety of objects including broken dishes, glass, clay smoking pipes, buttons, and even food remains, such as beef bones and chicken bones. The artifacts provided information about the people who lived at the Almshouse. The archaeologists could link the artifactual deposits with the known inhabitants of the site because the Common Council of the City of New York kept records on aspects of life at the Almshouse, including the names of residents. The artifacts also provided data on the architectural details of the Almshouse.

The artifacts, copies of this report, field notes, and catalogue sheets could be housed at the Department of General Services. Alternatively, the artifacts, copies of the report, etc., could be donated to an appropriate, permanent, and safe repository such as the

South Street Seaport Museum. It is hoped that this information can be used for educational and interpretative programs of City Hall Park.

CHAPTER TWO: EXCAVATION METHODS AND PROCEDURES

Sherene Baugher

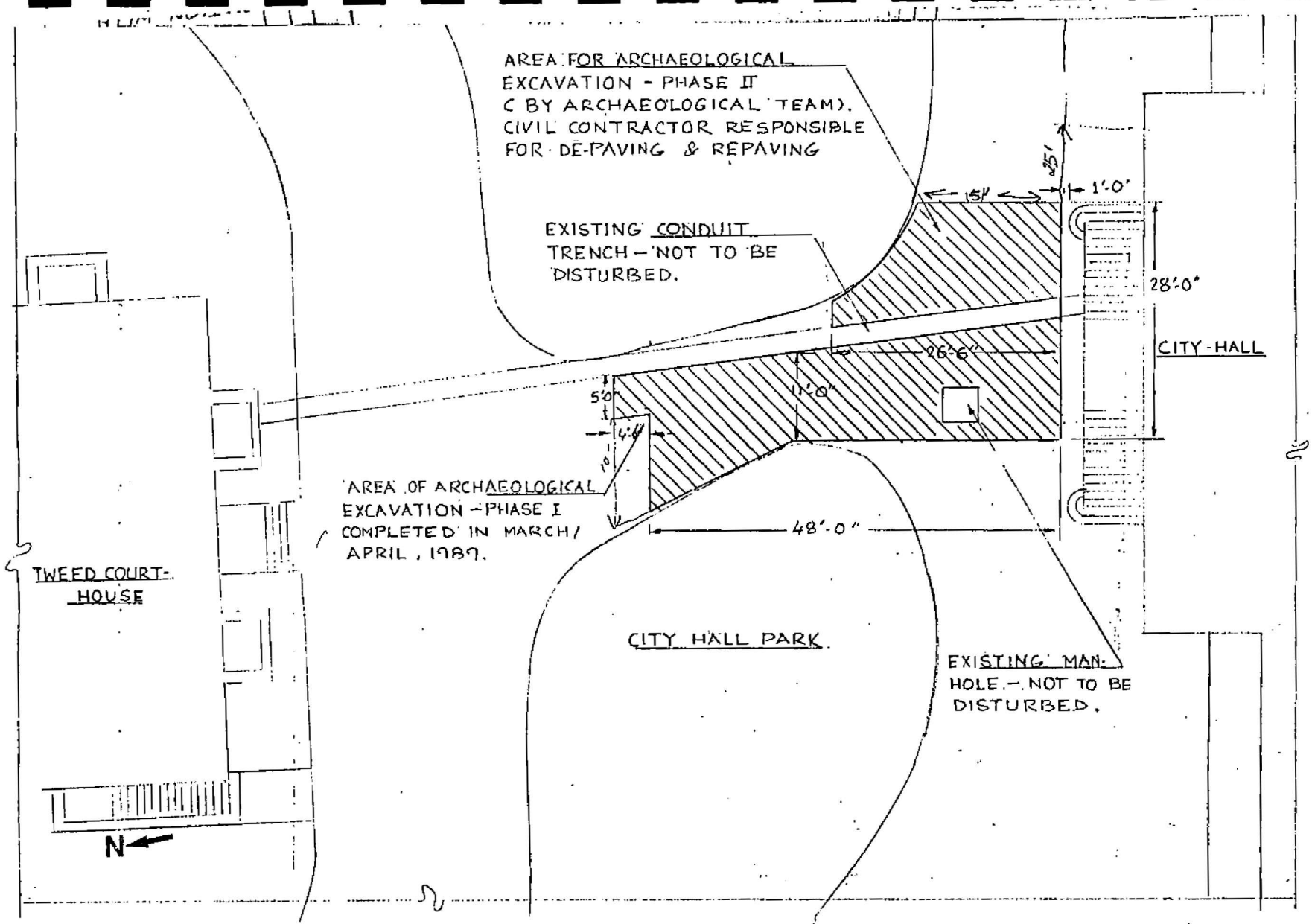
CHAPTER TWO: EXCAVATION METHODS AND PROCEDURES

An archaeological excavation was conducted from June 14 through July 24, 1989. During June, the project was jointly directed by Dr. Sherene Baugher, Director of the City Archaeology Program, and Doctors Arthur Bankoff and Frederick Winter of Brooklyn College; during July Dr. Baugher and Edward J. Lenik, both of the City Archaeology Program, co-directed the dig. The laboratory directors were Judith Guston and Diane Dallal, the assistant archaeologist was Margaret Tamulonis, and the draftsperson was Victor Buchli. During June, the field crew was composed primarily of Brooklyn College students with a few interns and volunteers from the City Archaeology Program. The Brooklyn College students undertook this work as an introductory course in field methodology. In July professional archaeologists from the City Archaeology Program worked with interns and dedicated volunteers (many of whom had been on other City Archaeology projects). Inexperienced volunteers were paired with trained crew members.

Excavation Procedures

The Department of General Services hired a building contractor who removed all of the black top/asphalt from the site prior to the commencement of the excavation (see Figure 2:1).

A grid pattern was laid out over the site on June 14--the first day of the dig. Twenty-seven squares, each five feet by five feet, were placed in a north-south direction (see Figure 2:2).



PART-PLAN OF CITY HALL PARK

SCALE : 3/32" = 1'-0"

Figure 2:1 Department of General Services map depicting both the area excavated in March-April 1989 and the area of the mitigation excavation.

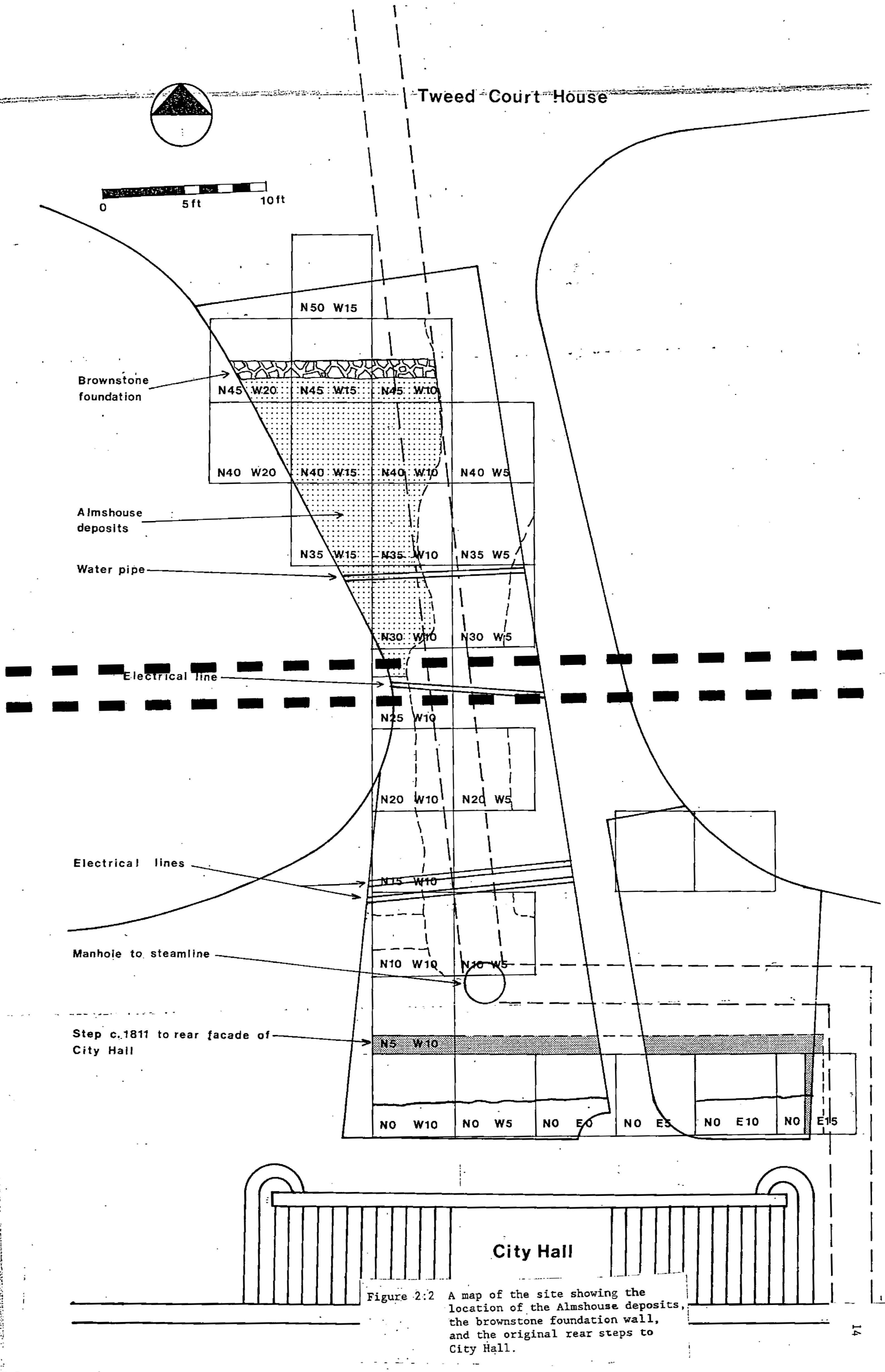


Figure 2:2 A map of the site showing the location of the Almshouse deposits, the brownstone foundation wall, and the original rear steps to City Hall.

Trowels were the primary excavation tools although shovels were used to remove backdirt, and in a few instances hand picks were used. All excavated soil was sifted through one-quarter-inch mesh screens. Artifacts found were placed in bags with the provenience number on each bag. Separate bags were used for each soil layer in each square.

The squares were excavated by removing stratigraphic soil layers from the surface down to natural, sterile subsoil. However, at times a square was divided and initially only a portion of the square was excavated to obtain preliminary data on the stratigraphy and the archaeological deposits. Later the square was excavated in its entirety. The average depth for the excavated squares was four feet and the deepest test was six and one-half feet below current ground level.

The term "unit" was used in distingushing and describing individual excavation levels and should be regarded as synonymous with the term soil "level" used in historical archaeology. The units/levels were labelled with consecutive numbers.

Stratigraphy

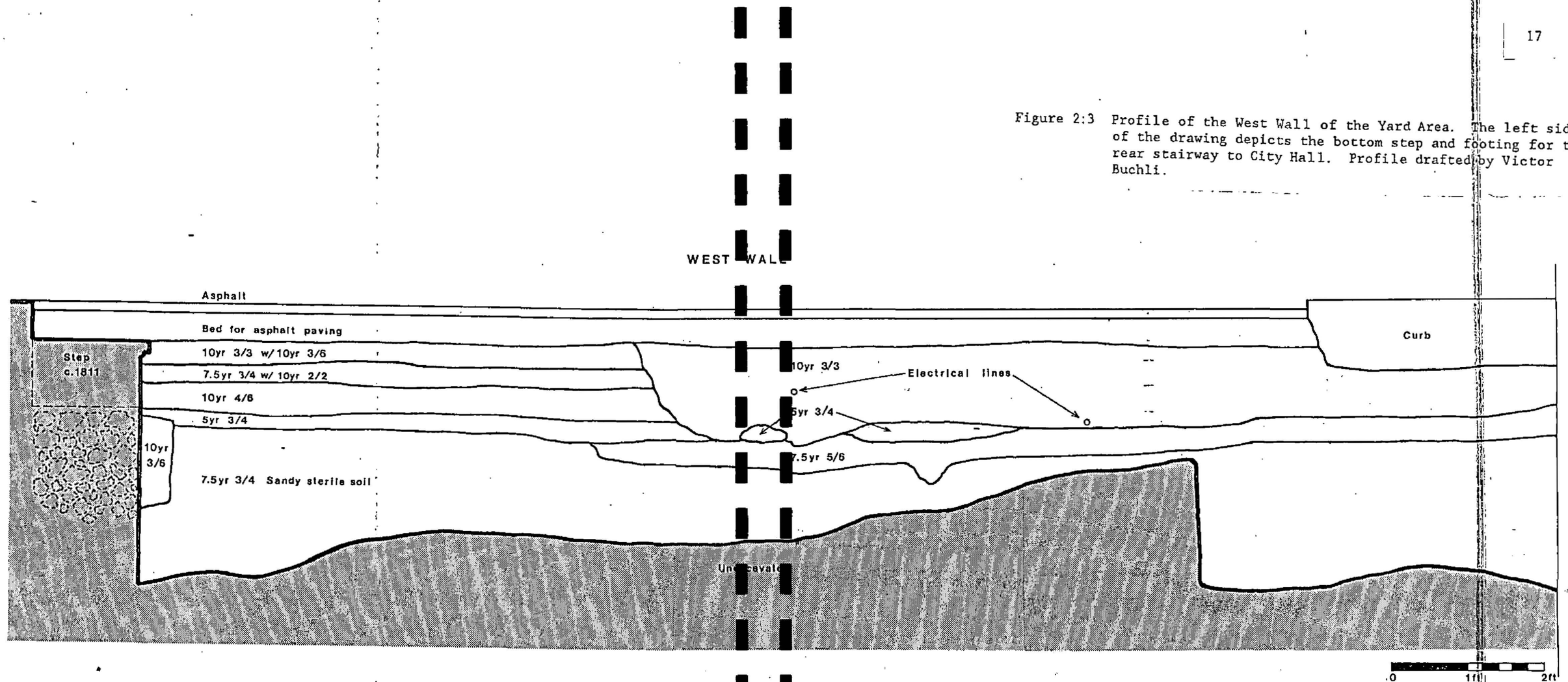
There were some similarities and differences in soil stratigraphy from square to square as a result of landscape changes and utility line intrusions. In the laboratory, the artifacts associated with each context (i.e., Almshouse, City Hall Steps, or yard area) were studied along with the data from the soil profiles in order to interpret these deposits. (Appendix A is a summary of all soil levels/units in all the squares. Appendix B is a summary of the diagnostic levels/units.)

In the yard area sterile soil (without any cultural material) was a red brown sandy soil (Munsell color number: 7.5 YR 3/4) and was the same type of soil found in all the excavation squares throughout the site (see Figure 2:3). In the area of the yard, the sterile soil was generally encountered at eighteen inches below current ground level. Above the sterile soil was a yellow-brown clay that was approximately one to six inches thick (Munsell color: 7.5 Yr 5/6). Artifact analysis indicates this clay stratum contained a mixed deposit of eighteenth and nineteenth-century artifacts. Thus, an intact eighteenth century ground surface was not present in this area. In the twelve inches above the clay, there were mixed deposits that differed from square to square.

Intrusions

An 1890s steam line trench connected City Hall with Tweed Court House. Measuring eight feet deep and cutting into the Almshouse, this trench disturbed the archaeological deposits in the following squares: N10 W5, N10 W10, N15 W10, N20 W5, N20 W10, N25 W10, N30 W5, N35 W5 and N40 W5. In 1984 the Department of General Services installed new electric conduits between City Hall and Tweed Court House; this area was not excavated but the trench for this utility line did have an adverse impact on the eastern portions of squares N10 W5, N20 W5, N30 W5, N35 W5 and N40 W5. Two non-functioning early twentieth-century electric lines were uncovered; the pipes were one and one-half inches in diameter. A base of clay was laid before the lines were installed. This utility construction work disturbed all the deposits in squares N15 E10, N15 E5 and N15 W10. An inactive twentieth-century electric

Figure 2:3 Profile of the West Wall of the Yard Area. The left side of the drawing depicts the bottom step and footing for the rear stairway to City Hall. Profile drafted by Victor Buchli.



pipe was discovered in square N25 W10; it was located eight inches below current grade.

A 1904 water pipe was found at the bottom of square N35 W10 along the northern border of the square. The water pipe was six inches in diameter. The trench cut into the Almshouse near its southern end and ran parallel to the southern wall. Based on the archaeological deposits, it appears that the trench was dug, the water pipe was laid, and the trench was backfilled. The material in the trench was similiar in composition to the general Almshouse demolition debris--that is, artifacts mixed with bricks, mortar, and plaster.

The Almshouse

The following squares were associated with the Almshouse deposits: N30 W10, N35 W10/15, N40 W10, N40 W15, N40 W20, and N45 W20. The project map (see Figure 2:2) and summary of the diagnostic levels (see Appendix 2) indicate that only parts of these squares were associated with the Almshouse. The 1890s steam line trench intruded into the eastern section of some of the squares. The first foot of deposits contained a mixture of eighteenth and nineteenth-century artifacts. A red brown soil lay over the Almshouse deposits. The Almshouse deposits were generally three feet thick and were comprised of building demolition rubble (brick and mortar) and artifacts, e.g., ceramics, glass, and metal (see Figure 2:4). The first two to two and one-half feet contained remnants of brick walls, loose brick, mortar, plaster, and assorted artifacts including ceramics, glass, clay smoking pipes, and faunal material. Below this deposit was a six- to twelve-inch layer of loose plaster which contained artifacts (see Figure 2:5). Underneath the plaster stratum was a compacted earthen floor (Munsell

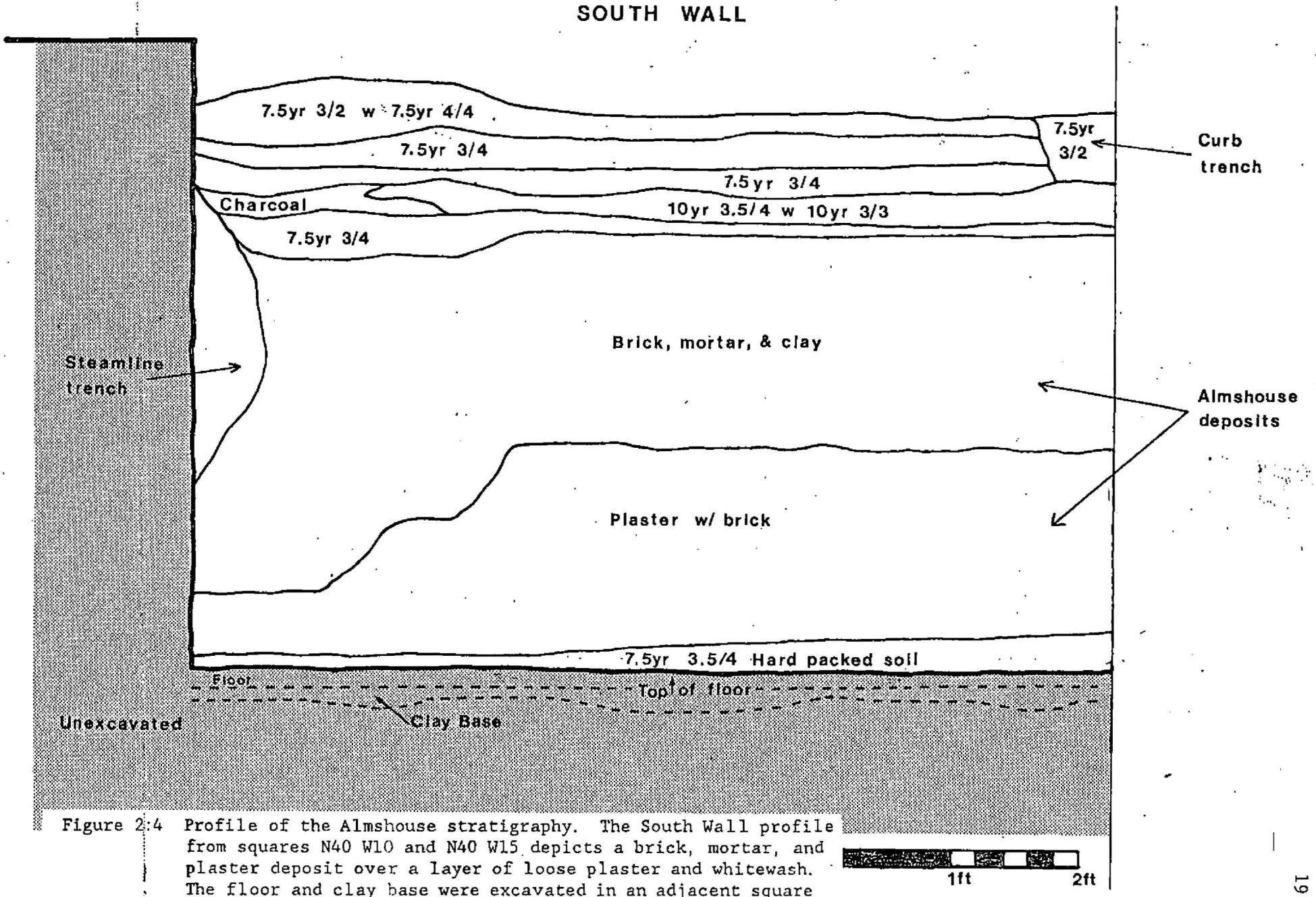


Figure 2.4 Profile of the Almshouse stratigraphy. The South Wall profile from squares N40 W10 and N40 W15 depicts a brick, mortar, and plaster deposit over a layer of loose plaster and whitewash. The floor and clay base were excavated in an adjacent square but their locations are depicted with a dotted line on this profile.

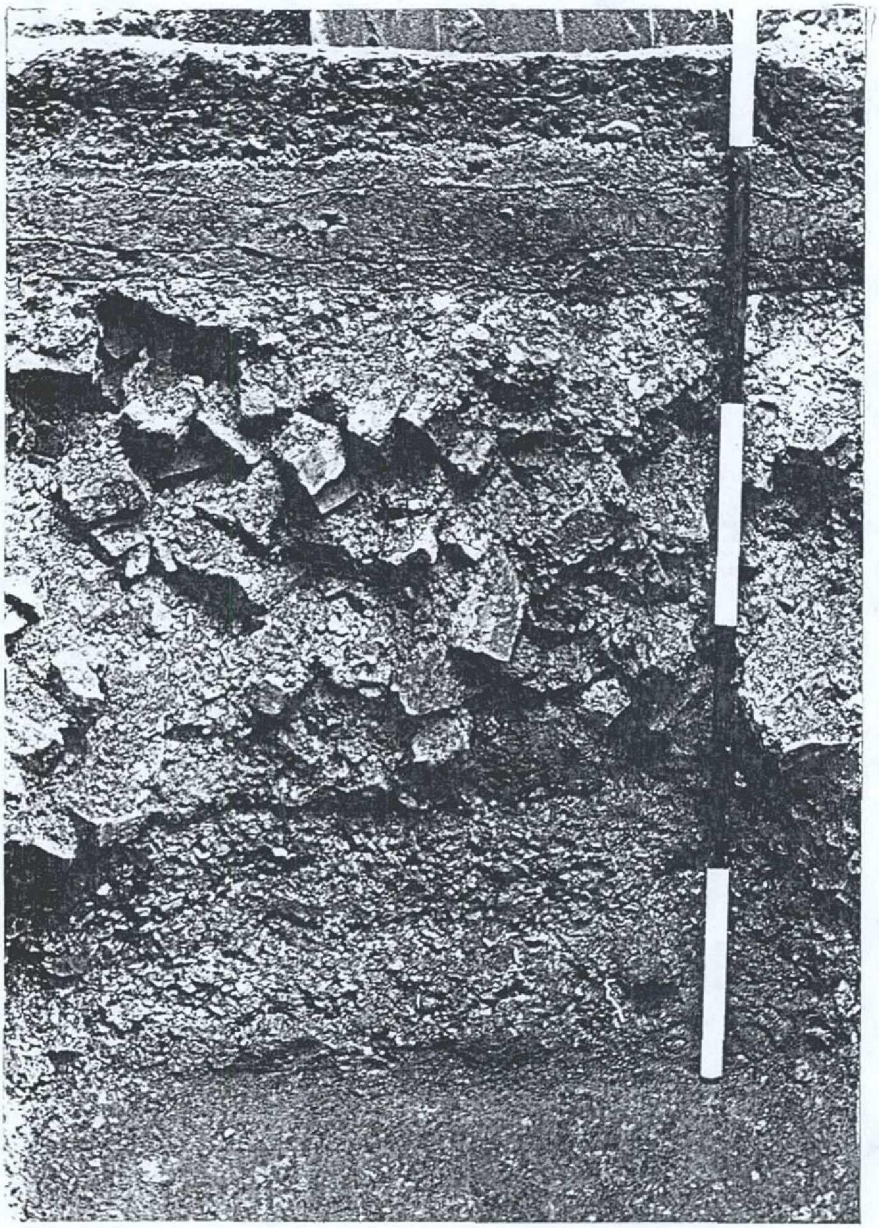


Figure 2:5 Photograph of the Almshouse stratigraphy. The south wall profile from square N40 W15 shows the loose brick, mortar, and plaster deposit over a layer of loose plaster and whitewash (Photo: Arthur Bankoff).

color number: 10 YR 3/4). Based on observations made in the field, the floor appeared to be mortared. However, examination of specimens in the laboratory showed that it was a compacted earthen floor with a high lime content. Below the floor was a two to four inch base of yellow clay (Munsell color number: 7.5 YR 5/6). Underneath the clay was sterile sand (Munsell color number: 7.5 YR 3/4).

The clay base underneath the compacted earthen floor also extended under the brownstone foundation (see Figure 2:6). When a comparison was made between the soil stratigraphy outside the Almshouse (see Figure 2:3) and within the Almshouse it is clear that the clay base was not a natural deposit at this level. The clay appeared to be used as a base for both the floor and the foundation wall.

Within the building debris were five large segments of intact brick wall ranging in size between twenty-four inches by eighteen inches by fourteen inches and thirty-eight inches by thirty-four inches by eighteen inches (see Figure 2:7). The brick wall segments had layers of whitewash on them. The two brick segments in square N35 W10 were facing in an east-west direction whereas the brick wall segment in square N25 W10 (near the southern foundation wall) was in a north-south direction. The two brick wall fragments in N40 W10 appeared to be in an east-west direction.

A thirteen-and-one-half-foot-long brownstone foundation was found in squares N45 W10, N45 W15, and N45 W20. The eastern end of both the foundation and the building's interior were destroyed by the installation of the 1890s steam line and the 1984 electric conduit (see Figure 2:2). The western end of the foundation and the building's

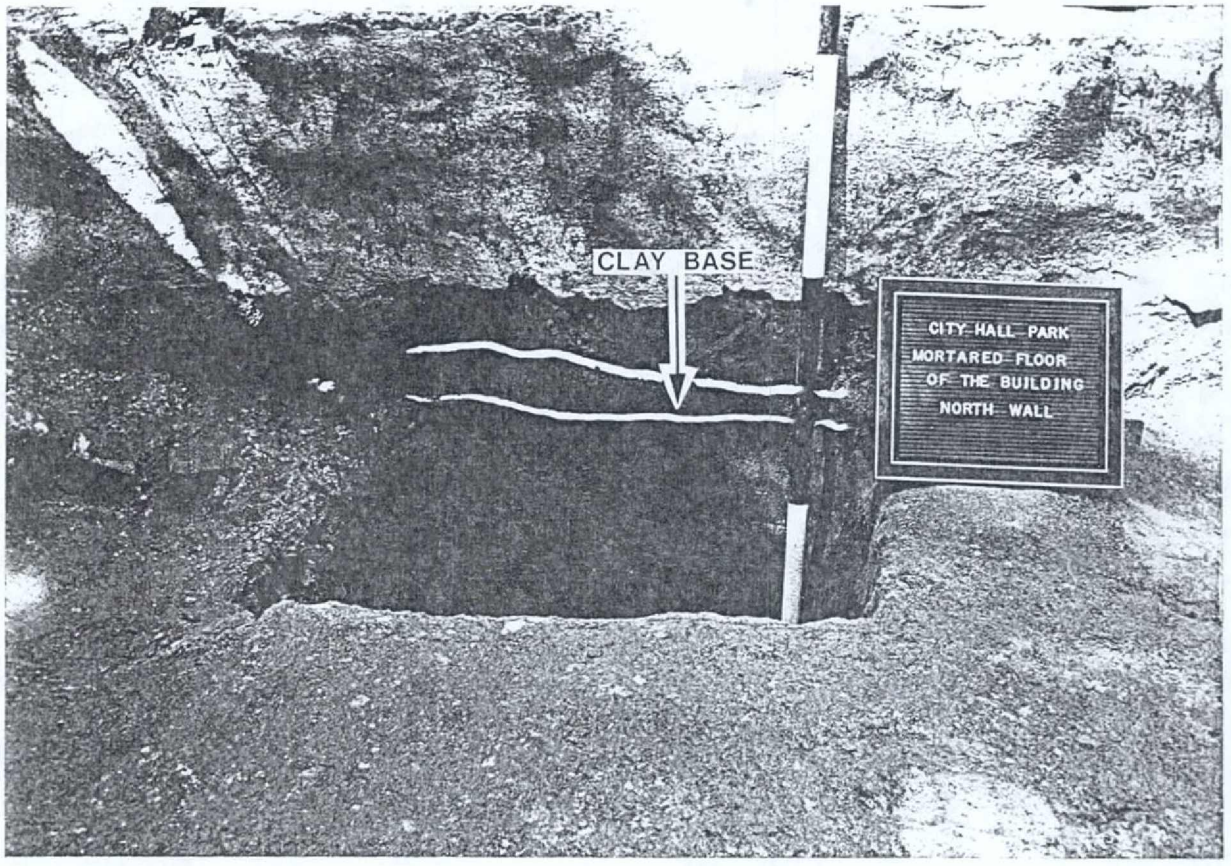


Figure 2:6 Interior foundation wall. The clay base underneath the floor also extends under the brownstone foundation. The interior surface of the foundation wall is whitewashed (Photo: Sherene Baugher).

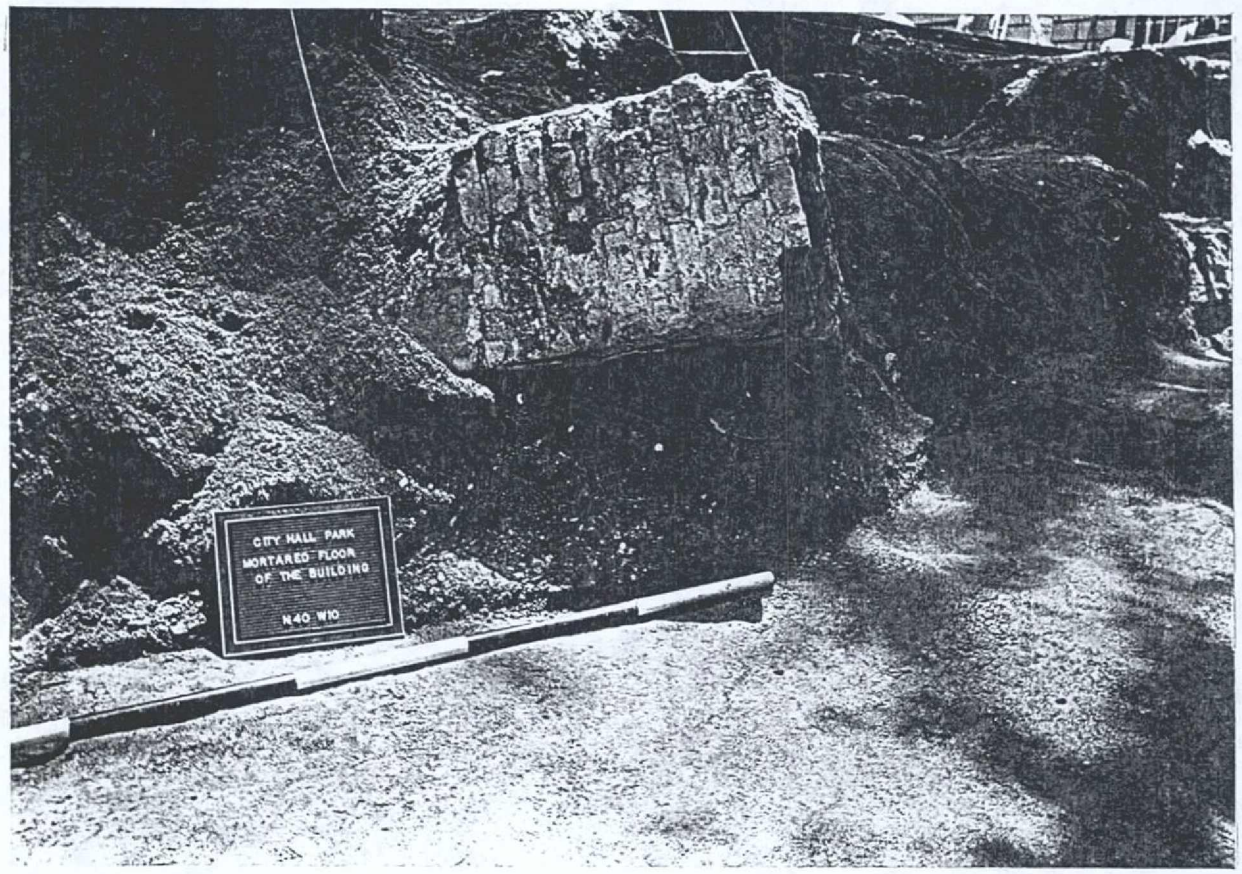


Figure 2:7 Brick wall fragments. The largest of the five wall fragments is shown in this photo. It faces in an east-west direction. The wall is whitewashed (Photo: Sherene Baugher).

interior extended underneath the adjacent fenced-in grass area. The interior surface of the wall was whitewashed (see Figure 2:6). Along the exterior of the northern foundation wall was a trench that varied in width from three inches to ten inches. The remnants of the southern foundation wall were located in square N25 W10 (see Figure 2:8). The distance from the outer border of the northern foundation wall to the outer border of the southern foundation wall was twenty feet. Because the utility corridor will only affect the walkway between City Hall and Tweed Court House, the excavation was restricted to this area. Thus, only a small portion of the Almshouse was excavated, and the rest of the building remains preserved and buried.

City Hall Steps

Square N0 E0 contained the remains of the original bottom step from City Hall. Squares N0 W5, N0 E15, N0 E10, and N0 E5 were opened up in order to determine the length of the step, which was approximately thirty feet (see Figure 2:2). Most of square N0 W5 was composed of marble and brownstone rubble which formed part of the footing for the rear steps to City Hall. The southern border of the square formed a ten inch wide strip of soil that was south of the rubble footing. This soil was excavated to a depth of forty-five inches but artifacts were found only in the first twenty-eight inches. To obtain information on building techniques, the rubble from the footing was removed. The base of the footing was approximately forty-two inches below current ground level (see Figure 2:3). The stones were laid on a base of sterile red-brown sandy soil (the same sterile soil found throughout the site).

The Yard

Figure 2:8 The remnants of the southern foundation wall. The floor extended to the brownstone remnants of the southern foundation wall. The floor appeared to be mortared. However, after floor specimens were examined in the laboratory, it was determined that it was a compacted earthen floor with a high lime content (Photo: Sherene Baugher).

All areas not designated "Almshouse" or "City Hall steps" were called "the yard" because this open area may have served as a yard area for the two buildings. No wells, cisterns, or privies associated with either the Almshouse or City Hall were found. Also, no other features or out-buildings were discovered. The yard area was heavily disturbed by the installation of electric lines, the water line, and the steam line (described above). No intact ground surface from the eighteenth century was found.

The dating of the intrusions and of the Almshouse deposits will be discussed in Chapter Four, which contains the results of the lab and field work.

CHAPTER THREE: METHODS OF LABORATORY WORK

Sherene Baugher
Edward J. Lenik
Judith Guston
Thomas Amorosi

CHAPTER THREE: METHODS OF LABORATORY WORK

This chapter describes the procedures used during the laboratory work on the City Hall Park artifact collection (a review of the LPC laboratory methods written for the general reader can be found in Baugher and Baragli 1987:34-40). In archaeology, an artifact loses much of its value if its context is not known. Therefore, the first task of an archaeological laboratory is to ensure that the provenience of each of the thousands of artifacts found during the excavation is accurately and permanently recorded. This chapter describes the recording procedures as well as the studies that were made on the collection in order to interpret the site accurately.

Field Recording

The documentation of the City Hall Park site began during the first day of fieldwork. As the artifacts were excavated, they were removed and placed in paper or plastic bags. Each bag was labelled with a water-proof marker with the exact site location (the code number indicating the excavation square and soil layer within which the artifacts were found) and the general category of artifacts inside the bag (wood, ceramics, etc.). During the first three weeks of the excavation, artifacts were brought to Brooklyn College's archaeology laboratory on a daily basis.

During the last few days of Brooklyn College's field school, the students, under the direction of their teachers, did a preliminary washing of the ceramics, glass, metal, and bone artifacts. The objects were washed in warm water using soft scrub brushes to remove the soil

from the artifacts. Additional cleaning was scheduled to take place at the LPC lab in July. The artifacts were brought to the archaeological laboratory at the LPC on June 30.

During the second three weeks of the excavation the artifacts were brought to LPC's archaeological lab on a daily basis. When the fieldwork was completed, the artifacts were cleaned. All the artifacts cleaned by the Brooklyn College students received a second cleaning in the LPC lab. Ceramics, glass, and clay smoking pipes were soaked in warm water with ORVUS paste (modified sodium lauryl sulfate). ORVUS is a mild non-ionic detergent with a pH of 6.3 used by conservators. The artifacts were scrubbed with a soft tooth brush. The objects were allowed to dry on baker's racks for twenty-four hours. Fabric, leather, mortar, bricks, wood, shell, bone, and floral material were cleaned gently with a dry brush. Artifacts were cleaned by square and level/unit in order to maintain their provenience numbers.

After the cleaning process was completed, selected artifacts (ceramics, bottle glass, window glass, and clay smoking pipes) were labelled individually with their provenience numbers. Most of the architectural material (metal, mortar, and brick) was bagged (with labels on the bags), but provenience numbers were not applied to their surfaces.

Artifacts selected for individual labeling were marked with the north and west (or east) coordinates of the excavation square and its level/unit number; thus, each was numerically coded with its exact site location. For example, a fragment of pottery recovered from a square with the coordinates North 5 West 15, level/unit 1 would be labeled N5 W15 U1. Care was taken that each label located in a place that would not be obscured during the subsequent mending process. A coat of

crown glass. However, most of the window glass fragments from the City Hall Park site were so heavily patinated that they could not be identified according to historic period or type. The glass was individually labelled by square and level/unit, then catalogued by thickness, then bagged by square and level/unit. Each bag was labelled on the outside.

Each catalogue sheet was headed with the site name and location (square and level/unit number) and type of artifact (e.g., buttons) to be catalogued. These sheets were prepared to meet the universal needs of a cataloguing system and also to reflect the characteristics of the artifacts found on this specific site. They were designed to make it possible to enter and to read the necessary data quickly and clearly. Each category of artifacts utilized a catalogue sheet appropriate to its particular type.

The cataloguing process was critical to the interpretation of the artifacts and the site. Because of the availability of documentary information about ceramics and glass bottle necks and bases, these artifacts could be dated quite precisely. Changes in style and in technical development made it possible to date ceramics and glass bottle necks and bases. Their presence at this site and the record of the stratigraphic context allowed the archaeologists to assign a time span to each level.

Using a dating system devised by J.C. Harrington and refined by Lewis Binford, it was possible to date, with reasonable precision, the archaeological deposits based on the stems of clay smoking pipes made by the British between 1600 and 1800. During this period, pipes were made with longer and longer stems and the diameter of the hole in these stems (bore hole) became smaller and smaller. By measuring the bore

hole's diameter and inserting the size frequency into a mathematical equation, the date of the archaeological deposits was determined. The designs on the pipe bowls changed from the 1600s through the 1800s and these motifs were also used to date the pipes.

When all possible dates were recorded on the catalogue sheets, the mending process began. Water-soluble household glue was used because it is reversible. In addition to providing more complete objects suitable for display, mended pieces gave the archaeologists information about artifact distribution, site disturbance, and other depositional processes.

When all mending possibilities were exhausted and recorded, the artifacts were re-bagged. The bags were then put into boxes according to category (for example, ceramics, bottle glass, or clay smoking pipes) and provenience for reference and storage.

Once mending had been completed and the artifacts had been dated as precisely as possible on the basis of historical documentation, a time span was assigned to each of the levels excavated. A dating technique called terminus post quem (the date after which) was used, that is, the date given to a particular soil level can only be later than the most recent artifact found in that level. Because artifacts have a time span as opposed to an exact date (most objects are produced over a period of time, and not "just once"), it is practical to find a mean date for each category of artifact at a particular level. This date is obtained by averaging the dates of all the artifacts of a particular category at a specific level.

The principle of terminus ante quem (the date before which) was also used to date levels. This dating technique is based on the assumption

that the absence in a particular level of a type of artifact for which the date of origin is documented indicates that the level pre-dates that date of origin.

The dates of all of the types of artifacts in a particular context (e.g., City Hall steps or the Almshouse deposit) can be averaged to find the mean date of that deposit. A mean date is a very useful working tool for the archaeologist, but it must be remembered that it is an average rather than precise date.

A total count was made of all the artifacts and of each of the groups and sub-groups. Percentages and ratios for each type of artifact and site location were calculated and charts, graphs, and lists were made. For example, the ratios of domestic (dishes, personal items, etc.) to architectural (nails, window glass, hinges, etc.) artifacts and of high-status wares to low-status wares at a site supplied information about the predominant use of the site and the economic status of its inhabitants. All of these calculations were combined with the information learned from the mending process, the dates assigned to each level, and the historical documentation about the site's inhabitants in order to interpret the specific uses of the site through time (see Chapter Four).

Identification of the Faunal Material

The faunal assemblage was identified by direct comparison with modern skeletal material from the American Museum of Natural History's departments of Mammalogy, Ornithology, and Ichthyology. The collections from the Bioarchaeological Laboratory, Department of Anthropology at Hunter College (CUNY) and the faunal analyst's private collections were also used as supplementary materials as were numerous

books, reports, and articles.

The identifications of the faunal remains were made to the most definitive zoological classification possible. If a bone fragment could not be assigned to a genus level and, where possible, species level, the next higher taxonomic level was used. In cases where bones were too fragmentary for a more specific taxonomic classification, they were designated by class, i.e. Mammalia. In turn, this designation was subdivided into categories of large, medium, and small animals. The size range and architecture of the bone fragment was used as an indicator for placement into the respective size classifications.

The Coding System

The Hunter College Bioarchaeological Laboratory coding system was used to record the faunal remains from the City Hall Park site. This system is cost-effective and makes intra- and intersite comparisons possible. The remains were catalogued on the standard faunal record forms used at the Bioarchaeological Laboratory at Hunter College. Data was then entered using "QUATTRO-BONE," an IBM PC developed for use with the Borland Co. "Quattro" and "Quattro Pro" programs. The "Quattro Bone" templates are just that, templates, not the spreadsheet program itself. Quattro is a registered trademark of Borland International, Scotts Valley, CA. (McGovern and Amorosi 1990). Catalogue sheets will be on file at both the Bioarchaeological Laboratory and the City Archaeology Lab at the Landmarks Preservation Commission for future reference.

Recovery and Taphonomic Concerns

Bone material was recovered in situ, or collected in a one-quarter-inch wire mesh. However, the use of soil pH readings as a means to monitor bone preservation was not undertaken. As a result, only some generalized taphonomic observations can be made about this assemblage.

Bone preservation ranges from good to fair condition; this observation is based on an analysis of the juvenile macro-mammalian specimens and the fragile micro-fauna, such as rodents. The City Hall Park site faunal material tends to be mineralized like faunal collections from other Lower Manhattan archaeological sites. Mineralization usually occurs when bone calcium is replaced by minerals in the surrounding soil. One other observation that still bears investigation is the high degree of fragmentation exhibited in the bones of the larger mammalian species. This fragmentation might indicate that bone was highly processed for grease and marrow. However, there are a number of other factors that could also account for this fragmentation. Chemical and biological agents are often responsible for bone breakage in larger species (Behrensmyer 1978; Brain 1981; Haynes 1983). The smaller species are represented by whole bone elements. It can be argued that the smaller species such as rodents did not serve as dietary items, and, therefore, were not processed. Conversely, since the smaller species are represented by nearly complete bone elements, it may be the depositional context in which they were recovered that accounts for their more complete nature.

Quantification

Bones were tabulated within the following catagories: the Total Number of Bones (TNB), the Number of Identified Specimens per Taxon

(NISP), and the Total Number of Fragments (TNF). "QUATTRO-Bone" is programmed to calculate other types of ordinal and ratio measures, which will appear in the summary tables, but will not be discussed because they are not applicable to the City Hall Park site faunal assemblage. The more popular methods of the Minimum Number of Individuals (MNI) and meat weight yields have been severely criticized (Casteel 1977, 1978; Gilbert 1978; Gilbert and Singer 1982; Grayson 1978, 1979, 1981, 1984; Klein and Cruz-Uribe 1984; Lie 1980; McGovern 1985). The use of MNI requires the assumption that faunal deposits result from single depositional episodes, in which the faunal remains are buried on a newly exposed, clean surface and are immediately sealed (Grayson and Thomas 1983, Thomas and Mayer 1983). One such example of this phenomenon is the Shearson-American Express site (Russell and Amorosi 1987). The remains of cattle crania and sheep/goat podials were butcher's waste which was dumped into a landfill site and quickly sealed. The plant remains also recovered from the Shearson-American Express site indicate that the deposition of faunal remains was quick, and the grass cover became quickly established. However, the bone deposits from the City Hall Park site were formed from many accretional events, such as the demolition of the building, leaving current food remains as well as prior remains which had been trapped beneath floorboards, or landscape grading and/or infilling of the yard area. There is no stratigraphic data to indicate that a single depositional episode occured.

There are other methodological problems with MNI (Minimum Number of Individuals) and meat weight yields that also preclude their use at the City Hall Park site. MNI determinations are unreliable because different analysts employ different criteria with significant

differences in results (Grayson 1983:101). The derivation of meat yields is directly dependent on the calculation of MNI. Since MNI methods do not yield accurate and replicable results, meat weight yields are therefore prone to error (Klein and Cruz-Uribe 1984:24-38; McGovern n.d.:12-13).

In sum, the problems mentioned above are severe enough as to preclude the use of MNI and meat weight yields. Although the ordinal measures of TNB, NISP, and TNF suffer from similar methodological problems (Grayson 1983, 1984; Klein and Cruz-Uribe 1984:101; Crabtree 1985; Grayson 1983:101), these ordinal measures carry virtually all of the information embodied by MNI counts and are statistically valid ordinal levels of analysis.

CHAPTER FOUR: EXCAVATION RESULTS-- ANALYSIS OF THE ARTIFACTS

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CHAPTER FOUR: EXCAVATION RESULTS--THE ANALYSIS OF THE ARTIFACTS

This chapter discusses the specific diagnostic artifacts (other than architectural materials) that were found during excavation at the City Hall Park site, and assigns a date range to these artifacts. Within each diagnostic group their location within the Almshouse is examined first, followed by the yard and the rear steps to City Hall. Consideration is given to problem squares and levels and to apparent intrusions. The categories to be examined are ceramics, glass, clay smoking pipes, buttons and miscellany. The architectural artifacts will be discussed in Chapter Six.

The Intrusions

As discussed in Chapter Three, there were four major site intrusions: 1) the 1890s steam line trench; 2) a 1904 water pipe trench; 3) two parallel, non-functional twentieth-century electric lines; 4) one inactive twentieth-century electric line. In analyzing the stratigraphy and artifacts, it was apparent that there was major disturbance due to these intrusions in squares N10 W5, N10 W10, N15 E10, N15 E5, N15 W10, N20 W5, N20 W10, N30 W5, and N40 W5.

Ceramics

To historical archaeologists, ceramics are usually the most diagnostic artifacts since well-documented design and manufacturing changes in pottery can often allow an archaeologist to date a deposit within a twenty-year time span and sometimes as closely as within ten years. The ceramics from every level of every square were dated and analyzed. The general conclusions of the time period for the deposits,

based on the ceramic evidence, are presented below.

ALMSHOUSE

Almshouse Levels

There were 244 sherds from the Almshouse deposit: 212 sherds dated to the eighteenth century, 21 could not be dated precisely, and 11 were from the nineteenth century. The 11 nineteenth-century sherds can be accounted for due to documented problems in field recovery rather than to mixed deposits. Of the eighteenth-century sherds 87% were tablewares (dishes and tea sets) and 13% were utilitarian wares (food preparation vessels). Ninety-one percent of the tablewares were dishes. The dishes were composed primarily of undecorated creamware and pearlware (72%), the majority of which (89%) was creamware (see Figure 4:1). The undecorated wares were the most inexpensive dishes of the late eighteenth century (Schwind 1984:31-33). Decorated dishes comprised only 24% of the tablewares.

Only 8% of the tableware was for tea service; the teawares were either oriental export porcelain, British engine-turned stoneware, or Nottinghamware. Tea sets were more expensive than dishes (Schwind 1984) and oriental porcelain was the most expensive tableware. The Common Council (1905 Vol. 4:310) allocated space for separate quarters within the Almshouse for the superintendent and his family. Since the superintendent of the Almshouse lived in the building, it is possible that the teaware may have been from his personal collection rather than material used by the inmates/residents.

The majority of the ceramics in the Almshouse deposit (81%) dated to the last quarter of the eighteenth century. The 8 sherds of British

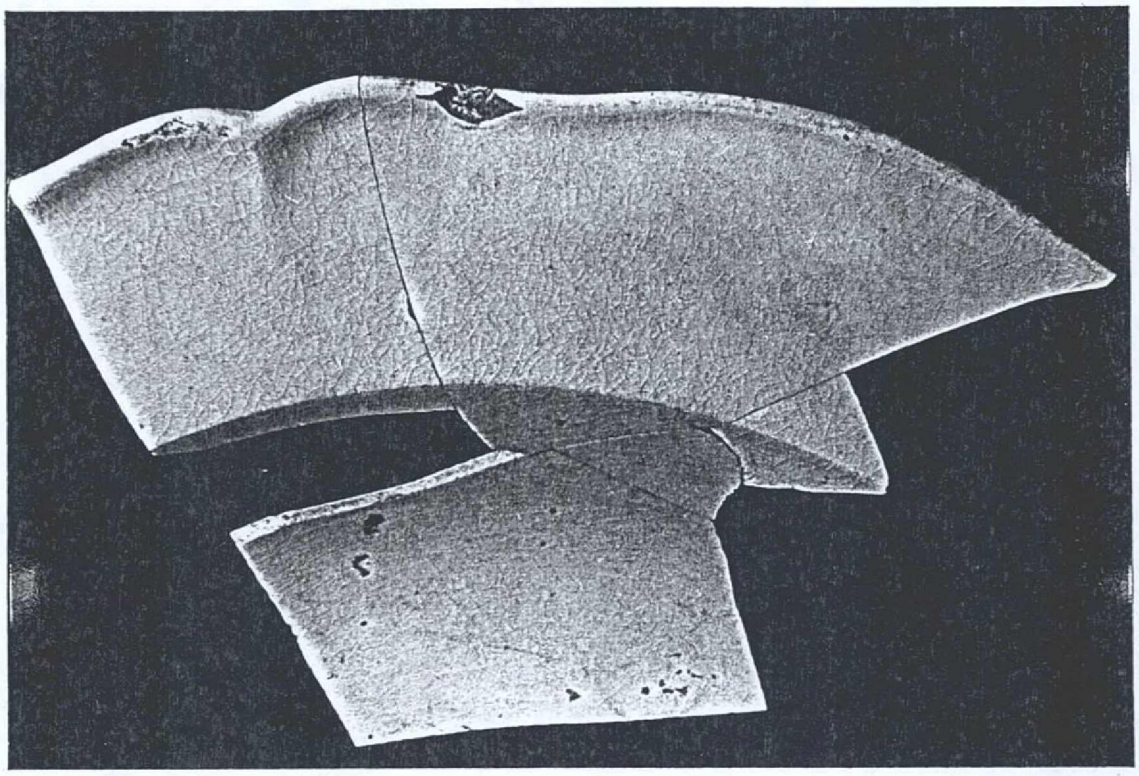

Figure 4:1 Undecorated creamware plate (Photo: Carl Forster).

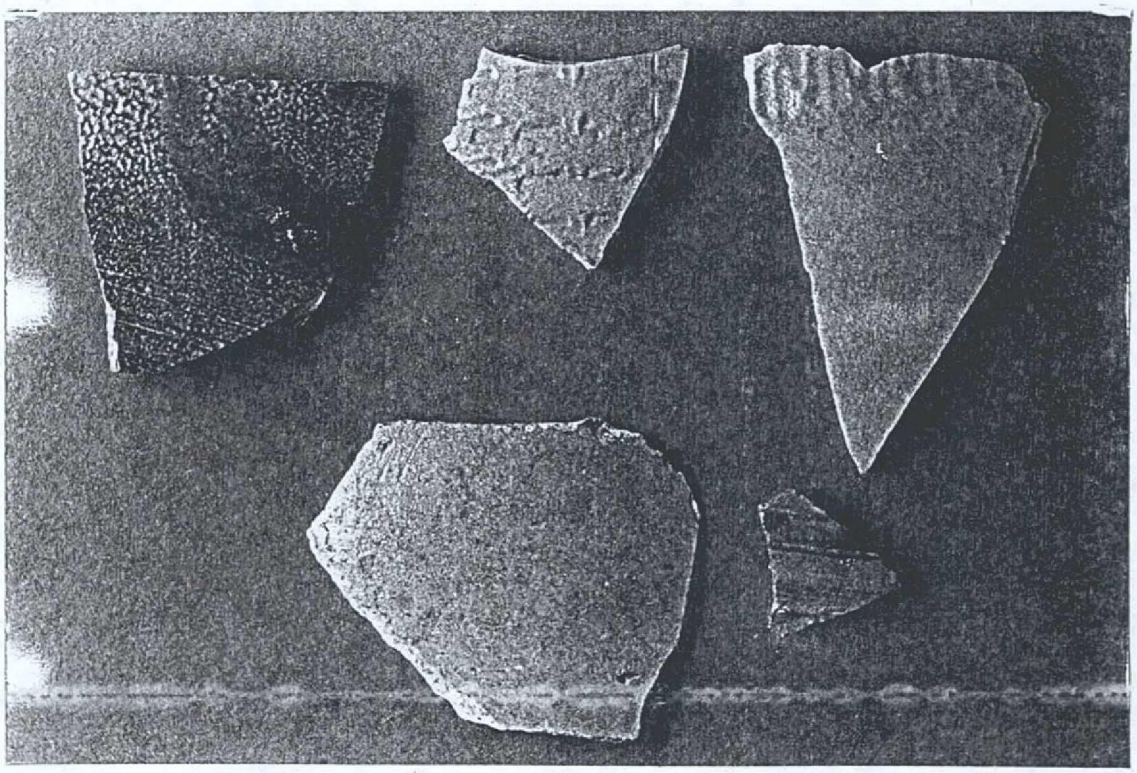

Figure 4:2 Locally-made stoneware. The yellow stoneware is from Manhattan (Photo: Carl Forster).

white salt-glazed stoneware (1720-1805) and the 6 sherds of delft (1700-1800) could have been objects that had been trapped underneath floor boards from an earlier period in the Almshouse's use or used in the late eighteenth century.

All of the dishes and tea sets from the Almshouse were British-made. However, the utilitarian wares contained British-made slipwares, American-made redwares, locally made (probably New Jersey) stonewares and Manhattan-made stonewares. Lower Manhattan contained natural clay deposits. There were three potteries in Manhattan (on Duane Street, Reade Street and Chatham Street) in the late eighteenth century; they were owned by the Corselius family, the Crolius/Remmey family, and the Van Vlack family (Baugher et al. 1982:108-111). The Manhattan stonewares are distinctive in appearance because of their yellow or buff color (see Figure 4:2), whereas New Jersey or Long Island stonewares are blue-gray in color (Meta Janowitz, ceramics specialist, personal communication, 1989).

Level above Almshouse

The red-brown and yellow clay stratum that sealed in the Almshouse deposits contained fifty sherds: 44 (88%) dated to the last quarter of the eighteenth century, 4 (8%) were nineteenth century utilitarian wares (three American-made yellowware and one a locally-made stoneware), and 2 (4%) stoneware sherds were of a style that could not be dated precisely. The presence of the ninteenth century material appeared to be part of the deposit and not intrusive material. Since the Almshouse was demolished in 1797 and there were landscaping changes due to the construction of City Hall in 1810-11, it is not surprising to have a deposit that contained both eighteenth and nineteenth-century

material.

Nineteenth and Twentieth Century Levels above Almshouse Deposits

The uppermost stratigraphic levels in the Almshouse squares contained 1,465 sherds. Six hundred and seventy (46%) dated to the nineteenth and early twentieth century, 754 (51%) were from the eighteenth century, and 41 (3%) could not be dated precisely. Of the eighteenth-century material 128 (17%) sherds were undecorated creamwares and pearlwares which could date from the 1770s to the 1820s. The assemblage appeared to be primarily utilitarian wares (54%) and only 44% were broken tablewares.

YARD AREA

There was a red-brown soil stratum and a clay stratum in the yard area north of the brownstone foundation wall and in the disturbed yard areas to the east and south of the Almshouse squares. These two stratigraphic layers were similiar in all of the yard areas in that none of the deposits contained an intact eighteenth-century ground surface. In all the deposits, eighteenth-century material was mixed with nineteenth-century artifacts including whitewares (dating from 1820 to 1900+), mid-nineteenth-century yellowwares, and early to mid-nineteenth-century stonewares. The red brown soil stratum contained 29 sherds; there were 16 eighteenth-century sherds (55%), 9 nineteenth-century sherds (31%), and 5 sherds (14%) which could not be dated precisely. The yellow clay stratum contained 25 sherds. Fifty-two percent of the sherds (13 sherds) were manufactured in the eighteenth century, 16% (4 sherds) were from the nineteenth century, and 32% (8

sherds) could not be dated precisely.

STEAM LINE TRENCH

The area disturbed by the installation of a steam line in the 1890s between City Hall and Tweed Court House contained both eighteenth and nineteenth-century ceramics. The eighteenth-century ceramics were similiar to the material from the Almshouse although none of the sherds mended with sherds from the Almshouse deposit.

Glass

Unfortunately, the glass assemblage from the site did not provide useful information for dating the site or the stratigraphic deposits. Most of the window glass was so heavily patinated that it was impossible to determine the exact age or manufacturing technique. The window glass did provide some general architectural information that has been included in the following chapter.

Bottle glass is usually very useful for dating purposes. In the seventeenth and eighteenth centuries there was an evolution of bottle shapes; these distinctive forms enable archaeologists to date the bottles (Noel Hume 1970; McKearin and McKearin 1941). With the growing demand for bottles in the early nineteenth century, molds were introduced, both to speed up production and to standardize the shapes (Baugher-Perlin 1978:132-33). The mold markings provide a more precise range for dating bottle glass (Steward and Consentino 1976; Jones, Sullivan et al. 1985). Commercial embossments enable archaeologists to determine the place of manufacture and the exact product (Munsey 1970; Berkow 1973). Lastly, a bottle's function can be determined by its shape and color (Adams 1971).

The entire bottle glass assemblage from the City Hall Park site contained very few embossments or mold markings. Those few artifacts with embossments had only fragments of designs or small portions of one or two letters; consequently, there was not enough data to determine trade networks. Of all the bottle glass (200 objects) only 10 artifacts were large enough to determine the bottle's function -- there were 4 wine bottle necks and bases and 6 medicine bottles. These identifiable objects were found in disturbed levels and squares within the yard area, in nineteenth and twentieth-century levels of the Almshouse squares, and in the Almshouse itself. Lastly, most of the bottle fragments were small and without diagnostic features so dates could not be assigned to those objects.

ALMSHOUSE

In the deposits above the Almshouse there were fragments from 3 wine bottles and 4 medicine bottles. The artifacts dated to both the eighteenth and nineteenth centuries.

In the Almshouse deposits there were fragments from 1 wine bottle base and a base from 1 medicine bottle. These fragments could not be dated precisely because they were manufactured with technology (blowpipe pontils and solid iron bar pontils) that was used in both the eighteenth and nineteenth centuries.

The Almshouse glass assemblage was different from the glass deposits in the rest of the site. The Almshouse contained 47% bottle glass and 53% table glass whereas the rest of the site contained 72% bottle glass and only 28% table glass. In the nineteenth century there was a tremendous increase in bottle manufacturing and the deposits in the yard and by the City Hall steps (which are nineteenth-century deposits

based on ceramic analysis) reflect those trends. The Almshouse deposit has a much lower proportion of bottles, which is typical of eighteenth-century deposits. In terms of the Almshouse table glass there was only 1 fragment of expensive glass etched with a geometric and floral design; this object was probably from a decanter (Figure 4:3). The decoration of inexpensive tableware by means of etching only came into general use in the late 1800s (McKearin and McKearin 1941: 32). While the glass assemblage could not be used to precisely date the Almshouse deposit, the proportions of material (bottles to table glass) and types of glass artifacts are typical of eighteenth-century deposits.

YARD

The yard area contained 41 bottle fragments but only 1 object was identifiable in terms of function--a nineteenth-century medicine bottle.

CITY HALL STEPS

Glass specimens were not found within the footing of the rear steps to City Hall. The stratum above the City Hall steps contained 4 nineteenth-century bottle fragments and 1 fragment from an eighteenth-century bottle. However, these fragments were so small that it was not possible to determine the bottles' function.

Smoking Pipe Analysis

In addition to dating specific periods of occupation, the analysis of the clay smoking pipes from the Almshouse site provides fresh insights into the behavior and lifestyle of the Almshouse inhabitants and the attitudes of New Yorkers toward "objects of charity" (Ross 1988:138).

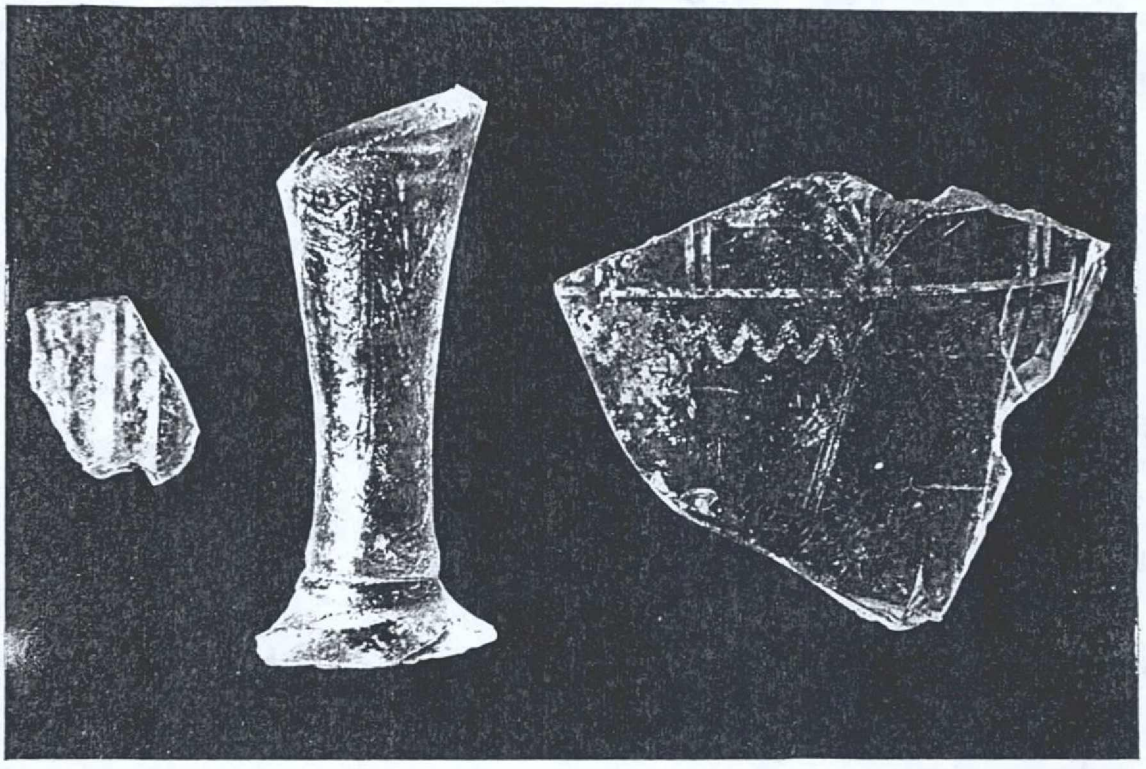

Figure 4:3 Table glass. Left to right: wine glass stem, glass etched with a geometric and floral design, probably from a decanter (Photo: Carl Forster).

Three hundred thirty-seven clay smoking pipe fragments were recovered from the Almshouse site--nearly one-quarter of them (21%) retrieved from undisturbed strata associated with the Almshouse itself. As a whole, the sample consisted of eighteenth and nineteenth-century tobacco pipes, which were, for the most part, of the poorest quality. These shoddier examples of the pipemakers' art may reflect New York City's attitude toward the city's poor.

Archaeologists have long been aware of the usefulness of clay pipes as chronological indicators of site occupation periods. Three factors allow us to use pipes as dating tools:

1. A continuous reduction in the size of stem bore diameters through time, which was a gradual but measurable process;
2. Stylistic and morphological changes having to do with bowl shape, size, length of stem, and stem-to-bowl angle; and
3. Pipemakers decorating their wares with distinctive motifs and makers' marks which are chronological indicators of change.

With this in mind, a brief summary of the diagnostic pipes in each site area will be discussed below.

I. THE ALMSHOUSE PIPES

The Levels above the Almshouse

Only 8 pipe fragments were recovered from the stratum directly above the Almshouse and a mean date of 1767.9 was calculated based upon Binford's straight line regression formula ($Y = 1931.85 - 38.26X$) and 7 stem bore diameters. The single diagnostic pipe recovered was manufactured in Liverpool by William Morgan between 1767 and 1796.

These dates are slightly later than the those in the strata directly below, associated with the Almshouse.

Inside the Walls of the Almshouse

Seventy-one clay smoking pipe fragments were recovered from strata associated with the area within the foundation walls of the Almshouse. A mean date of 1762.3 for these deposits was established based upon a sample of 51 stems. In general, the pipes recovered were consistently eighteenth-century Dutch and English types with almost all the Dutch pipes having been manufactured in Gouda after 1740. The English pipes, when it was possible to type them, had been imported from London and Bristol.

Several diagnostic clay tobacco pipes are worth mentioning, since they represent the poorer quality of pipe mentioned above. For example, each eighteenth-century Dutch pipe was marked with the letter "S," which is an abbreviation of the word "sleght" (ordinary) in Dutch, as opposed to "fijn" (fine) or "porcelijn" (porcelain) pipes, which were saved for finer products. Likewise, eighteenth-century English pipes recovered from the Almshouse were mostly plain and undecorated, and infrequently marked with the pipemaker's initials.

Diagnostic pipes included an unsmoked bowl with rouletting around its rim, a typical Dutch eighteenth-century ovoid shape, and a shield-shaped mark containing the Arms of the City Gouda on either side of its heel, surmounted by the letter "S" (see Figure 4:4). The "S" tells us that the pipe's quality was quite ordinary. The presence of the shield, coupled with the Gouda city-mark, denotes that the pipe was manufactured in Gouda and that it could not have been manufactured before 1740, when a Guild regulation having to do with marking both

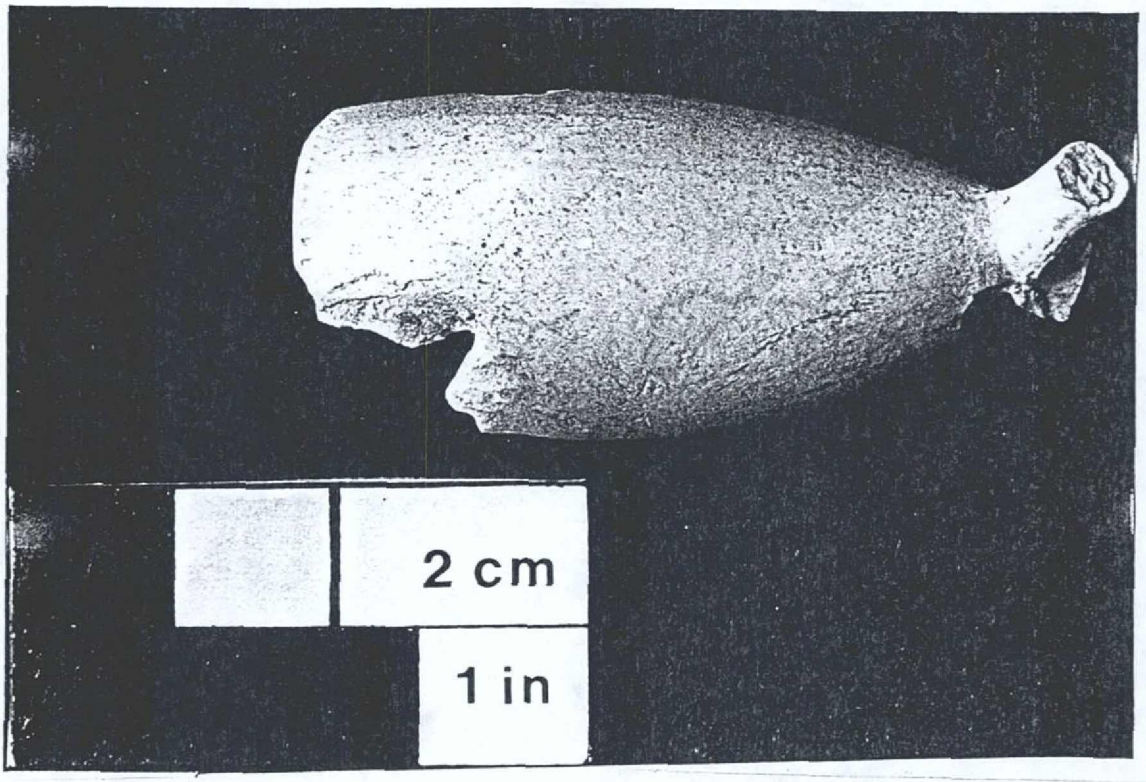

Figure 4:4 Dutch eighteenth-century pipe bowl. Pipe has a rouletting around its rim and a shield-shape mark containing the arms of the City of Gouda on either side of its heel. The heel of the pipe is marked with a crowned "64" in a beaded circle.

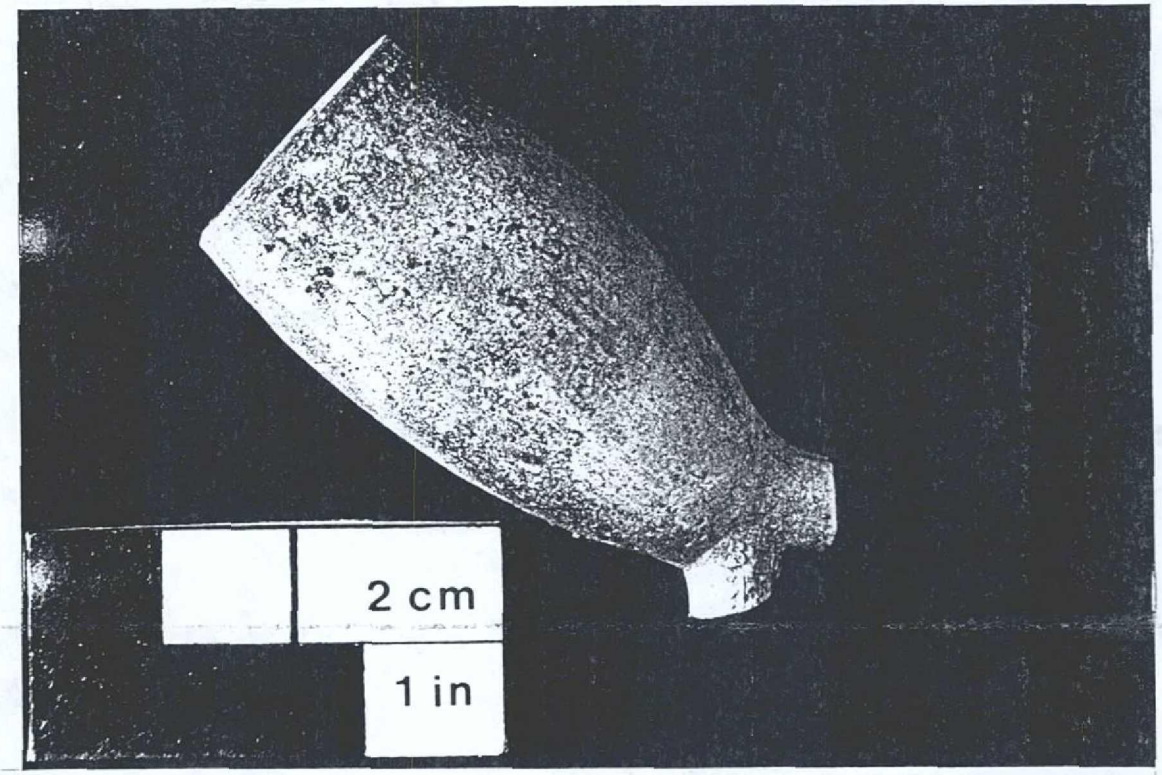

Figure 4:5 Dutch pipe bowl. The maker's initials are stamped into the base of the heel. It was made by Frans A. Glas of Gouda (Photo: Carl Forster).

sides of the pipe with the letter "S" above the shield was instituted (Duco 1980). The heel of the pipe was marked with a crowned "64" in a beaded circle. This mark was first recorded by the Gouda Pipemakers' Guild in 1725. (Duco 1982: 102).

A similiarly shaped and decorated pipe was found on the Almshouse floor (see Figure 4:5). This pipe, too, cannot date prior to 1740 because of the "S" mark above the Arms of the City of Gouda on both sides of the heel. The maker's initials stamped into the base of the heel were "FAG." This mark was owned by Frans A. Glas of Gouda, beginning in 1737 (Duco 1982:88).

An English heeled pipestem (4/64") fragment was also recovered from the Almshouse. On either side of the rather long heel was an eight-petaled flower in relief. The pipe resembled a more complete specimen found in 1985 at the Broad Financial Center site in Manhattan. Based only on the shape of the bowl, it was suggested that the flowered pipe from the Broad Financial Center was manufactured in London sometime between 1700-1770 (Dallal 1985). Of the fragmentary sherds of pipe bowls, all were English but few were decorated. Those few were badly worn.

An enigmatic pipe was revealed when two sherds mended across levels within a square. This bowl, with the typical ovoid eighteenth-century Gouda morphology sported the master's initials in relief on either side of the heel: "D" on one side and "R" on the other. The placement of initials on the heel of a pipe is an eighteenth-century British phenomenon. However, the fine burnished coat, rim rouletting, and egg-like shape strongly suggest that this particular pipe was manufactured in Gouda during the eighteenth century. The pipemaker is unknown.

There was evidence of fire in N35 W10. Several of the pipe fragments had been burned, especially in the rubble and plaster layer (level 9) and the soil above the Almshouse floor (level 12).

It is interesting to note that contiguous squares N35 W10 and N40 W10 had identical mean dates of 1759.7, while N40 W15 was slightly later with a mean date of 1764.9. The sample in other squares was too small to calculate mean dates.

One pipe stem fragment contains cut marks which suggest an attempt at whistle-making (see Figure 4:6). It was an occasional practice during the colonial period to fashion little whistles out of discarded stem fragments.

The Nineteenth and Twentieth-Century Levels above the Almshouse

A total of 51 clay tobacco pipe fragments, or 15% of the total collection, were recovered from the nineteenth and twentieth- century strata above the Almshouse. The range and composition of the pipes found in these nineteenth and twentieth-century units was consistent for the period of time being examined. All decorated pipe bowls were of the "gadrooned," ribbed, or "pillar-molded" type, whose popularity continued throughout the nineteenth century. Late eighteenth through late nineteeneth-century ribbed or pillar-molded pipes, which were common in the upper and probably disturbed levels of the site, were advertised in the late nineteenth century as "the cheapest pipe in existence" (Zorn 1872:9).

Similarly, all pipestems, with the exception of one with a 6/64" bore diameter, were narrow-bored, 4/64" and 5/64" stems. No mean date was calculated, since, as Noel Hume states, the Binford formula's accuracy "seems to be restricted to the period c. 1680-1760, with the

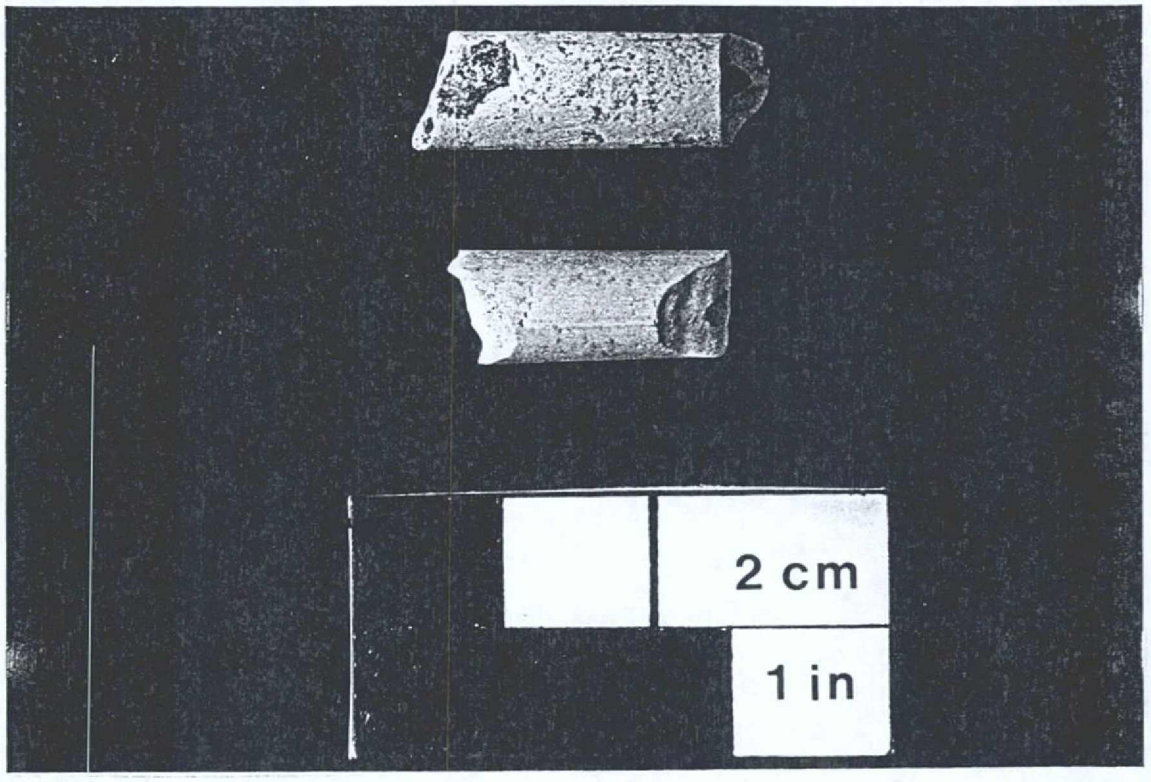

Figure 4:6 Pipe whistles. These two pipe stems contain knife marks (right side near bore hole). The marks appear to be attempts at making pipe whistles (Photo: Carl Forster).

probability of error increasing rapidly as one moves away from that bracket in either direction" (Noel Hume 1982:300).

A curious fact about this nineteenth-twentieth century pipe sample was the number of glazed or color-spotted fragments. The glazes were predominantly yellow but included burnt sienna. These colorful fragments were excavated from N30 W10 and N40 W10. Glazed pipes were manufactured during the seventeenth and eighteenth centuries but saw a resurgence in the mid-nineteenth century (Duco 1980). Another stem (4/64") was stained red and black and showed evidence of having been burned. This sherd was located in N40 W15/20. Many of the bowl and stem fragments showed evidence of having been smoked.

YARD AREA NORTH OF ALMSHOUSE

Only 7 pipe fragments were recovered from the yard area and only 1 was diagnostic. This was a small fragment of a British pipe, manufactured by Robert Tippett II (1698-1722) of Bristol, and it may be the earliest pipe at the Almshouse site. One of the pipestems from the yard had been altered by a knife, in what appeared to be an attempt to make a whistle (see Figure 4:6).

YARD AREA SOUTH OF ALMSHOUSE

Ceramic analysis proved that there were no intact eighteenth-century surfaces in the disturbed yard areas. However, a small number of pipe sherds were excavated from this area of the site. None were diagnostic.

DISTURBED SQUARES

Squares Disturbed by the Installation of Twentieth-Century Electric Lines

A total of 56 pipes were recovered and the sample consisted of late eighteenth-nineteenth century pipes. Since the accuracy of pipe stem dating methods decreases as one moves forward from 1760 into the present, a mean date was not calculated (Binford 1962:19-21). Several pipes were unusual, rare, and/or chronologically diagnostic.

For example, a unique stem, much like a sheared poodle's leg in shape, was found. The maker and the city of origin is unknown, but pipes like these have been seen at other New York City sites, and always in disturbed levels. Therefore, they are difficult to date, although a nineteenth-century date is suspected (Dallal 1986). A stem decorated with large circles and diagonal lines was also recovered. This motif most resembles decorated Danish pipestems manufactured by Ross, Colin, and Ferslew between 1753 and circa 1764 (Ahlefeldt-Laurvig 1980:230). Yet another William Morgan stem (1767-1796) turned up from Liverpool.

A pipe marked "WG," one letter on either side of the heel (1775-1830), is common to Revolutionary War period sites. Since the Barracks was located north of the Almshouse, it is not difficult to imagine the pipe used by a British soldier.

A ribbed or pillar-molded bowl of English or American manufacture was also recovered.

Squares Disturbed by Installation of Late Nineteenth Century Steam Line Trench

A total of 19 pipe fragments were recovered from these steam line trench squares. No mean date was calculated. The range of diagnostic pipes included the common ribbed or pillar-molded type, Morgan of Liverpool stems, and an eighteenth-century London pipe decorated with a tulip on the heel.

THE CITY HALL STEPS

A total of 23 pipe fragments were recovered from the City Hall steps. There were no pipes within the footing for the rear steps of the building. For this reason, no similarities could be found in the soil strata between the footing and the City Hall foundation. There were only 5 sherds in the City Hall foundation levels. Interestingly, one stem, encrusted with mortar, was recovered from the dark brown clay in the area south of the footing (level/unit 3).

Based on the position of decorative motifs on several bowl fragments, it is suggested that these fragments post-date 1750. It is likely that they date to the latter part of the eighteenth century and/or the early nineteenth century.

CONCLUSION

The residents of the Almshouse were smoking tobacco. If conferred by the Almshouse itself, residents were supplied with the cheapest grade of smoking pipes. If Almshouse residents were required to procure their own pipes and tobacco, these inferior pipes may reflect the indigency or frugalness of the buyers.

There was no evidence to suggest, however, that the inmates of the

Almshouse were manufacturing clay smoking pipes on the site of the Almshouse.

Analysis and Interpretation of Buttons, Button Blanks, and Pins

A small collection of buttons was recovered from the Almshouse site. The analysis of these artifacts gives us some insight into their manufacture and evolution and into life-ways of the occupants of the site. Specifically, these buttons provide information that helps us to determine site chronology, cultural behavior and the nature of trade networks.

Noel Hume (1969:88) has noted that "there are few easy rules of thumb that can be followed in the dating of buttons." However, metal hollow cast buttons generally date to the first half of the eighteenth century while flat copper-alloy (brass) disc type buttons generally date to the last half of the eighteenth century. Military buttons, on the other hand, often are a specific time marker for a site and thus are historical as well as archaeological documents. The vast majority of metal buttons used in Colonial America prior to 1800 were imported, probably from England. However, bone buttons were frequently made by individual crafts persons in the colonies and have been found on numerous military sites of the eighteenth century (see, for example, Calver and Bolton 1950:44, 53; Stone 1974:57-60; South 1974:140).

A total of 61 buttons and button fragments were recovered from the site, most from within the Almshouse foundation squares (see Figure 4:7 and Table 4:1). Of this total, 27 specimens or 44% are cut discs or button backs manufactured from bone. Each specimen has one central hole for attachment to a garment. These bone disc buttons range in diameter from 11 millimeters to 29 millimeters, and in thickness from 1

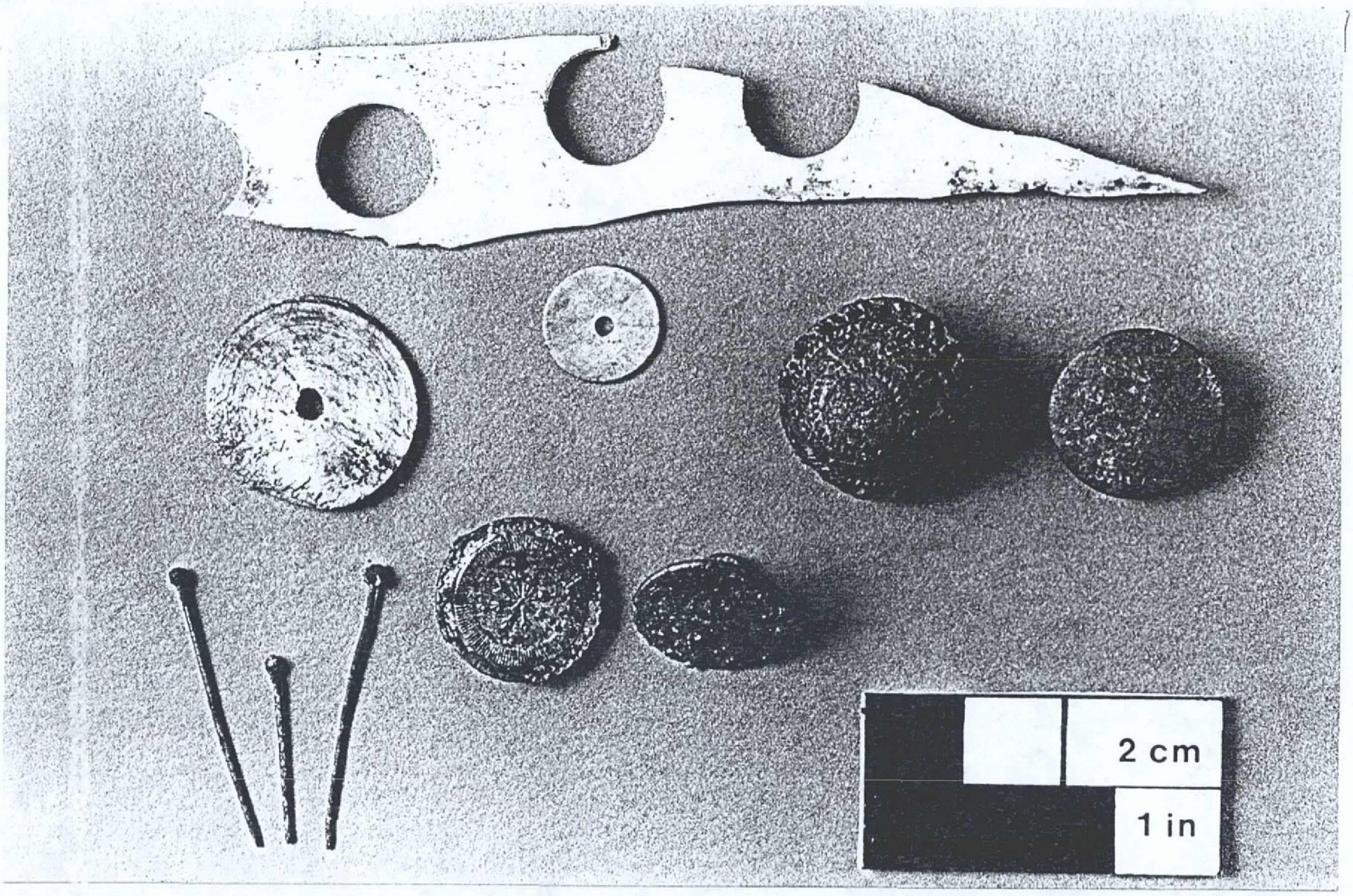

Figure 4:7 Buttons, button blanks and pins (Photo: Carl Forster).

TABLE 4:1 CATALOGUE OF THE BUTTONS

Description	Size (mm)	Decoration	Chronology	Quantity
brass, stamped disc, wire eye	12,13,14,5,19	plain	18th-19th c.	4
brass, stamped disc, wire eye	14, 16	tin plated	18th c.	2
brass, stamped disc, brass wire eye	16, 18	plain	18th-19th c.	2
brass, stamped disc, wire eye	14,15,24,5	gold gilt	19th c.	4
brass, stamped disc	26	"GIR"	18th c. military	1
brass, cast, brass wire eye	16	domed, embossed	?	1
2 pc. brass, brass eye	15	embossed eagle	19th c. military	1
2 pc. brass/bone, 4 holes	18	plain	18th c.	1
2 pc. brass/bone, 4 holes	17	embossed gold gilt	18th c.	1
2 pc. brass/bone, 4 holes	23	domed, gold gilt	18th c.	1
brass, sleeve link	10-12	domed oval	18th c.	1
white metal, cast, wire eye	17	plain	18th c.	1
white metal, cast, cast eye	18	plain	18th c.	1
2pc. iron, stamped, crimped	18	?	?	1
glass, white, 4 holes	9, 11	plain or cent. recessed	c. 1840+	3
shell, cut, 4 holes	9	cent. recessed	19th c.	1
shell, cut	13	cent. recessed	19th c.	1
bone, cut disc, 1 cent. hole	11 - 19	plain	18th c.	17
bone, cut disc, 1 cent. hole	20 - 29	plain	18th c.	8
bone, hand cut disc, 1 cent. hole	14, 21	plain	18th c.	2
bone, cut & drilled, 4 holes	13.5, 18	cent. rec.	19th c.	2
bone, cut & drilled, 5 holes	13.5 - 17.5	cent. rec.	19th c.	3

millimeter to 4 millimeters. Analysis of these specimens indicates that they were manufactured from flat meat bones, probably ribs. They were cut from the bones by a carpenter's brace and bit and the evidence of this method of manufacture is clearly present on numerous specimens in the form of circular cut marks. Supporting evidence for this manufacturing method was previously found at an eighteenth-century military barracks at West Point, New York. Calver and Bolton (1950:44, 53) reported finding an iron bit, blanks of various sizes and bone slabs at the West Point site. However, two of the bone discs or button backs in the Almshouse collection were cut by hand, probably by means of a knife, and were consequently uneven or oval in shape rather than round.

Seventy-six bone blanks or bone button by-product fragments were also recovered from the site. These bone by-products exhibit evidence of being cut by a metal bit and the blank holes have diameters which range from 11 to 23 millimeters. Nearly all of these discarded bone fragments were found within the Almshouse foundation squares.

The presence of bone backs, blanks, or bone by-products at the site suggests that the manufacture of bone buttons was an important activity at the site during the eighteenth century. Ross (1988:159) has noted that the Almshouse was equipped with tools and that residents were required to work in return for their food, lodging, and clothing. Apparently, New York City sold the goods produced in the Almshouse including such items as yarn. It is reasonable to conclude, therefore, that the residents probably made clothing with cloth-covered bone buttons for their own use. The data further suggests that commercially manufactured or imported buttons may have been too expensive for this institution to acquire during this time.

Five bone buttons that were cut and drilled, probably on a lathe, were also recovered from the site. Two of these specimens have four holes in a central recessed area for attachment purposes while three specimens have five holes in a central recessed area. These bone buttons are decidedly of better quality than those made with a carpenter's brace and bit. These machine-cut buttons date to the nineteenth century and were recovered from disturbed contexts above or outside the Almshouse.

A variety of brass buttons was found at the site. Twelve specimens are of the stamped disc type, have wire eyes for attachment purposes and are plain, tin plated or gilded. These brass buttons have a broad temporal span, i.e., from the eighteenth to nineteenth centuries (South 1964:115-125; McDaniel and Russ 1989:50-60).

Two military buttons were found at the site. One specimen is a two-piece brass artifact with an embossed eagle on its face or obverse side. This eagle-decorated button was found in a disturbed context to the south or well outside of the presumed location of the Almshouse. The eagle-type button dated to the early nineteenth century (McDaniel and Russ 1989:58). The second military button is a stamped disc of brass with an incised decoration on its face that appears to read "GIR." This button is probably eighteenth-century British, i.e., George I Rex, and was found within the Almshouse foundation.

Three two-piece brass and bone buttons are in the Almshouse site collection. One specimen is plain, one has gold gilt and is domed and the third has an embossed geometric design with gold gilt. These buttons also date to the eighteenth century.

Two cast white metal buttons and a brass sleeve (cuff) link were

also found within the Almshouse squares and are attributed to the eighteenth century. Also recovered were one iron two-piece button, three milk glass buttons and two shell buttons. The iron, glass, and shell buttons date to the nineteenth century (Albert and Adams 1941: 60, 66; Luscomb 1967:80) and were recovered from disturbed contexts or from the upper nineteenth and twentieth-century stratigraphic soil levels at the site.

In summary, the buttons recovered from the Almshouse site give us a brief glimpse of the patterns of dress of the occupants. The clothes individuals wear (along with their buttons) can be an indicator of their economic and social status. The overwhelming presence of plain, utilitarian, self-made buttons at the site, manufactured primarily of bone and brass, clearly reflects the indigent status of the inhabitants. High quality buttons with decorated faces were apparently neither a priority nor an option of inmates and keepers alike.

Forty-four complete straight pins and three straight pin fragments wer recovered from the site. Nearly all of these specimens were found within the Almshouse foundation squares. These pins are made of brass and vary in size; they range in length from three-fourths of an inch to one and three-eights of an inch (see Table 4:2). The most common pin size recovered was 1-1/16th inch with 17 specimens and 1-1/8th inch with ten specimens. This artifact class suggests either sewing and the making of clothing by individuals or groups were carried out within the structure. However, the sample is too small to make a determination either way. The historical record appears to support the interpretation of a group activity. In 1736, the Common Council (1905 Vol. 4:305) provided for the purchase of material to be used in the Almshouse for "carding, knitting, spinning, Dressing Hemp or Flax." In

TABLE 4:2 DESCRIPTION OF STRAIGHT PINS

Size	Quantity
Fragments	3
3/4ths inch	1
7/8ths inch	2
15/16ths inch	3
1 inch	6
1-1/16th inch	17
1-1/8th inch	10
1-3/8ths inch	1

addition, the Common Council (1905 Vol. 4:310) established rules and regulations for managing the poor house which stated that children shall be employed "in spinning of wool, Thread, Knitting, Sewing or Other Labor most sutable [sic] to their Genius ...."

Miscellany

A collection of diverse artifacts that were not discussed under the categories of ceramics, glass, pipes or buttons was recovered from the site. Due to the low frequency of these specimens, there is insufficient data to permit us to make extensive interpretations. However, we have analyzed these items according to general morphology under various functional categories as indicated below:

Kitchen Group: Three kitchen utensils were recovered from the Almshouse stratigraphic levels: a pewter spoon handle, a bone handle, and a bone-handled knife (see Figure 4:8 and 4:9). Their context indicates that they date to the eighteenth century. Other utensils were found nearby in adjoining excavation units such as an iron knife blade fragment with tang, a pewter spoon minus its handle, and a fragment of a cast iron leg, possibly from a cooking pot. These artifacts, however, were found in disturbed or mixed contexts.

Finally, a sadd iron (used for ironing clothing) was recovered from excavation square N30 W10 Level 19. This square was located on the south side of the Almshouse but the specimen was found in a disturbed soil layer.

Furniture Hardware: Three artifacts within this category were found within the Almshouse levels and they give us a very brief glimpse of interior furnishings. We found a decorative brass lockplate, a brass ring possibly from a curtain or drapery fixture, and a three-piece

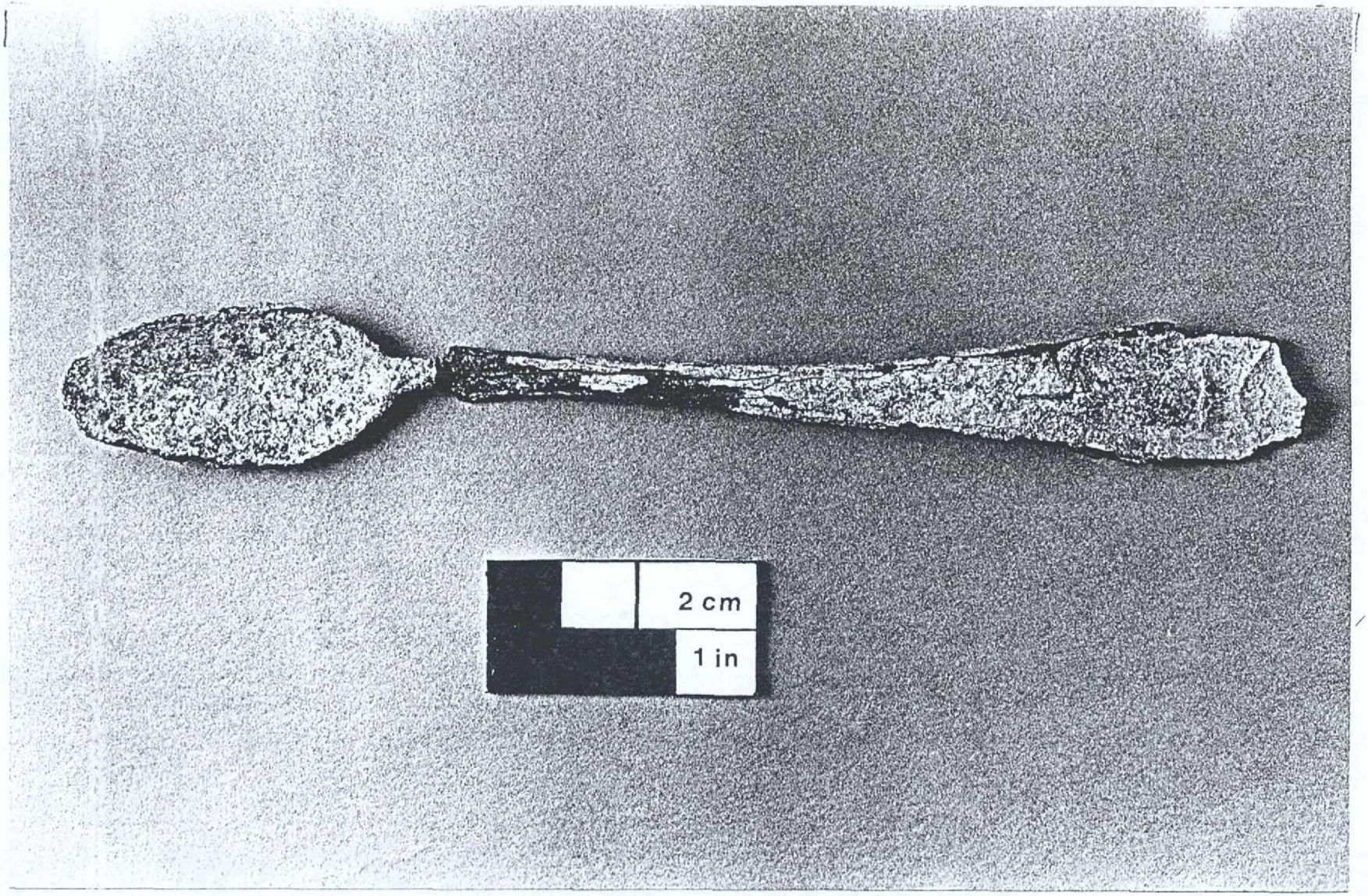

Figure 4:8 A pewter spoon in two pieces (Photo: Carl Forster).

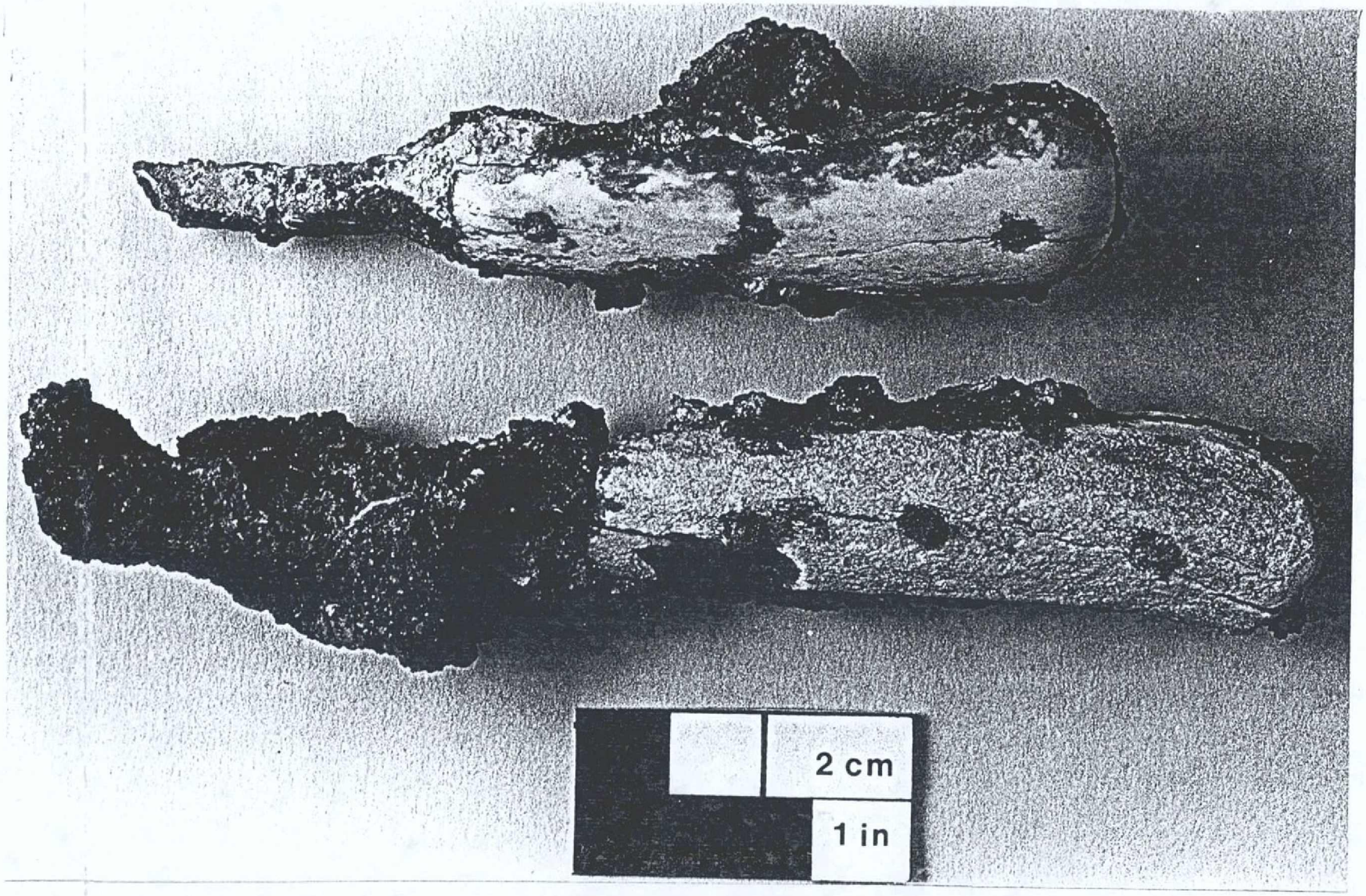

Figure 4:9 A bone handle and a bone-handled knife (Photo: Carl Forster).

brass furniture pull (see Figures 4:10 and 4:11).

Clothing Group: Most of the specimens in this group were found within the Almshouse squares but in mixed contexts. We recovered a brass belt buckle (1 1/8" x 1 1/4"), a brass buckle fragment, a brass belt buckle tang and a brass shoe buckle with iron tang from an eighteenth-century Almshouse level (see Figure 4:12). We also recovered a brass clothing hook, a brass thimble and a small iron scissor fragment. Several of the items within this category can be attributed to the eighteenth century with confidence.

Personal Items: Five (5) slate pencils were recovered from the site but only 1 was found within an undisturbed Almshouse level. A brass eye-glass frame was found in square N35 W10/15 but within a mixed context. In addition a decorative bone handle, probably lathe turned, was found on the surface of square N45 W20.

A total of four coins were unearthed in the Almshouse levels. Two of the coins contained the same engravings (see Figure 4:13). On the observe was a horse's head and neck over a plough with the legend "Nova Caesarea" and the date 1787. On the reverse side of the coin was the United States shield and the legend "E Pluribus Unum" over the shield. This coin, a cent, was issued in New Jersey (Noel Hume 1969:169). The third coin appeared to be an Irish half-penny which was issued from 1766 to 1783 (Noel Hume 1969:166). The obverse of this coin (see Figure 4:14) had a royal profile facing to the right with the legend "Georgivs" over the head. On the reverse side was a crowned harp with the letters "H" and "B", possibly for Hibernia (Ireland). The date was unidentifiable.

A fourth coin was also found within the Almshouse levels;

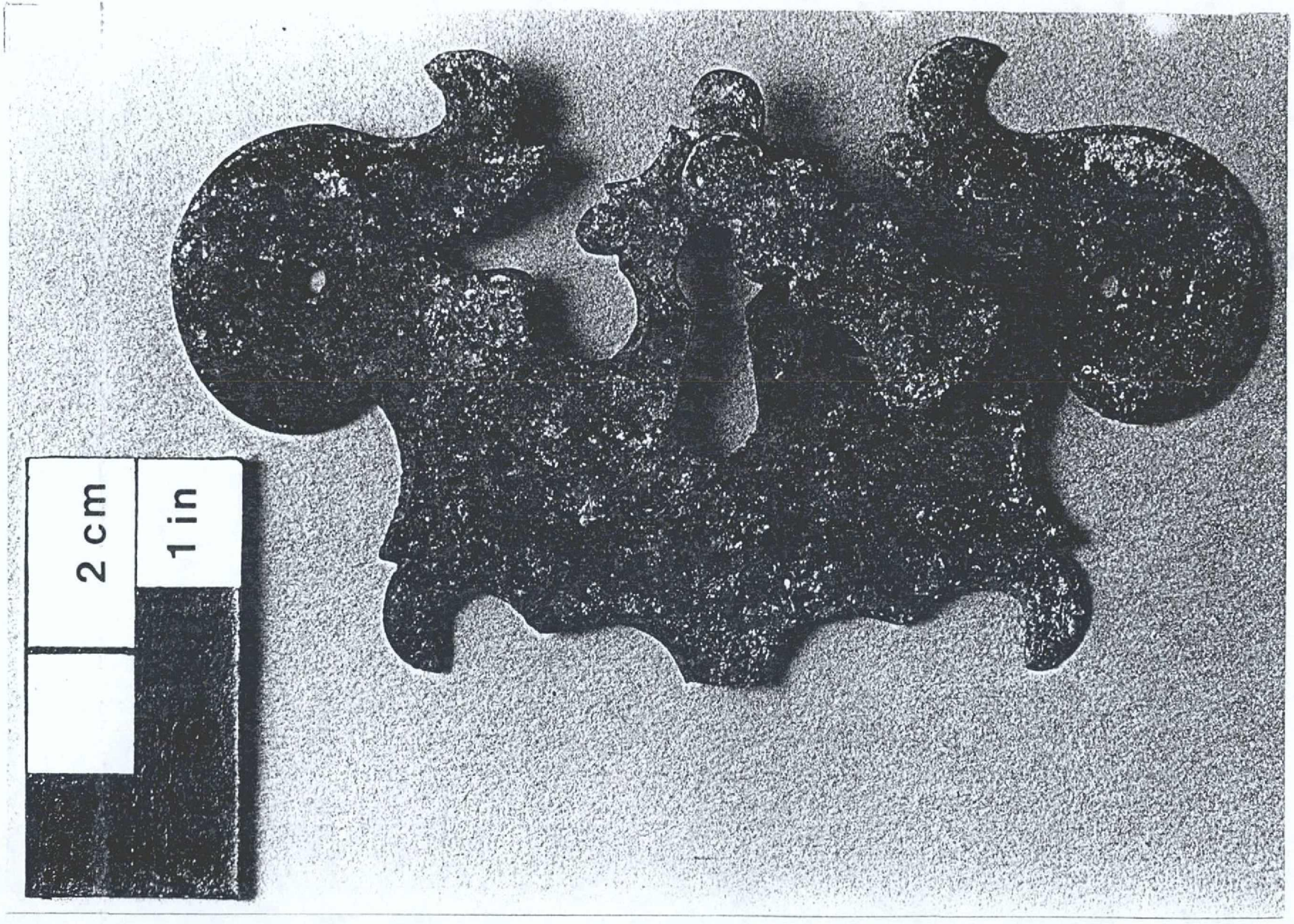

Figure 4:10 A decorative brass lockplate (Photo: Carl Forster).

Figure 4:11 A three-piece brass furniture pull (Photo: Carl Forster).

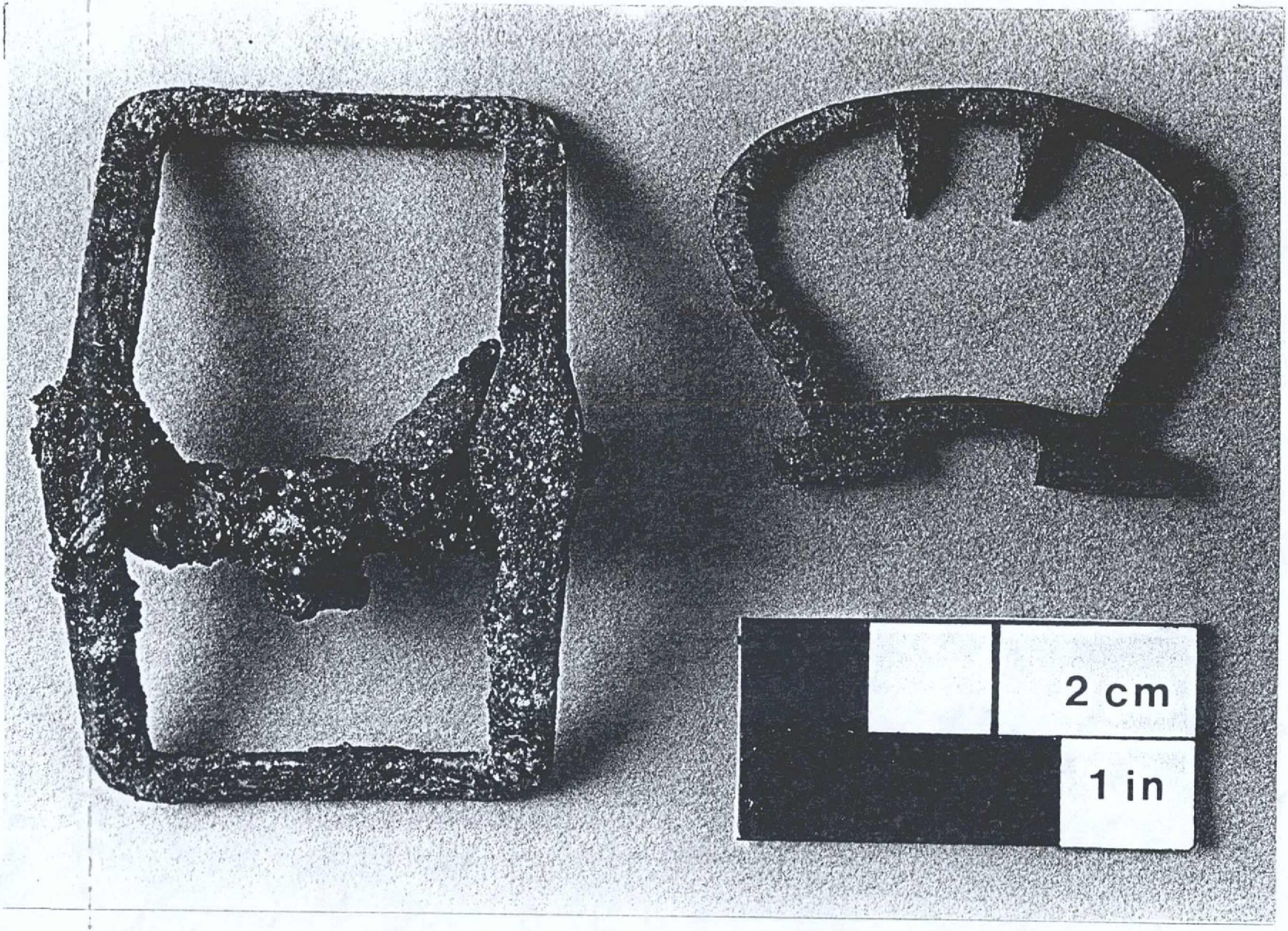

Figure 4:12 A brass belt buckle and a brass shoe buckle (Photo: Carl Forster).

Figure 4:13 Detail of 1787 coins. The reverse side (left coin) has the United States shield with the legend "E Pluribus Unum" over the shield. The obverse (right coin) has a horse's head and neck over a plough with the legend "Nova Caesarea" and the date 1787. The coins are cents issued by New Jersey in 1787 (Photo: Carl Forster).

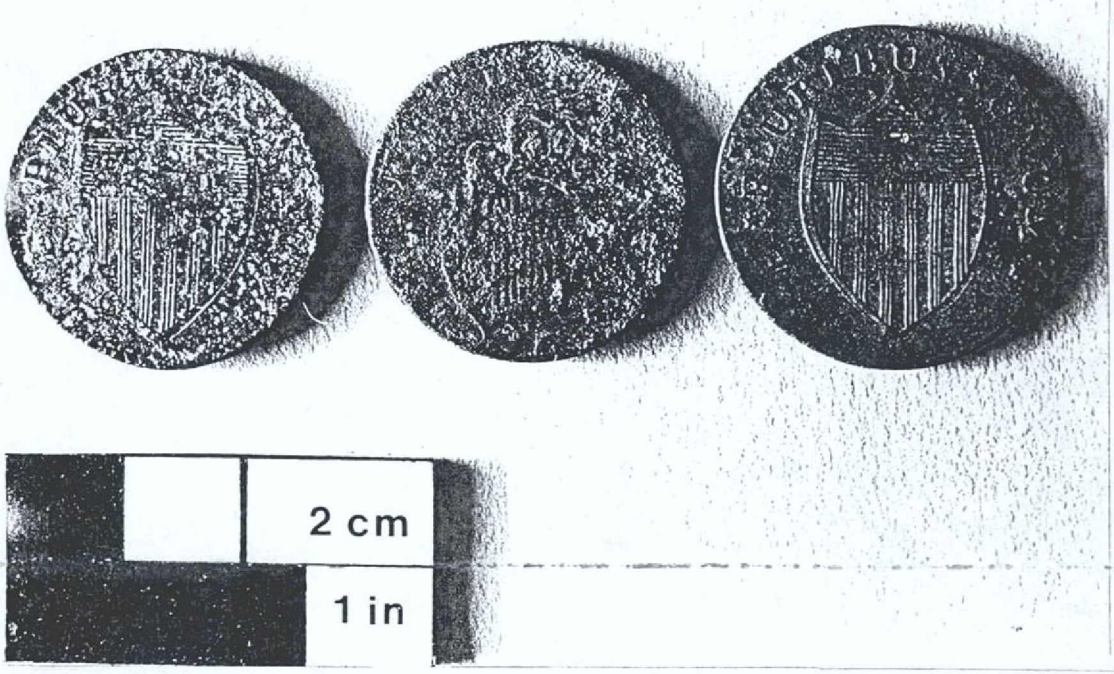

Figure 4:14 Three eighteenth-century coins. The left and right coins are 1787 New Jersey cents. The center coin is probably an Irish half penny issued between 1766 and 1783. The reverse side (shown in this photo) has a crowned harp (Photo: Carl Forster).

unfortunately, it was so badly eroded that it was unidentifable.

Activities Group: Ten artifacts that can be classified as toys were recovered from the site. We found 6 clay marbles, 3 stone marbles and a small clay "ball" with indentations on opposite sides.

Conclusions

The City Hall Park site contained 6,950 artifacts, of which 1,037 were associated with the Almshouse. Table 4:3 itemizes the total site deposits and Table 4:4 categorizes the assemblage from the Almshouse. The yard contained mixed deposits of eighteenth and nineteenth-century material; the mixed deposits are the result of the extensive intrusions of utility lines in the yard. The City Hall step area contained nineteenth-century material, as might be expected since it was an early nineteenth-century building.

The dates for the glass, clay smoking pipes, buttons and nails all confirm an eighteenth-century date for the Almshouse deposit. The ceramics date primarily from the last quarter of the eighteenth century. The deposit, according to a formula designed by Stanley South (1977) for classifying eighteenth-century artifact assemblages into functional categories, is a domestic deposit (see Table 4:4). Both the Almshouse (1736-1797) and the Upper Barracks (1757-1790) existed at the same time in the mid and late eighteenth century. However, there was nothing in the assemblage to suggest a military deposit or a military building. Because the Almshouse was purposefully demolished in 1797, the deposit contained a tremendous amount of architectural debris. The large quantities of brick, mortar, and plaster were not tabulated into our individual artifact count; however, even without this material the

Table 4:3 The total artifact assemblage from the City Hall Park site placed in functional categories.

Entire Site Class Name	# of Artifacts	% of Artifacts
Kitchen and Dining Group		
1. Ceramics	3462	49.8
2. Bottles	200	2.9
3. Table Glass	99	1.4
4. Cutlery (spoons, knives, corkscrew)	6	0
5. Kitchenware (stove leg)	1	0
Total	3768	54.2
Architecture Group		
1. Window Glass	515	7.4
2. Nails	1754	25.2
3. Spikes	3	0
4. Construction Hardware (hinges, latch, shutterhook)	4	0
5. House Parts (lighting-chandelier)	1	0
Total	2277	32.7
Clothing Group		
1. Buttons	61	.9
2. Button Blanks	76	1.1
3. Straight Pins	47	.7
4. Thimbles	1	0
5. Buckles	5	.1
6. Leather	1	0
Total	191	2.7
Personal Group		
1. Personal Items (pencils, coins, eyeglasses)	9	.1
2. Tobacco Pipes	337	4.8
Total	346	5
Activities Group		
1. Construction Tools (files, blades)	13	.2
2. Furniture Parts (pulls, lock plates)	2	0
3. Toys (marbles)	10	.1
4. Misc. Hardware (hooks, rings, springs, nuts, bolts, screws, washers, iron bars, wire)	15	.2
5. Unidentifiable Metal (function/type)	326	4.7
6. Other (iron, scissor)	2	0
Total	368	5.3
Assemblage Total	6950	100

Table 4:4 The functional categories for the Almshouse deposit from the City Hall Park site.

Almshouse Levels Class Name	# of Artifacts	% of Artifacts
Kitchen and Dining Group		
1. Ceramics	244	23.5
2. Bottles	28	2.7
3. Table Glass	32	3.1
4. Cutlery (spoons, knives, corkscrew)	3	.3
5. Kitchenware (stove leg)	0	0
Total	307	29.6
Architecture Group		
1. Window Glass	116	11.2
2. Nails	395	38
3. Spikes	0	0
4. Construction Hardware (hinges, latch, shutterhook)	3	.3
5. House Parts (lighting-chandelier)	0	0
Total	514	49.5
Clothing Group		
1. Buttons	17	1.6
2. Button Blanks	26	2.5
3. Straight Pins	9	.9
4. Thimbles	0	0
5. Buckles	2	.2
6. Leather	0	0
Total	54	5.2
Personal Group		
1. Personal Items (pencils, coins, eyeglasses)	3	.3
2. Tobacco Pipes	71	6.8
Total	74	7.1
Activities Group		
1. Construction Tools (files, blades)	9	.9
2. Furniture Parts (pulls, lock plates)	2	.2
3. Toys (marbles)	2	.2
4. Misc. Hardware (hooks, rings, springs, nuts, bolts, screws, washers, iron bars, wire)	4	.4
5. Unidentifiable Metal (function/type)	71	6.8
6. Other (iron, scissor)	1	.1
Total	89	8.5
Assemblage Total	1037	100

architectural group composed almost 50% of the collection. The second largest category of artifacts (29%) were in the kitchen and dining group. The Almshouse deposit suggests that people were both preparing food and consuming food in this building. In addition, some button-manufacturing was being done on a small scale; only 5% (clothing category) of the collection comprised the button and button-making group.

CHAPTER FIVE: THE HISTORY OF THE ALMSHOUSE

Sherene Baugher
Robert W. Venables

CHAPTER FIVE: HISTORY OF THE ALMSHOUSE, 1736-1797

Like any significant institution, the Almshouse has a history which is a microcosm of broader American social and cultural history. The purpose of this short essay is to place the Almshouse and its inhabitants in their historical contexts and to provide some details about the architecture of this specific Almshouse. Readers seeking the history of the Almshouse in greater detail should consult Robert Cray's Paupers and Poor Relief in New York and Its Rural Environs, 1700-1830 (1988a).

It is misleading to view the Almshouse as New York City's "first" homeless shelter. While local pride in every era always enjoys claiming "firsts," it is a fact of history that nothing springs from a vacuum and everything evolves from preceeding efforts. The direct antecedents in this case lie in two early colonial institutions: hospitals and workhouses (also called "almshouses") and in the practice of housing the poor in private homes (Miller 1976:306-307).

The first known colonial workhouses were established, appropriately enough, in Dutch New Amsterdam in 1653 (Bridenbaugh 1971:84) and 1655 (Stokes 1919-1928, 4:156). The Pilgrims in Massachusetts opened a workhouse in 1658. In 1686, the Dutch Reformed Church of Albany built an almshouse (Huey 1987: 20).

In 1722, Parliament passed a law permitting parishes in Britain to establish workhouses, and this law may have been used in the colonies as a precedent for eighteenth-century workhouses. However, the English precedent for a workhouse dates long before the 1722 Act of Parliament;

in 1553, a hospital was established near the "Bride's Well" in London, which came to be known as "Bridewell" (OED 1971, Vol. 1:274-5). New York City continued to call its workhouse, built in 1775, the "Bridewell" even after the American Revolution (Kouwenhoven 1972:955, 111).

In 1734, the New York City colonial government decided to build an almshouse/workhouse; the building was erected in 1735 and opened in 1736 (Common Council Minutes 1905 Vol. 4:236; 240-241; 305). Since there was almost always a labor shortage in colonial America, only the most desperate were placed in institutions of this kind (Miller 1976: 306).

Colonial hospitals often evolved from the workhouses or almshouses. Philadelphia General Hospital began as the infirmary of an almshouse in 1732. Bellevue in New York City began in 1739 as a part of the 1736 workhouse. Benjamin Franklin helped found the first colonial hospital which was not associated with a workhouse: the Pennsylvania Hospital in Philadelphia, founded in 1751 (Miller 1976:306).

There are complex reasons why colonial almshouses and hospitals are primarily a phenomenon of the eighteenth century, with just a few seventeenth century precedents. The most basic reason is the fact that, until the 1730s, the number of colonists was relatively small. In 1688, for example, the population of all English colonies, north to south (including formerly Dutch New York) totalled only 200,000. By 1715, that population had more than doubled, but was still only 434,600. Yet by 1754, the English colonies totalled 1,485,634, and by the Revolution, 2.6 million. In this population total, the urban

dwellers never were more than five percent, so colonial "cities" make a startling contrast to the teeming nineteenth-century urban environment. In 1800, the United States had a population of 5.3 million; in 1860, 31.4 million; and in 1900, 75.9 million (Morris, ed. 1982:643-649). The growth of the number and size of institutions serving the disadvantaged is linked to the needs of a growing population which, because of its growth, can, in turn, better afford larger institutions of charity. Urban growth for New York City as compared to its rivals, Boston and Philadelphia (Morris, ed. 1982:648-649), charts the triumph of New York port just as surely as economic statistics:

Table 5:1--Population of Three Port Cities

Year	New York	Boston	Philadelphia
1730	8,500	13,000	8,500
1750	13,300	15,731	13,400
1770	21,000	15,520	28,000
1790	33,131	18,038	42,444
1820	123,700	43,300	112,800

Other factors in colonial America caused the establishment of institutionalized charities. When colonial populations were smaller, families and local churches tended to the less fortunate. But by the

1700s, the American colonies already were a pluralistic mix of religions and ethnic identities, diffusing the effectiveness of any local church attempting to address community-wide issues. While pluralism made for a more diverse and tolerant colonial society, pluralism hampered the effective and efficient centralization of charities which had been traditionally, since the Middle Ages, a responsibility of institutionalized religion (the "established" or "state" church) (cf. Kammen 1980:passim). Furthermore, the eighteenth-century Enlightenment, based on rational rather than religious solutions to human problems, added philosophical weight to the necessity of gradually secularizing institutionalized charities (cf. Wertenbaker 1949:1-17). The choices of sponsorship for such charities thus primarily focused on either government ("public") or private endeavor.

Historian Steven Ross (1988:149) in an article on New York's Almshouse notes that between 1729 and 1737 the City was in an economic depression and that "major outbreaks of measles in 1727 and smallpox in 1731 and 1732 added further to the numbers of the worthy poor." The growing numbers of poor in New York forced the City government to develop an institutional means of caring for them and in 1736, New York City's first municipal Almshouse/workhouse opened its doors. The number of poor who entered the Almshouse increased and within ten years the government had enlarged the structure. The original building cost the City two hundred and two pounds to build in 1735; by 1746 the City had to allocate another two hundred pounds to enlarge the Almshouse (Common Council Minutes 1905 Vol. 4:250-257 and Vol. 5:171).

The Almshouse served both as a shelter for those poor who were sick, disabled or elderly, and as a workhouse/house of corrections for those people considered able to work including, "all disorderly persons, parents of Bastard Children, Beggars, Servants running away or otherwise misbehaving themselves, Trespassers, Rogues, Vagabonds" (Common Council Minutes 1905 Vol. 4:308-309). Historian Robert Cray, Jr. (1988b:179) notes that with the establishment of the Almshouse:

> the institutionalized poor now lived in a structured environment among the criminal and disorderly. Such a situation suggests that city officials were beginning to view crime and poverty as related phenomena demanding similar correctional methods. By locating the almshouse on the northern outskirts of the city, the municipal government kept the inmates in geographic and social exile from the rest of society.

It is interesting to note that after City Hall Park was chosen as the site for the new City Hall there was a slow but steady relocation of the sick, poor, disorderly, and criminals from this area to other locations. By 1816, all poor were removed from City Hall Park to the new Almshouse at the Bellevue Hospital complex (Stokes 1915-1928 Vol. 6:537).

The Common Council Minutes provide detailed information about the architecture of the Almshouse. The original dimensions were "fifty Six foot long, twenty four foot wide from Outside to Outside, two Stories high, with A good Cellar" (Common Council Minutes 1905 Vol. 4:241). The Almshouse, built between April 1735 and March 1736, was made of brick on a stone foundation with cedar posts, "inch and a half white Pine boards," and two gutters; other construction materials included twenty-seven loads and 314 bushels of lime, two bushels of white lime and 200 laths (Common Council Minutes 1905 Vol. 4:250-251; 259-260;

282-286; 289-290). In addition, a well was dug to provide fresh water for the Almshouse (Common Council Minutes 1905 Vol.4:260).

The Almshouse/workhouse was completed in March 1736. As early as the next month, April of 1736, additions were made to the site complex. From 1736 to 1790 additional structures serving the Almshouse are known to have been constructed in the surrounding area:

1) a kitchen, oven, and wash house were built in April 1736;
2) a stable was built in November 1736;
3) an additional building was added to serve as a hospital in 1739;
4) the Almshouse was enlarged in 1746;
5) two wooden cisterns were sunk in 1749;
6) a fenced burial place for deceased Almshouse residents was established to the east of the Almshouse in 1757;
7) an addition to the kitchen was made in 1768;
8) a separate small shed to be used as a washhouse was built and an additional cistern was dug, both in 1769;
9) a stable and storehouse were built in 1786;
10) a new well was sunk in the Almshouse yard in 1790 (Common Council Minutes 1905 Vol. 4:260;459; 1905 Vol. 5:269; 1905 Vol. 6:85-86; 1905 Vol. 7:172, 173; 1917 Vol. 1:550).

Historic maps were evaluated to determine the location of the above-mentioned structures. The Bradford map, 1730, is the earliest map which depicts a structure on the northern portion of City Hall (see Figure 5:1). The only structure identified on the Bradford map is located along the east of the present day Broadway near the intersection of Murray Street. This building is located east of the

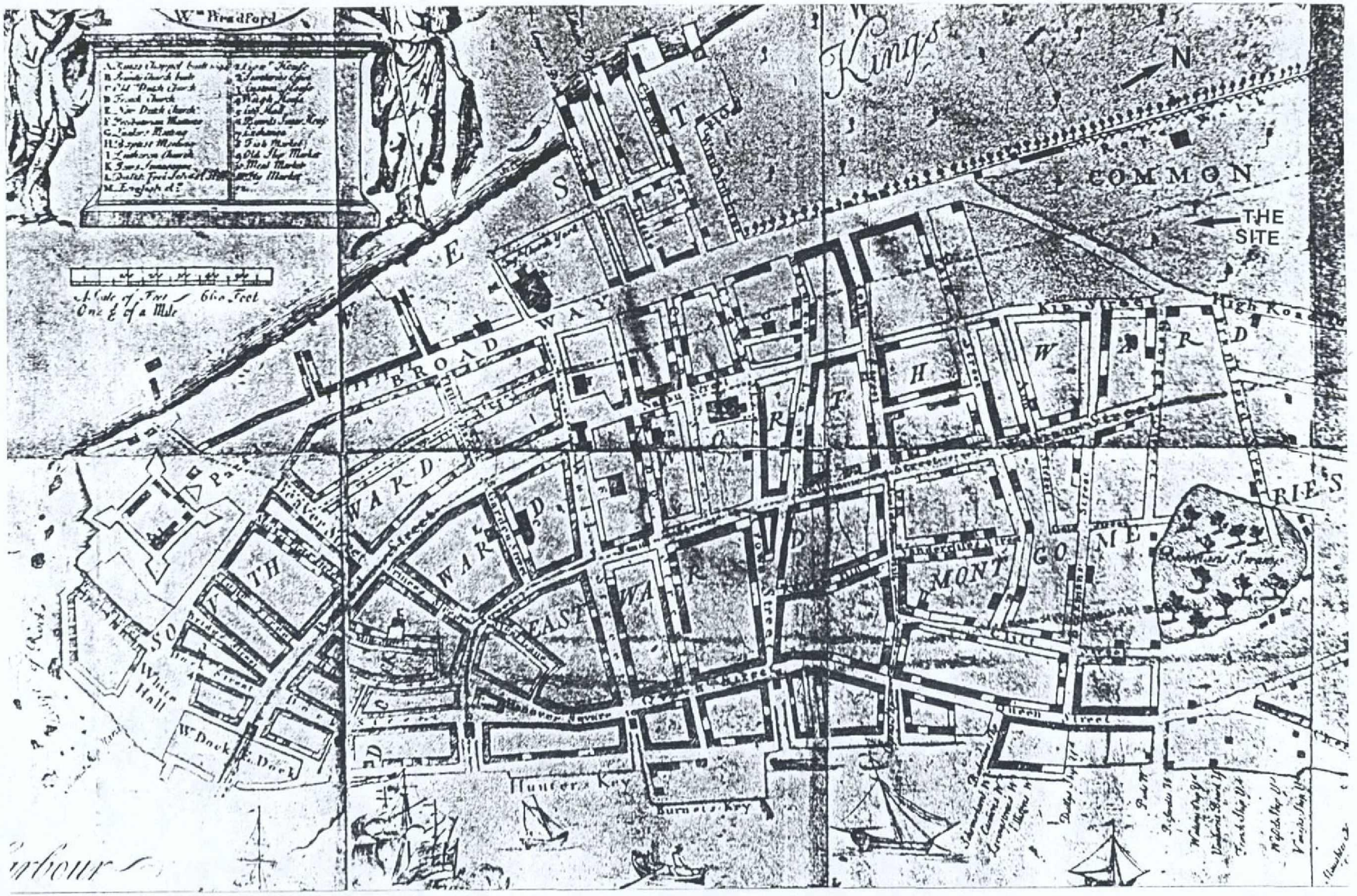

Figure 5:1 A Plan of the City of New York from an Actual Survey made by James Lyne (The Bradford Map or the Lyne Survey), cartographer unknown; 1731, depicting 1730 (Stokes, 1915-28, vol. I, pl. 27).

site of the 1775 Bridewell (workhouse), and well beyond the bounds of the Almshouse site. The building on the Bradford map is depicted on the Plan of the City of New York in the Year 1735; it is located in an enclosed area noted as "John Ell's Gardin" (see Figure 5:2). Neither map depicts any structures within the project area nor near the location of City Hall or Tweed Court House.

A Plan of the City and Environs of New York (Grim's Plan), depicting New York in 1742-44, is the first map depicting the Almshouse. On Grim's Plan the Almshouse is located near the site of present-day City Hall; no other structures are depicted on this map (see Figure 5:3). Grim's Plan provides an illustration of the Almshouse (this is discussed in more detail in the following chapter). The Maerschalck or Duyckinck Plan of New York in 1754 depicts three structures in the northern portion of City Hall Park. One building is identified as the Almshouse, a second structure noted as the "Powder House" (built in 1747), and the third structure shown along the east side of Broadway in the same location as the building on "John Ell's Gardin" from the previous maps is not identified (see Figure 5:4).

The Montresor Plan, published in 1775 but depicting New York in 1766, identifies both major buildings and outbuildings in City Hall Park (see Figure 5:5). It is the only eighteenth-century map to provide this detailed information. In 1765, General Thomas Gage ordered Captain John Montresor to undertake the survey, which was made between December 16, 1765 and February 8, 1766 (Stokes, 1915-28, Vol. 1:339). The Montresor Plan identifies the location of the Almshouse, the 1757 Soldier Barracks, the Powder Magazine (noted as "Powder House" on the 1754 map, see Figure 5:4), and the 1759 gaol. The map also

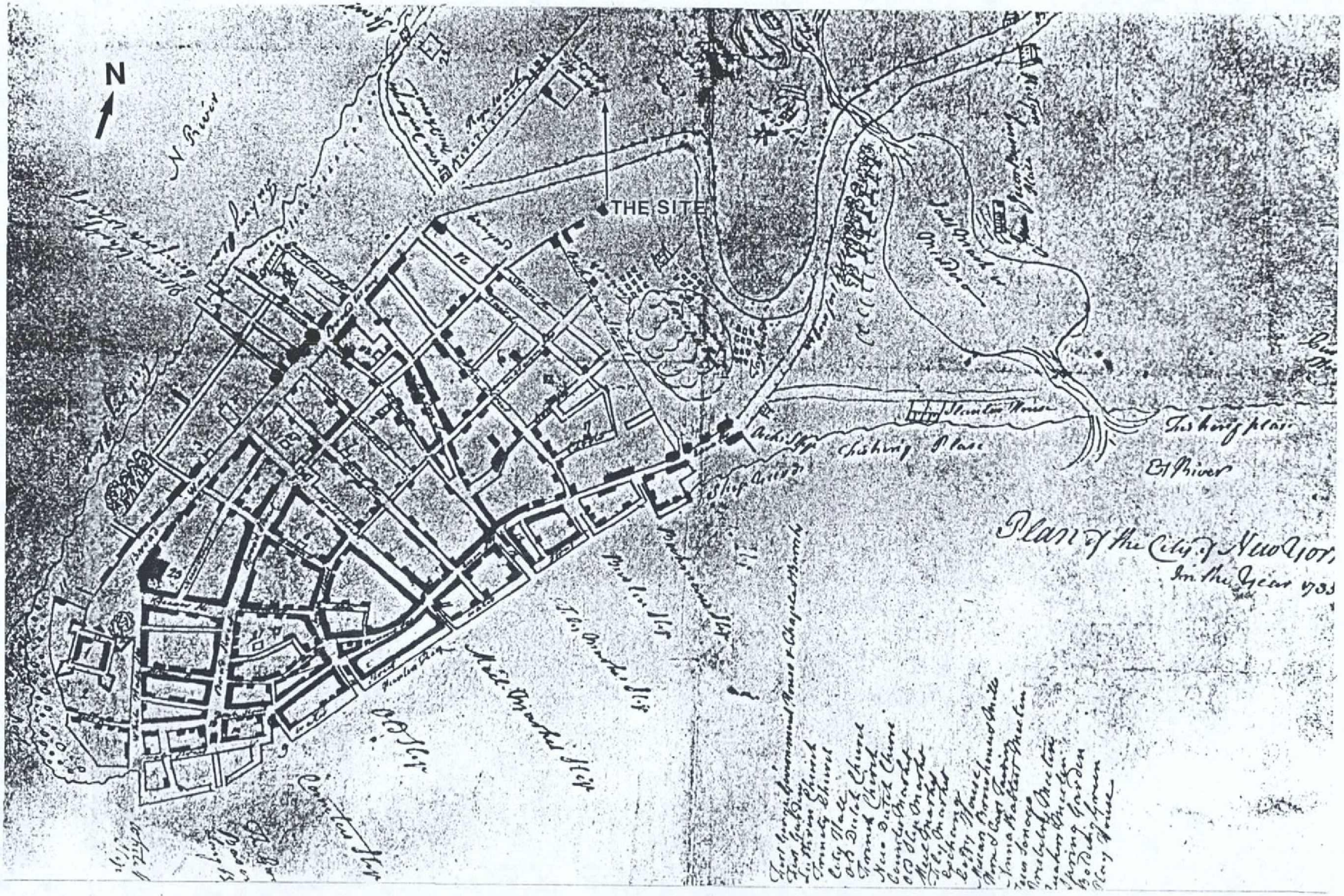

Figure 5:2 Plan of the City of New York in the Year 1735, cartographer unknown, 1735, depicting 1732-5 (Stokes, 1915-28, vol. I, pl. 30).

Figure 5:3 A Plan of the City and Environs of New York (Grim's General Plan) by David Grim, 1813, depicting 1742-4 (Stokes, 1915-28, vol. I, pl. 32a). This is the earliest known depiction of the Almshouse.

Figure 5:4 A Plan of the City of New York from an actual Survey Anno Domini M, DCC, LV (The Maerschalck or Duyckinck Plan), by F. Maerschalck, 1755, depicting 1754 (Stokes, 1915-28, vol. I, pl. 34).

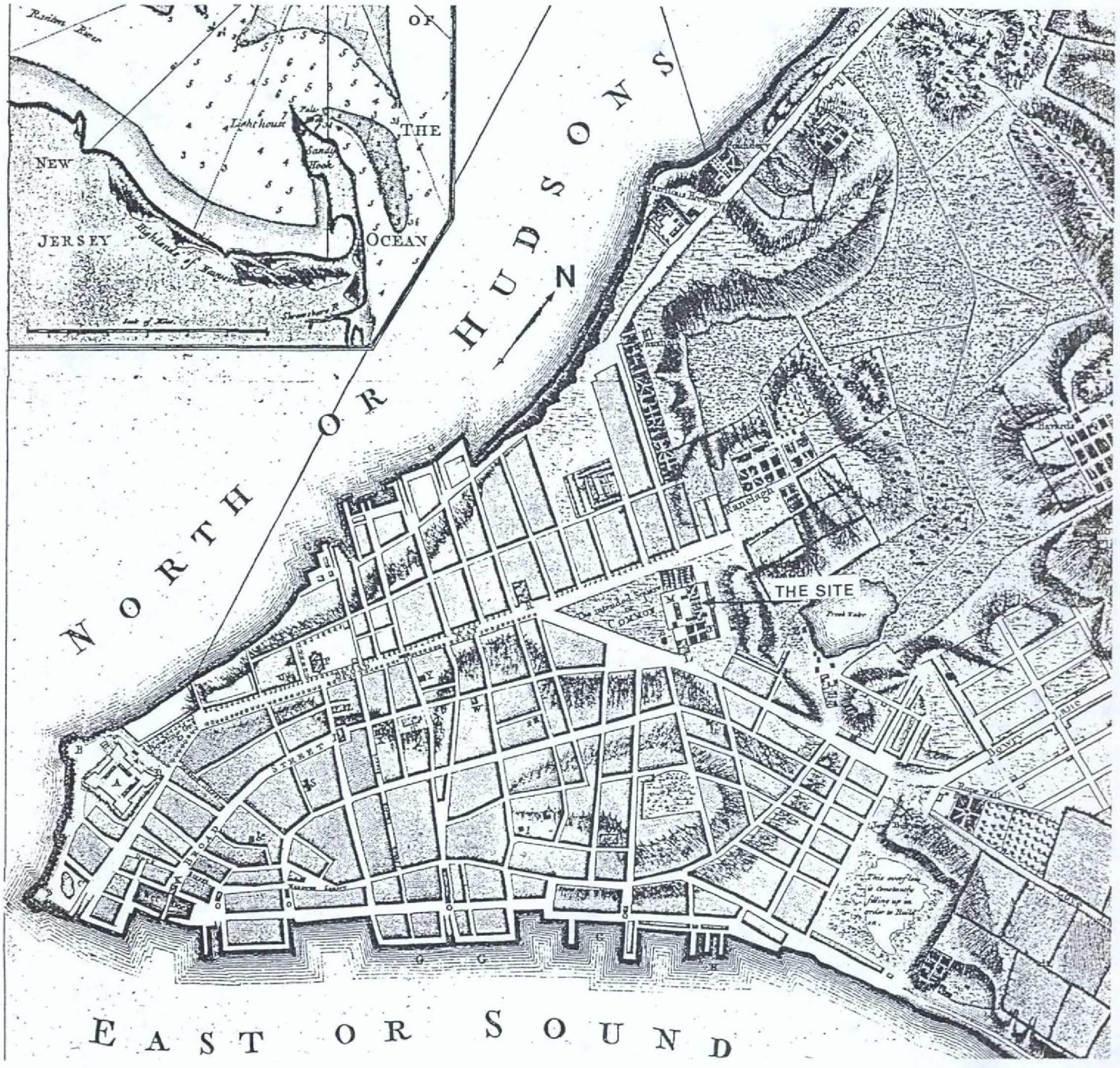

Figure 5:5 A Plan of the City of New-York and Its Environs to Greenwich, on the North or Hudsons River, (Etc.) (The Montresor Plan), by John Montresor, 1775, depicting 1766 (Stokes, 1915-28, vol. I, pl. 40).

locates two rectangular buildings north of the Almshouse which may be the 1736 kitchen and 1739 hospital structures. In addition, two small buildings are depicted on the map, one north of the Almshouse orchards and close to the Soldier Barracks, the other located near the southeast corner of the Almshouse. The small building to the north could be the 1736 stable. The Common Council Minutes do not discuss any other support structures for the Almshouse during this period. It is possible that the structure to the southeast of the Almshouse is the 1735 well. Orchards are depicted to the north and west of the Almshouse, and four garden plots are shown to the east of the Almshouse. The Common Council Minutes (1905 Vol. 4, 324) note that as early as May 1736 gardens were established for the Almshouse.

In 1766 Lieutenant Bernard Ratzer, an assistant engineer to General Thomas Gage, compiled data for both the Ratzer Map and Ratzen Plan (Stokes 1915-28, vol. 1:341-43). Stokes (1915-28, vol. 1:341) notes that the Ratzen Plan (on which the Ratzer Map is based) is by Bernard Ratzer; "no mention can be found in the records of the name 'Ratzen,' which is no doubt an engraver's error." The Ratzer Map, issued in 1776, is an updated version of the Ratzen Plan and it contains buildings not depicted on the Plan (Stokes 1915-28, vol. 1:341 and 343). For City Hall Park, both the Ratzer Map and Ratzen Plan depict the Almshouse, Gaol, and Barracks in the same location as depicted on the 1766 Montresor Plan (see Figures 5:5, 5:6, and 5:7). The Ratzer Map and Plan both show orchards on the west side of the Almshouse and gardens to the north of the building; these gardens and orchards were also depicted on the Montresor Plan. However, the gardens to the east of the Almshouse depicted on the Montresor Plan are not shown on

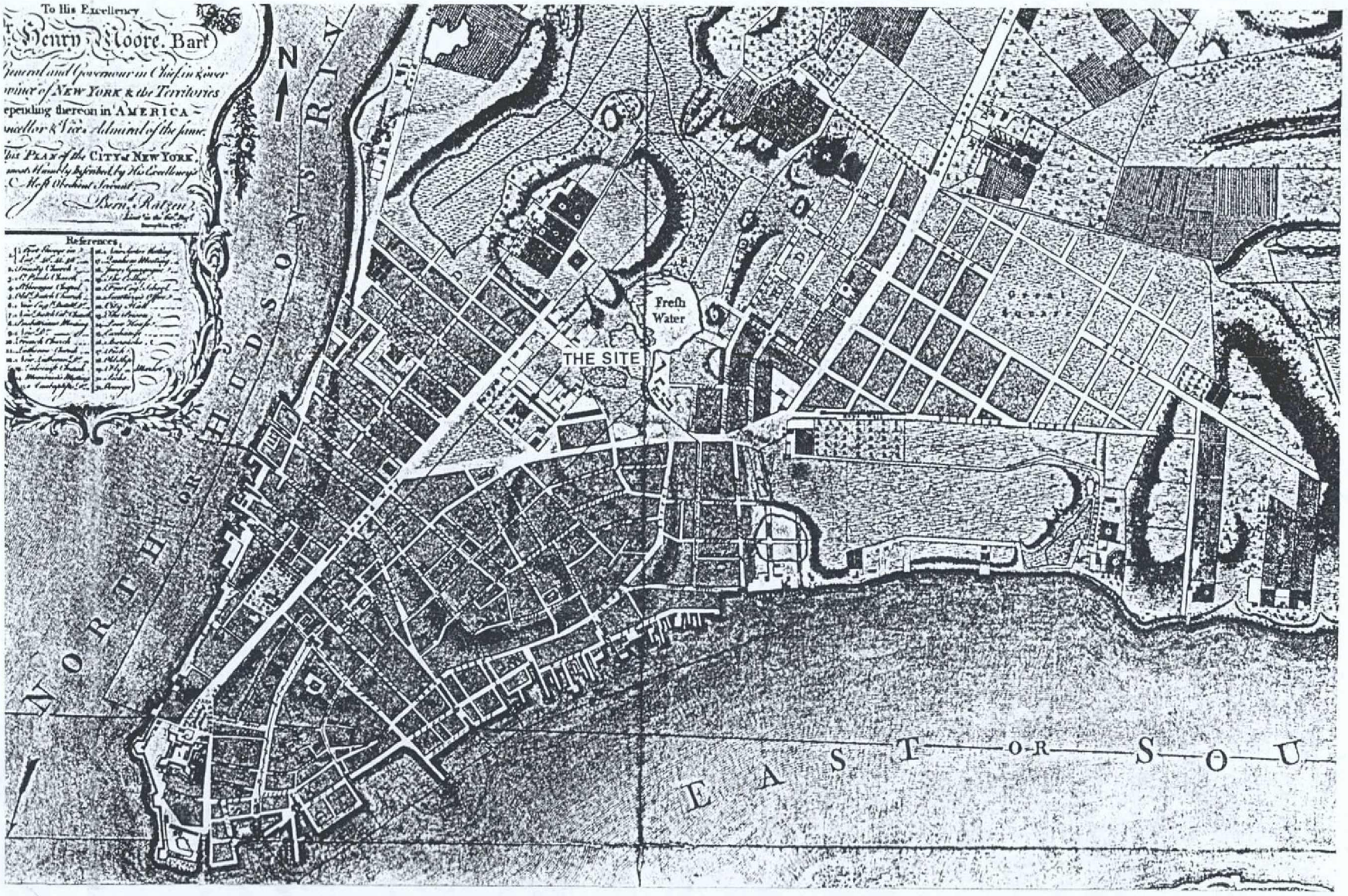

Figure 5:6 Plan of the City of New York (The Ratzen Plan), by Bernard Ratzen (Ratzer), 1776, depicting 1766-7 (Stokes, 1915-28, vol. I, pl. 42).

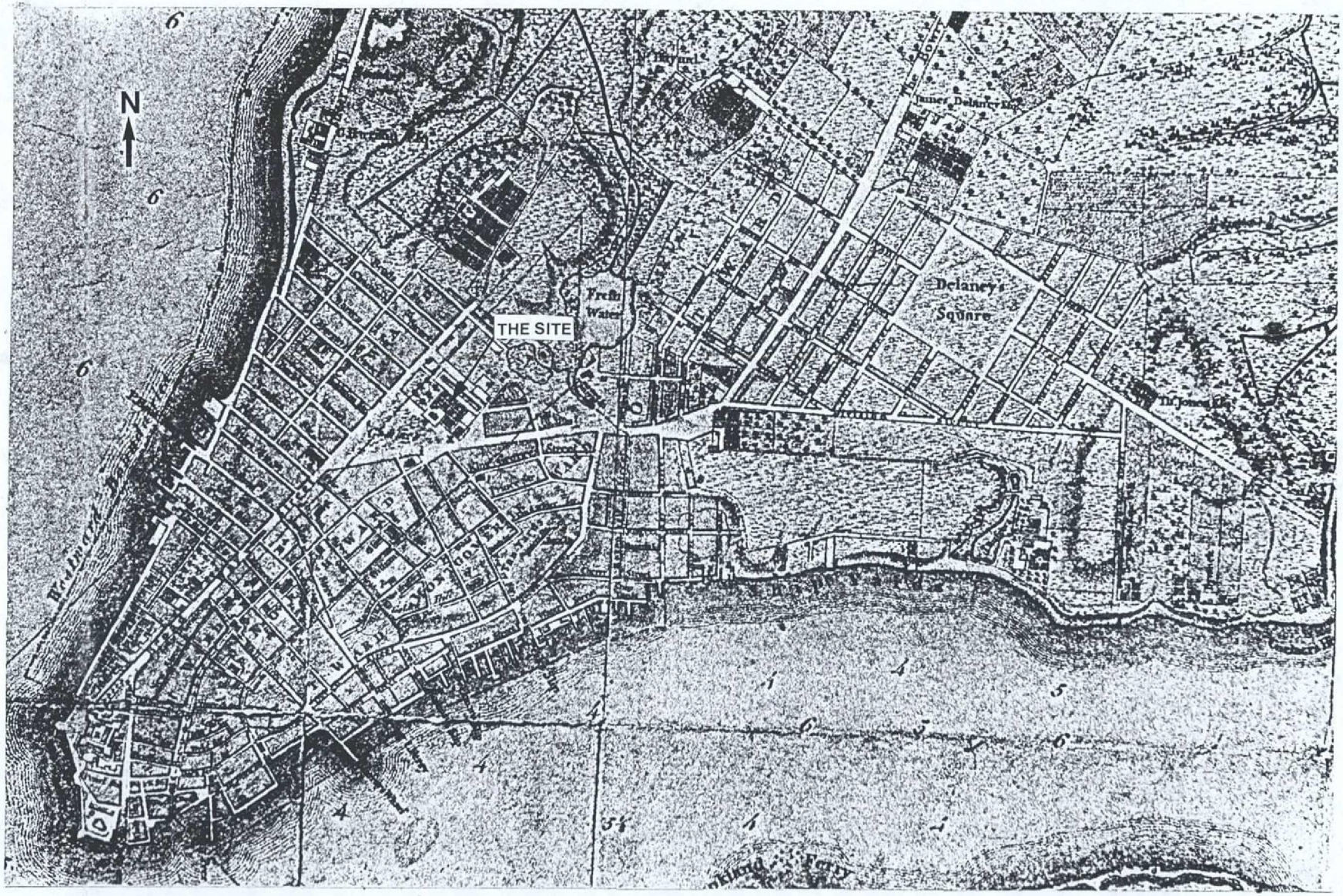

Figure 5:7 Plan of the City of New York, In North America (The Ratzer Map), by B. Ratzer, 1776 (Stokes, 1915-28, vol. I, pl. 41).

Ratzer's Map or Plan. The Ratzer Map and Plan do not depict minor structures or outbuildings in City Hall Park except for one structure to the rear of the western end of the Almshouse (also depicted on the Montresor Plan). This structure may be the 1739 hospital which serviced the Almshouse.

The 1796 Taylor-Roberts Plan is the last map which depicts the Almshouse (see Figure 5:8). The Taylor-Roberts Plan provides only a very general location of the main structures on City Hall Park, that is, the Almshouse, Gaol, and Bridewell. The Upper Barracks, demolished in 1790, is not shown on the map. However, the drawing of the Almshouse, on this map, is a useful source of architectural information (which will be discussed in the following chapter).

Major changes to the City Hall Park occurred after the Revolutionary War. In 1787, the government ordered that the Barracks (located on the site of the Tweed Court House) be altered and used as a hospital for the sick inmates of the Almshouse (Common Council Minutes 1917 Vol. 1: 335). The Barracks were only used as a hospital for three years, and in January 1790 the government sold the Barracks with the provision that the purchaser would have to remove all building material by June 1790 (Common Council Minutes 1917 Vol. 1:516). By 1794, the sick were removed from the Almshouse and sent to Bellevue Hospital (Stokes 1915-1928 Vol. 6:448). The site of the Bellevue Hospital complex at present-day 25th Street and the East River was in 1794 considerably north of the city boundaries.

In addition to the hospital to care for the sick, there was also a concern for public health and sanitation needs of the Almshouse. In

Figure 5:8 A New and Accurate Plan of the City of New York in the State of New York in North America, by B. Taylor, 1797, depicting 1796 (Stokes, 1915-28, vol. I, pl. 64).

1788, the government ordered the construction of a "sewer for conveying the filthy Water from the Goal [sic] Alms House and Bridewell, be made from the front instead of the Rear of those buildings & that the same be carried down Murray Street"; the drain, which emptied into the Hudson River, was 2000 feet long with an additional 260 feet for conductors from the buildings to the main drain (Common Council Minutes 1917 Vol. 1:377; 461-2). In 1790, the government ordered that a "large Sink of 30 feet in length and eight feet in breadth" be built near the Gaol for carrying off filthy water from the Gaol, Almshouse and Bridewell (Common Council Minutes 1917 Vol. 1:539). Through the use of the sink hole and drain the City officials hoped to resolve the sanitation problems. The remnants of these drains were probably destroyed by the construction of the subways in City Hall Park.

In June 1797 the government issued an order to take down the Almshouse, and in August 1797 they attempted to salvage some material for reuse in a new structure to be built for the superintendant of the new potters field burial ground at what is now Washington Square Park (Common Council Minutes 1917 Vol. 2:343 and 374; Stokes 1915-1928 Vol. 6:337-338). In May 1797, inmates of the Almshouse were moved to the second Almshouse, built on the site of the Upper Barracks. The Goerck-Mangin Plan, issued in November 1803, shows that the foundation of the new City Hall is located in the vicinity of the site of the first Almshouse (see Figure 5:9). The second Almshouse, erected in 1797, is depicted on this map in the site of the former Barracks. The second Almshouse had been used for only twenty years when, in 1816, all inmates were moved to the third Almshouse at the Bellevue Hospital Complex (Stokes 1915-1928, Vol. 6:537).

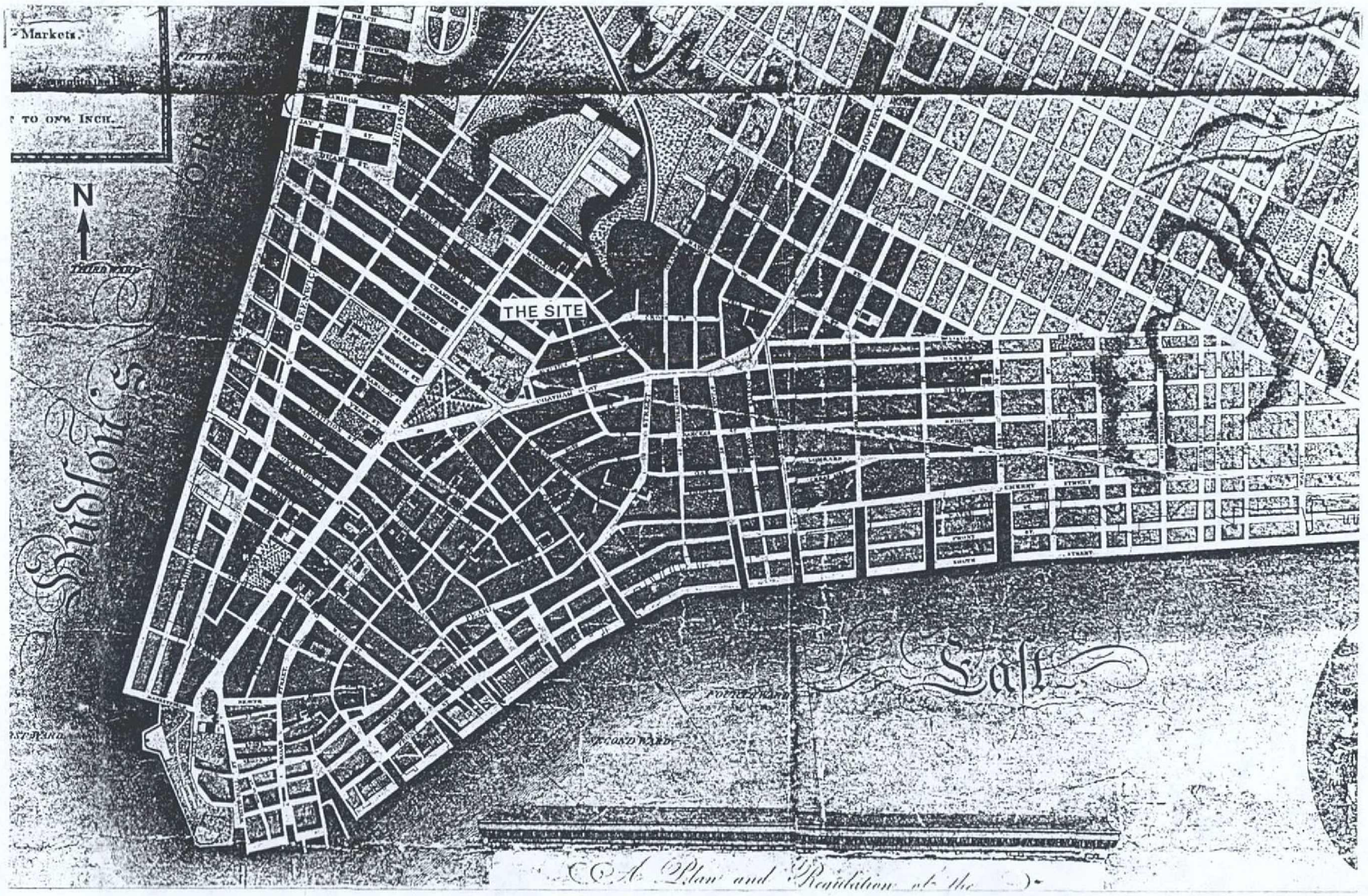

Figure 5:9 A Plan and Regulation of the City of New-York (Etc.) (The Goerck-Mangin Plan), by Casimir Th. Goerck and Joseph Fr. Mangin, 1803, depicting 1799 (Stokes, 1915-28, vol. I, pl. 70).

In the first quarter of the nineteenth century, the northern portion of City Hall Park was changed from a location to house the poor and criminals to a government center. Artist Arthur J. Stansbury depicted the site in approximately 1825 (see Figure 5:10). The new City Hall is on the site of the first Almshouse and all the Almshouse outbuildings are gone. The second Almshouse (on the site of present-day Tweed Court House), as depicted by Stansbury, is identified by a sign on the building as the "American Museum." The building with the cupola (in the middle of the picture) is the 1747 jail/gaol. An 1826 aquatint of City Hall, by artist W.G. Wall, depicts the boarded up windows of the Bridewell (see Figure 5:11).

In terms of the City Hall Park archaeological excavation, the most important documented structure is the 1736 kitchen. On April 15, 1736 the government ordered a committee to employ workers "for Building a Kitchen, Oven and Washouse to the said Workhouse"; the kitchen was made of materials similar to the main structure, that is, it contained stone, brick, and wood (Common Council Minutes 1905 Vol. 4:319 and 331). It is not clear from the records if the kitchen was an addition to the Almshouse or a separate but architecturally compatible structure. In 1768, the government ordered that "a small addition be made to the Kitchen of the poor House" (Common Council Minutes 1905 Vol. 7:123). The documentation that suggests that the kitchen may have been a separate structure is from the Montressor Plan, a map depicting New York in 1766. The Montresor Plan depicts two long rectangular buildings, between twenty-five and thirty feet in length, located north of the Almshouse. The site easternmost of the two structures is

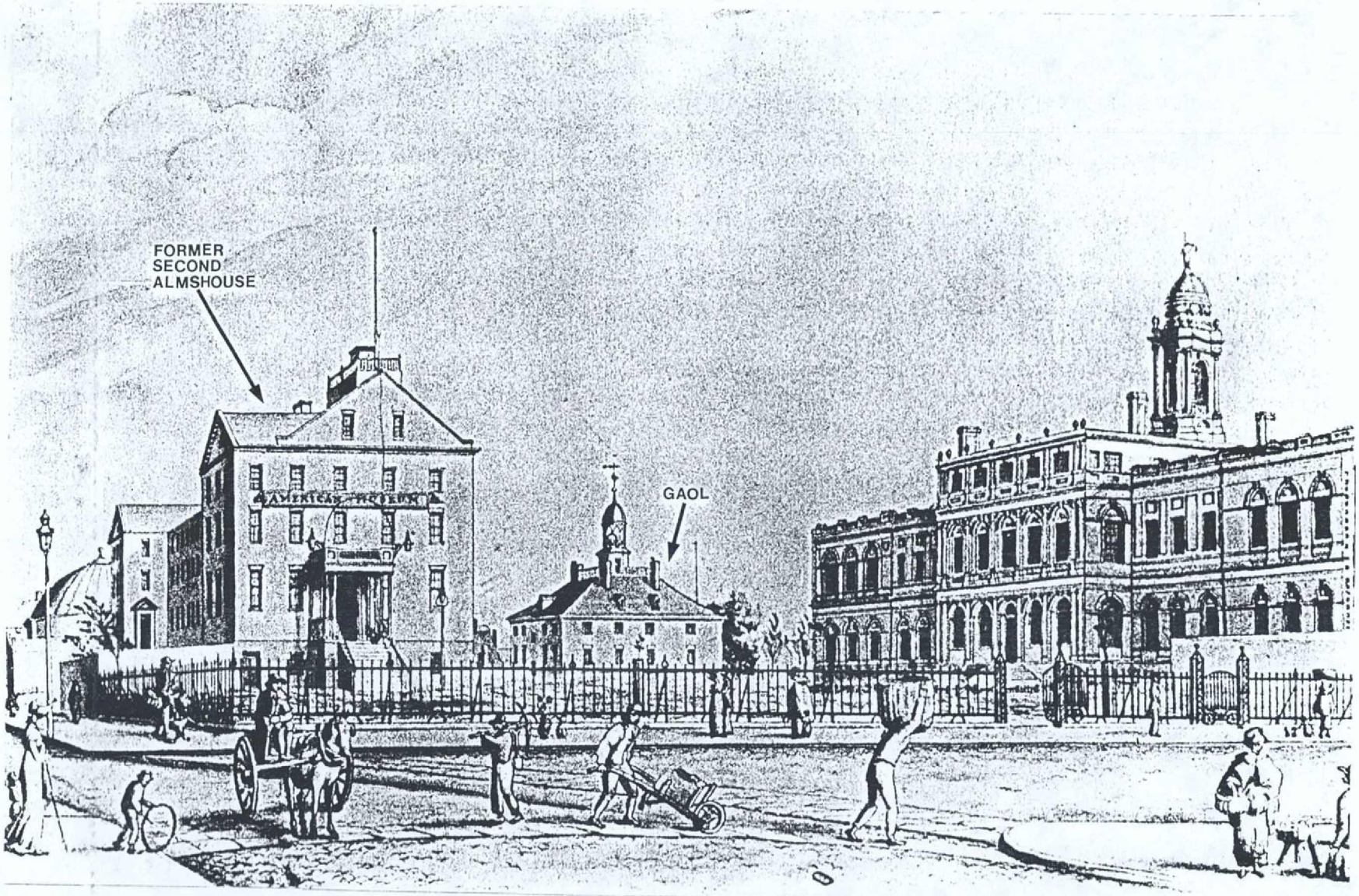

Figure 5:10 City Hall Park, c. 1825. City Hall Park and Chambers Street from Broadway, by A.J. Stansbury, c. 1825 (Stokes, 1915-28, Vol. VI, pl. 96A). The buildings associated with the first Almshouse are gone. By 1825, the second Almshouse no longer functioned as an Almshouse; it now housed the American Museum.

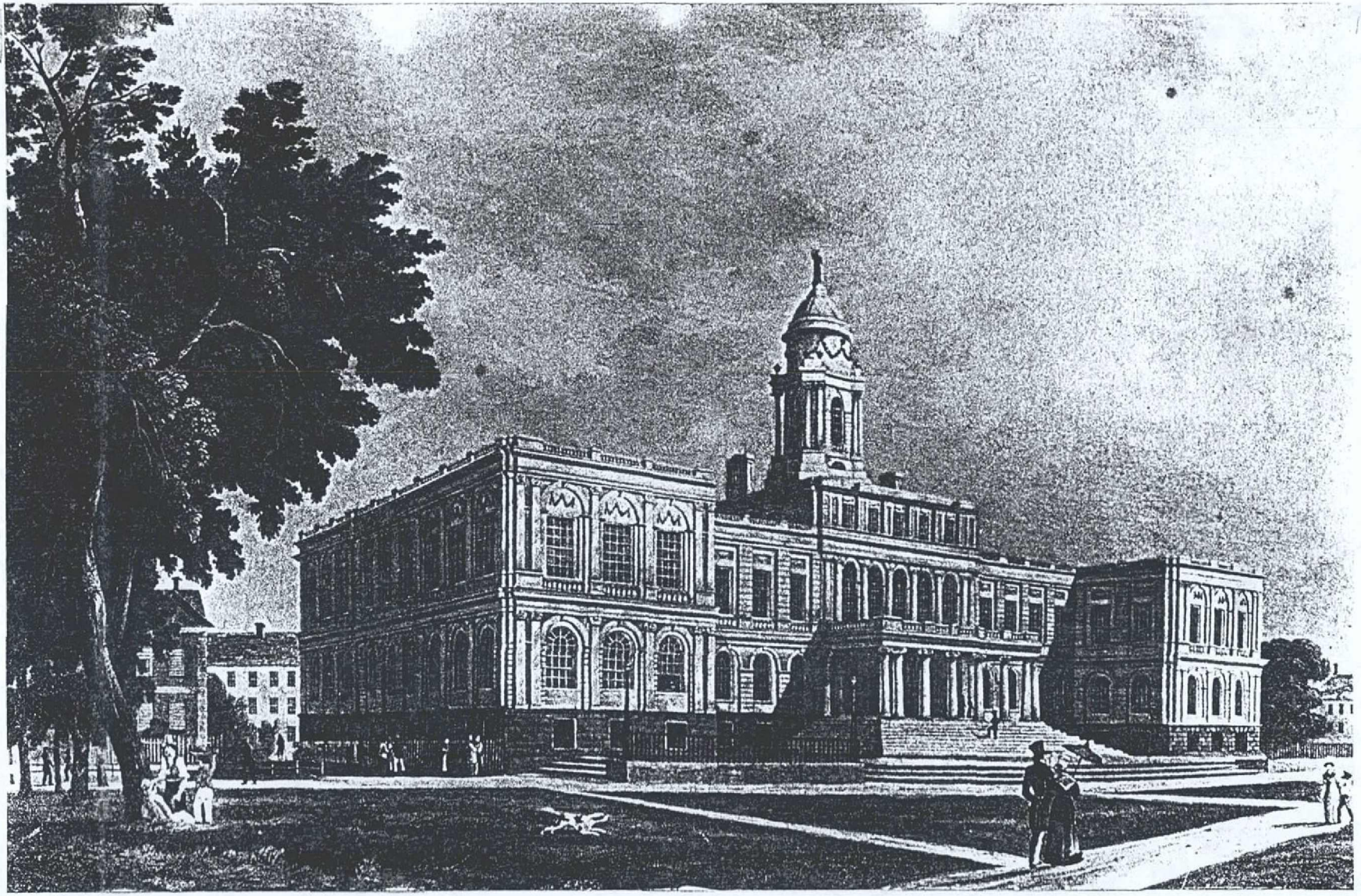

Figure 5:11 City Hall, aquatint by W.G. Wall, 1826 (Stokes, 1915-28, vol. II, pl. 97). The building on the far left is the boarded up Bridewell. The former second Almshouse is the building depicted between the Bridewell and City Hall.

located between present-day City Hall and Tweed Court House. The historic structure is in the same north-south location as is the building uncovered in the 1989 archaeological excavation. The difference is in the east-west location; the structure on the Montresor Plan appears to be seventy-five feet east of of the building uncovered in the 1989 dig. This seventy-five foot discrepancy may be an error in the Montresor Plan, or it may not be the structure uncovered in the archaeological excavation. The length of this structure, approximately twenty-five feet, is close to the north-south dimension of the "dig" building, which is twenty feet from outer wall to outer wall. The next chapter evaluates the archaeological, architectural, and documentary evidence concerning the function and age of the building uncovered in the 1989 dig.

CHAPTER SIX: ARCHAEOLOGY AND ARCHITECTURE-- ANATOMY OF THE ALMSHOUSE

Edward J. Lenik
Donald A. Plotts

CHAPTER SIX: ARCHAEOLOGY AND ARCHITECTURE - ANATOMY OF THE ALMSHOUSE

Many of the architectural details of the Almshouse can be discerned from four artists' views and other documentary sources. This chapter will present the documentary material first, followed by the archaeological evidence. The data will be analyzed in tandem to interpret the probable appearance and construction of the eighteenth-century building uncovered at the City Hall Park site.

One drawing, whose artist and date are unknown, provides valuable architectural details of the Almshouse (see Figure 6:1). The structure is depicted with a symmetrically designed facade and is described as being "built in style of ordinary residence" (Rothman 1971:37). It is two and one-half stories high with five bays (openings), including a central doorway on the first level and five bays (windows) on the second level. There are two bays on each floor on the east side of the house. The windows are six lights (panes) over six lights and are double-hung. Stone lintels and sills are suggested. The structure has a fenestrated basement with four windows on the front or north facade and two on the east side.

Seven stairs lead up to the entrance from the street level. The entrance has a rectangular door with cornice. A railing flanks both sides of the entryway and stairs. The house has a hip roof and two chimneys, one at each end of the roof.

The architectural details described above are also depicted in three other artists' renditions of the house. One is a pen and ink caricature (political cartoon) depicting an incident in 1770 and drawn, probably within the same year, by Pierre Eugene du Simitiere (Stokes

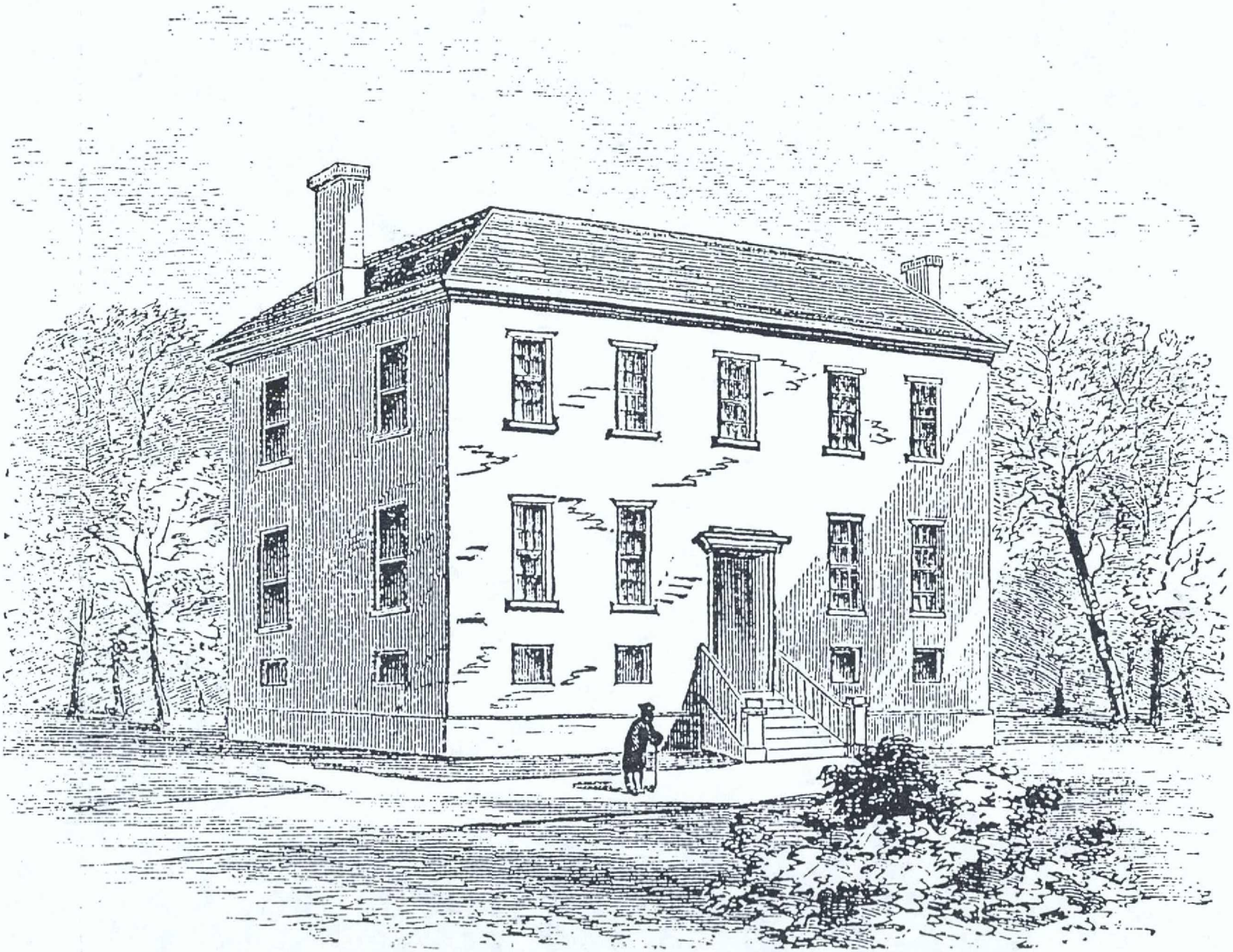

Figure 6:1 "The Poor House. Erected in 1735, on the Present Site of City Hall, New York." This photograph was made from a 1905 negative of this engraved book illustration. Artist and date unknown. (Courtesy of the New-York Historical Society, New York City.)

1915-28, Vol. 3, pl. 4-b). Although the cartoon's subjects are the Gaol (jail) and the Liberty Pole, the Almshouse, situated between these two structures, is depicted in the center of the drawing (see Figure 6: 2 and 6:3). The second is a pen and ink plan of the city as it was in 1742-44 drawn from memory, as stated by the cartographer David Grim, in 1813 (Stokes 1915-28, Vol. 1, pl. 32-a). Across the top of the map are small drawings of thirteen buildings as they appeared at the time, one of which is the Poor House or Almshouse (see Figure 6:4). The third drawing of the Almshouse is on B. Taylor's 1797 map, A New and Accurate Plan of the City of New York in the State of New York in North America (Stokes, 1915-28, vol. 1, pl. 64). The map, depicting New York in 1796, contains tiny "bird's eye" views of selected buildings, one of which is the Almshouse or Work House (see Figure 6:5). In addition, the Minutes of the Common Council of the City of New York for December 20, 1734 (Common Council Minutes 1905 Vol. 4:241) state that the house was to be fifty-six feet long and twenty-four feet wide, two stories high with a cellar. The building was constructed of brick on a stone foundation.

The archaeological evidence recovered from the site confirms many of the architectural details found in the documentary records, and presents new insights into the construction of the building. The following construction details are based on the analysis of features and artifacts found at the site.

Structural Features

Late nineteenth or early twentieth-century utility lines were uncovered at the site. These included a masonry conduit for a steam-pipe connecting the Tweed Court House and City Hall and various metal

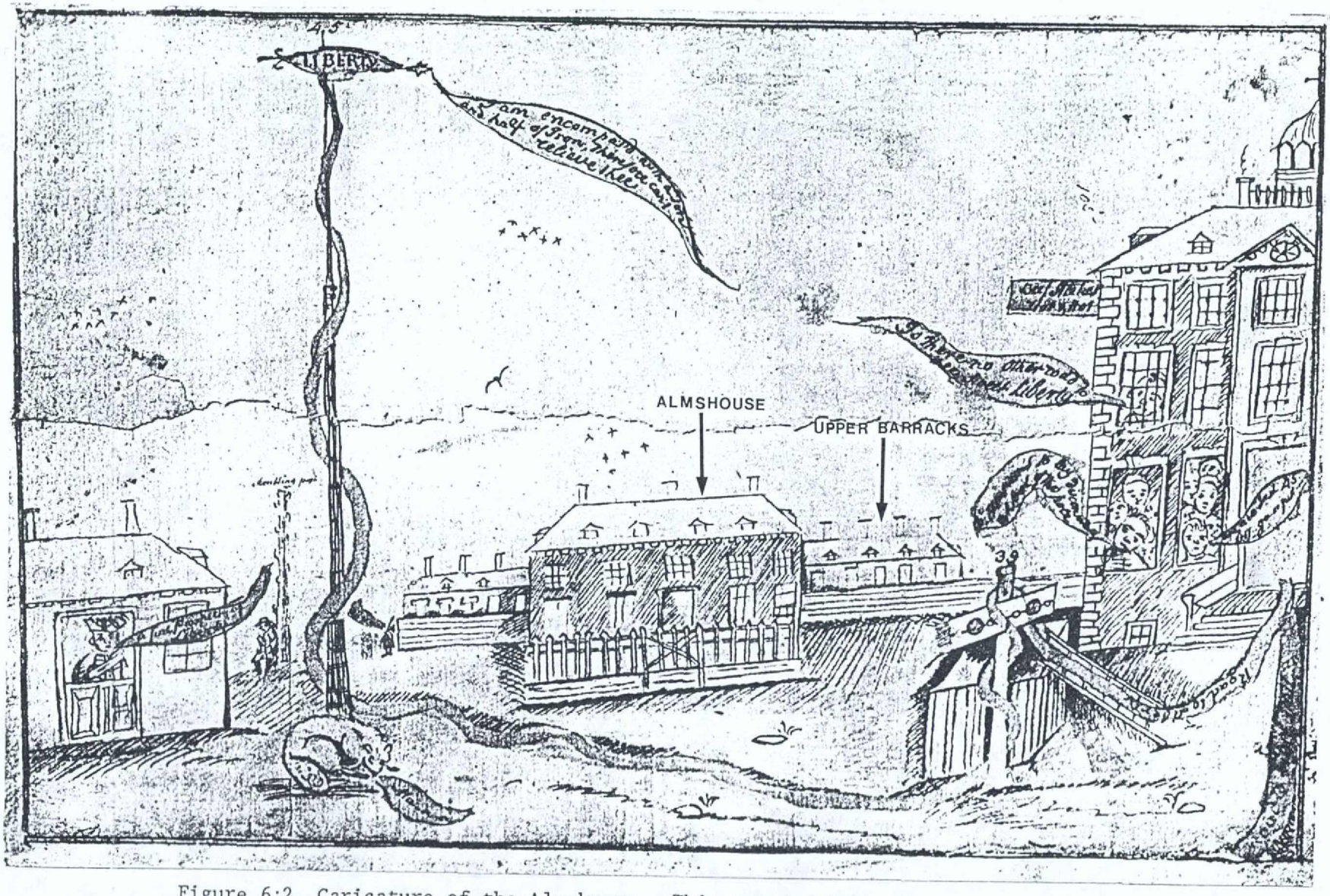

Figure 6:2 Caricature of the Almshouse. This pen and ink caricature (political cartoon) by Pierre Eugene du Simitiere depicts City Hall Park in 1770. Although the cartoon's subjects are the gaol (jail) and the Liberty Pole, the Almshouse, situated between the two structures, is depicted in the center of the drawing. (Stokes, 1915-28, Vol. III, pl. 4-b)

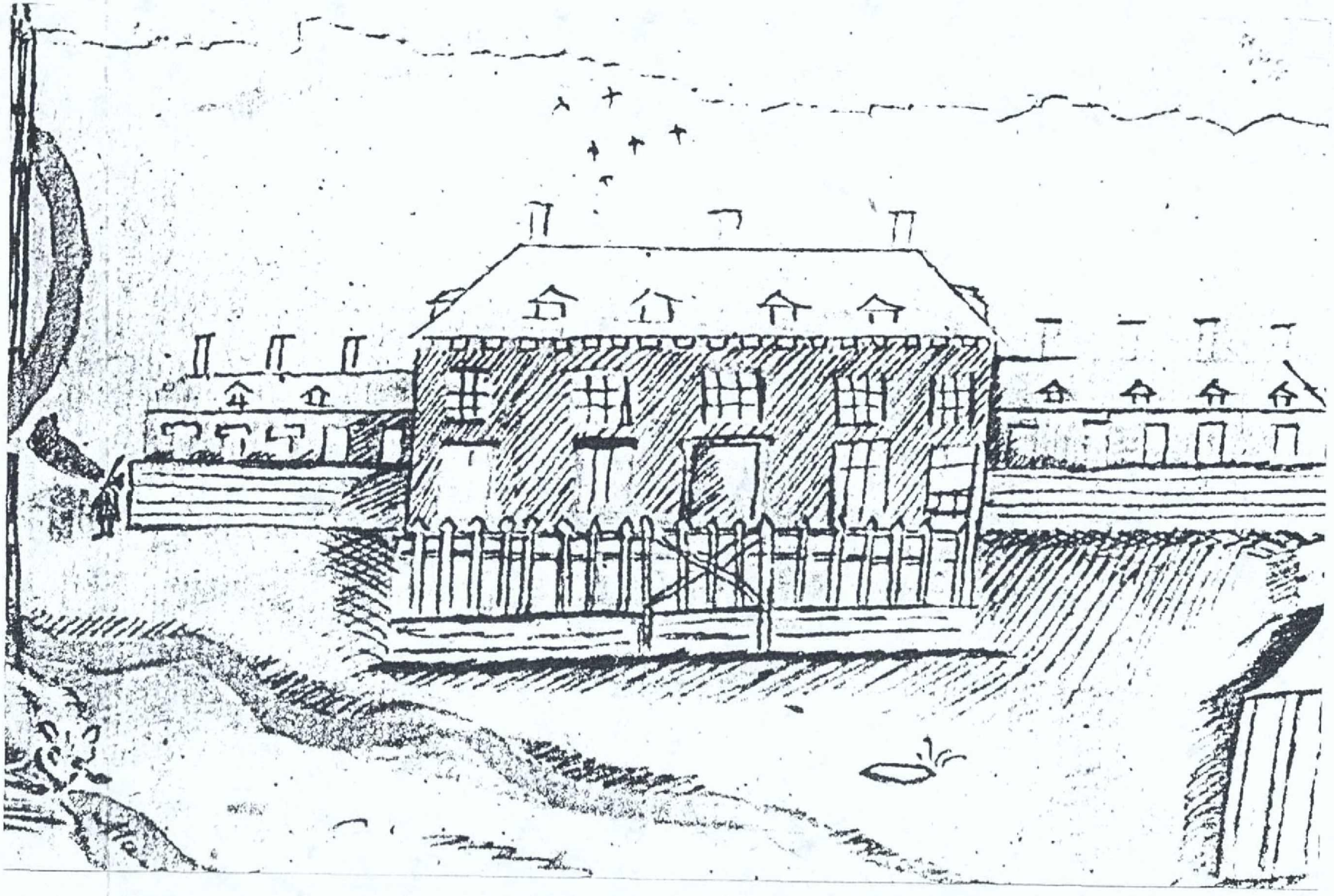

Figure 6:3 Detail of the Almshouse in 1770. This photo enlargement of the Almshouse from the drawing by du Simitiere (see Figure 6:2) depicts architectural details similar to those in the New-York Historical Society print (Photo: Carl Forster).

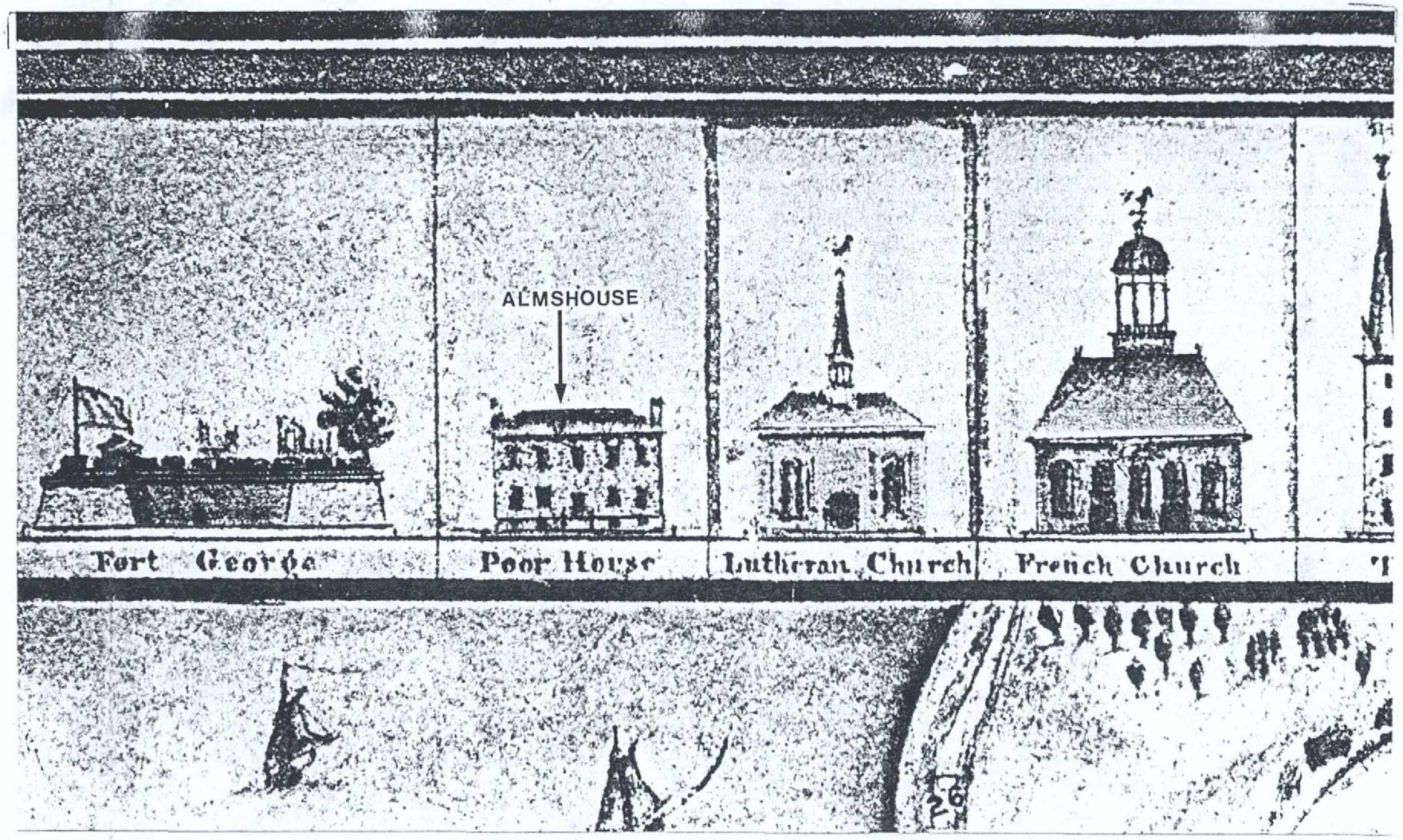

Figure 6:4 David Grim's depiction of the Almshouse. A pen and ink drawing made in 1813, depicting the Almshouse in 1742-4. The drawing of the Almshouse is one of thirteen buildings that are illustrated across the top of the map, A Plan of the City and Environs of New York by cartographer David Grim (Stokes, 1915-28, Vol. I, pl. 32a).

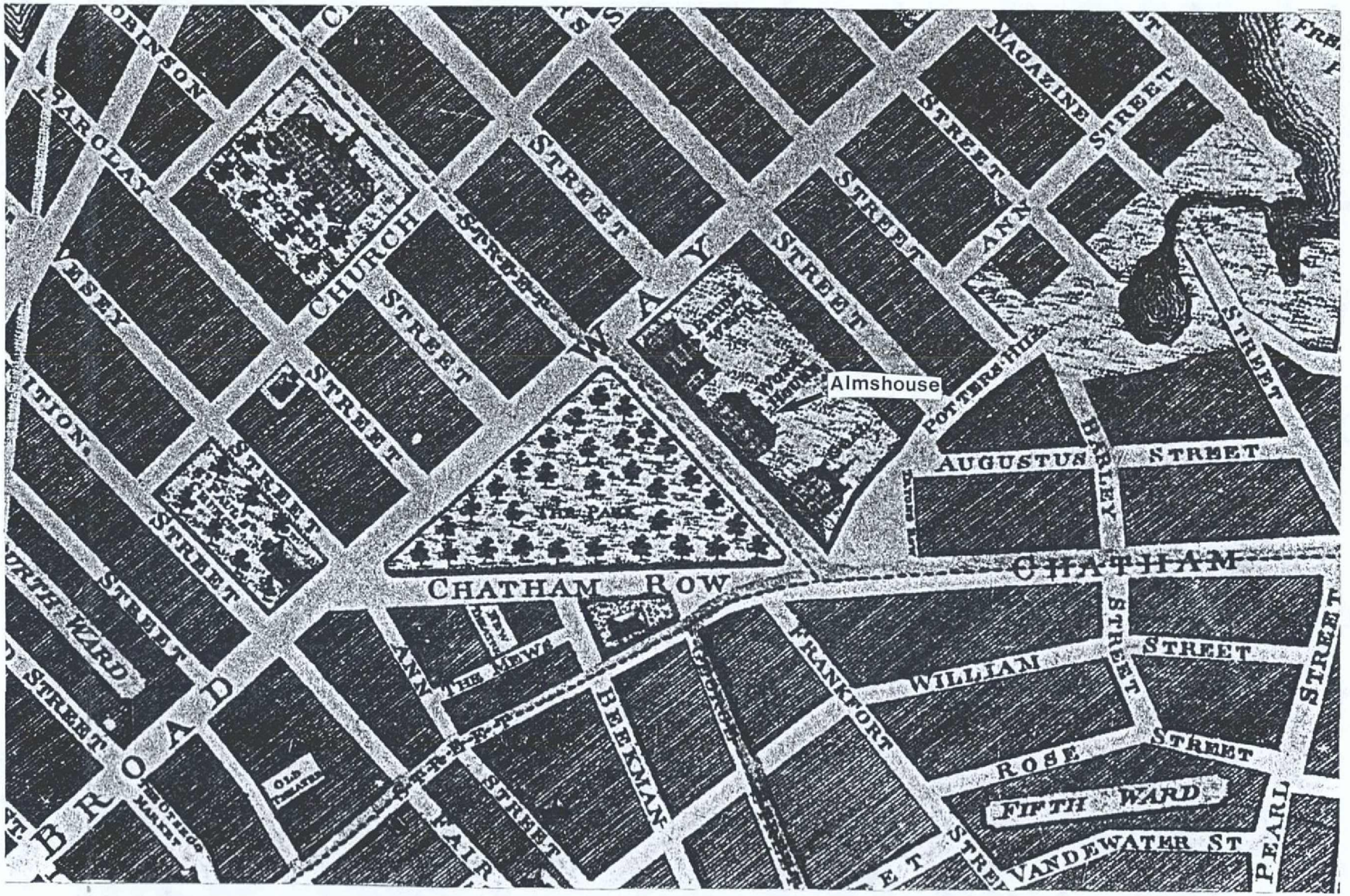

Figure 6:5 View of the Almshouse in 1796. This tiny "bird's eye" view of the Almshouse is depicted on the map, A New and Accurate Plan of the City of New York in the State of New York in North America, by B. Taylor (Stokes, 1915-28, Vol. I, pl. 64).

conduits for below-grade electrical lines.

The blocks of stone which comprised the lower step of the original north staircase of City Hall were uncovered just below the asphalt walkway at the rear of the building. The step was at original grade and on its original rubble fill footing--indicating that in 1811 when the building was completed, the ground surface was approximately twelve inches below its present level. The several stones comprising the step showed little wear and may have been buried by the middle of the nineteenth century as a result of a regrading of this area of City Hall Park for the construction of the Former Supreme Court Building (now commonly referred to as the Tweed Court House). The bull-nose tread and drip moulding below it were typical of the Federal Style and are of superior proportion and contour to those which exist on the present City Hall staircases.

Individual blocks were held together by an iron cramp set in lead. The stones also contained sheet lead as the waterproofing/bonding material at vertical joints. Footings and stringer support walls were constructed of Tuckahoe marble. Some of the marble rubble consisted of broken cut-stone indicating that damaged marble from the finished surfaces of City Hall was used as structural support for the staircase.

Approximately fifty feet north of the present staircase, the top of a brownstone rubble wall was uncovered at about three feet below existing grade. The wall was about twenty-four inches high and the individual stones were bonded together by a lime/clay mortar and whitewashed on the interior face. The wall lacked any type of footing. The top of the wall was levelled by use of flat, rough-cut bluestone. South of this wall, and just above the base of it, a compacted earthen floor was located. The compressed earth was soil over a base

method of manufacture, but their thickness could be measured. There are three sizes (thicknesses) within the Almshouse levels: one millimeter (thirty-two specimens), one and one-half millimeters (twenty-four specimens) and three millimeters (seven specimens). No clustering of glass fragments was found which might indicate the location of windows within the structure.

The window glass fragments from the Almshouse appear to be of high quality, that is lacking in bubbles, waves, or ridges. This data is consistent with similar findings elsewhere. For example, "fine" window glass was found at the main barrracks site at Fort Montgomery (built 1776, destroyed October 1977) located on the Hudson River at Bear Mountain, NY (Mead 1969). The stratigraphic context of the specimens plus their size-thickness indicate that they date to the eighteenth century. In general, window glass in the nineteenth century was made thicker with passage of time (Walker 1971:78).

Nails:

Nails are one of the most common artifacts recovered from the excavation of a historic site. These small bits of iron, which are usually badly rusted, bent, twisted or broken, can never the less be used in dating old buildings as well as determining structural changes over time.

Three hundred ninety-five nails were recovered from undisturbed contexts within the Almshouse site. There are 201 hand-wrought nails within this collection, 36 machine cut nails, and 158 specimens which are unidentified. No wire nails were found within the Almshouse squares and stratigraphic levels. The hand-wrought nails date to the eighteenth century while the machine cut nails date from c. 1790 onward

(Noel Hume 1969:252-254). The presence of machine cut nails indicates that some changes or additions were made within the structure prior to its demolition in 1796.

Building Hardware:

An iron hook, door latch fragments, and shutter hook were recovered from excavation unit N35 W10 level 9, within the cellar of the Almshouse. Although shutters are not illustrated in the artists' depictions of the building, the presence of a shutter hook at the site suggests that this architectural feature may have been added to the building at one point during its history.

One hinge fragment was recovered from the presumed yard area located to the south of the structure. Unfortunately, this specimen was found within the area disturbed by the installation of electrical conduit pipes during the twentieth century.

Conclusion

In summary, the documentary record indicates that the Almshouse was a two and one-half story structure with a hip roof, two chimneys, windows, a center entryway with stairs, and a basement. In addition, the Minutes of the Common Council of the City of New York indicate that bricks, shingles, pine boards, two gutters, lath and lime were used in its construction in 1735 (Common Council Minutes 1905 Vol. 4:241,; 250-51; 259-260; 282-286; 289-290; 338-9). Also, the Minutes indicate that between April 1736 and 1790, several additional structures were built at the site including a kitchen, oven, wash house, stable, hospital, cisterns, a small shed and a storehouse.

The archaeological evidence confirms several of the structural details provided in the documents. We found a considerable quantity of brick at the site along with window glass, plaster, nails and architectural hardware. No wooden structural members were found which suggests that such elements may have been scavenged for reuse elsewhere. Our structural analysis further indicates that the brownstone wall was not part of the main Almshouse but rather that of an additional structure, most likely the kitchen. This conclusion is supported by three other pieces of evidence. First, the historical record indicates that the kitchen was built of brick, stone and lime (Common Council Minutes 1905 Vol. 4:331). Secondly, the Kitchen Group of artifacts recovered from the Almshouse deposits amounts to 29 percent of the collection; it is the second largest category of material (architectural artifacts being the largest category). Third, the size of the wall, i.e. its height and width, indicates that the structure did not have the load bearing capacity to support the main building but could have supported a smaller structure such as the kitchen.

CHAPTER SEVEN: CULTURAL RESOURCE MANAGEMENT CONSIDERATIONS

Sherene Baugher
Edward J. Lenik

CHAPTER SEVEN: CULTURAL RESOURCE MANAGEMENT CONSIDERATIONS

Summary:

The 1989 archaeological investigations within City Hall Park have clearly demonstrated that the land area between City Hall and the Tweed Court House building is one of high archaeological potential. These excavations have uncovered the buried remains of an eighteenth-century building. The archaeological, architectural, and documentary evidence all indicate that this building was the kitchen for New York City's first municipal Almshouse (1736-1797).

Recommendations:

The historic resources uncovered within City Hall Park are significant because they have yielded and are likely to yield important information pertaining to the social history of early New York City including governmental attempts at dealing with problems of the poor. A portion of the site has been disturbed by previous utility line construction; however the excavations have shown that undisturbed archaeological deposits are present within the area.

We conclude that the Almshouse site has high archaeological sensitivity. The grassy knoll to the west of the utility corridor contains the unexcavated portion of the Almshouse. Any additional in-ground construction work in this area should be preceded by intensive testing and data recovery excavations. In addition, the area immediately surrounding City Hall and Tweed Court House may contain cisterns, privies, wells, and outbuildings associated with either the Almshouse or with the Upper Barracks. This work also suggests there is

a strong possiblity that other significant resources may be present in the northern portion of City Hall Park such as the Upper Barracks (c. 1757-1790), the Gaol (1757-1903), the Bridewell (c. 1775-1838) and other structures and features (such as wells, cisterns, and privies) associated with these buildings. Furthermore, the preliminary environmental assessment of the area suggests the possibility that prehistoric resources may be found within City Hall Park.

This project revealed that in spite of extensive alterations to City Hall Park, important historic material from the eighteenth century still lies buried and preserved in the ground.

REFERENCES

REFERENCES

PRIMARY SOURCES

Aquatints, Engravings and Prints

Anonymous
n.d. The Poor House. Erected in 1735, on the Present Site of City Hall, New York. Engraved book illustration. The 1905 negative of the photograph of the illustration is on file at the New-York Historical Society, New York City.

Stansbury, A.J.
c. 1825 City Hall Park and Chambers Street from Broadway, aquatint. (Stokes, 1915-28, vol. 6, pl. 96A).

Wall, W.G.
1826 City Hall, aquatint (Stokes, 1915-28, vol. 2, pl. 97).

Maps

Anonymous
1731 A Plan of the City of New York from an Actual Survey made by James Lyne (The Bradford Map or the Lyne Survey). (Stokes, 1915-28, vol. 1, pl. 27).

1735 Plan of the City of New York in the Year 1735. (Stokes, 1915-28, vol. 1, pl. 30).

Goerck, Casimir Th. and Joseph Fr. Mangin
1803 A Plan and Regulation of the City of New-York (Etc.) (The Goerck-Mangin Plan). (Stokes, 1915-28, vol. 1, pl. 70).

Grim, David
1813 A Plan of the City and Environs of New York. (Grim's General Plan). (Stokes, 1915-28, vol. 1, pl. 32-1).

Maerschalk, F.
1755 A Plan of the City of New York from an Actual Survey Anno Domini M,DCC,LV (The Maerschalck or Duyckinck Plan). (Stokes, 1915-28, vol. 1, pl. 34).

Montresor, John
1775 A Plan of New-York and Its Environs to Greenwich, on the North or Hudsons River, (Etc.). (Stokes, 1915-28, vol. 1, pl. 40).

Ratzen (Ratzer), Bernard
1776 Plan of the City of New York (The Ratzen Plan). (Stokes, 1915-28, vol. 1, pl. 42).

Ratzer, Bernard
1776 Plan of the City of New York, In North America (The Ratzer Map). (Stokes, 1915-28, vol. 1, pl. 41).

Taylor, B.
1797 A New and Accurate Plan of the City of New York in the State of New York in North America. (Stokes, 1915-28, vol. 1, pl. 64).

Published Documents

Minutes of the Common Council of the City of New York (1697-1774)
1905 Dodd Mead & Co., New York.

Minutes of the Common Council of the City of New York (1784-1831)
1917 The City of New York, New York.

SECONDARY SOURCES

Adams, John P.
1971 Bottle Collecting in America. New Hampshire Publishing Co., Somersworth.

Ahlefeldt-Laurvig, Jorgen
1980 "Clay Pipes from Denmark." In The Archaeology of the Clay Tobacco Pipe IV, edited by Peter Davey, pp. 219-252. BAR International Series 92, Oxford.

Albert, Lillian Smith, and Jane Ford Adams
1941 The Button Sampler. Gramercy Publishing Co., New York.

Amorosi, T.
n.d. A Report on the Small Mammal Assemblage from the Privies and other Selected Features at 175 Water Street.

1983a "Comment on Some Bone Pathologies in Rattus." Zooarchaeological Research News 2(3):7-8.

1983b A Report on the Faunal Assemblage from Old Bank Farm Site, Rhode Island. In Phase 2 Archaeological Survey, Route 6, Final E.I.S, Appendix C. Prepared by Wilbur Smith and Associates, Inc. for the Rhode Island Department of Transportation.

Amorosi, T.
1985 A Guide for the Identification and Aging of Domestic Neo-natal and Juvenile Mammals. M.A. thesis, Department of Anthropology, New York University.

1989 "A Postcranial Guide to Domestic Neo-Natal and Juvenile Mammals: The Identification and Aging of Old World Species." BAR International Series 533, Oxford.

Amorosi, T., and D. Russell
1985 "The Taphonomic Bias Observed in Faunal Collections Derived from Outbuilding Structures." Paper presented at the American Anthropological Association Annual Meetings, Washington D.C., December 4-8.

Baugher, Sherene, J. Baragli and L. DeCesare
1985 The Archaeological Investigation of the Voorlezer House Site, Staten Island, New York. Faunal Appendix by K. Morgan, pp. 160-164. Monograph on file at the Staten Island Historical Society.

Baugher, Sherene, and Judith Baragli
1987 An Archaeological Investigation at the Matron's Cottage, Snug Harbor Cultural Center, Staten Island. Monograph on file at the New York City Landmarks Preservation Commission.

Baugher-Perlin, Sherene
1978 The Prall Site: A Case Study in Historical Archaeology. Ph.D. dissertation, Department of Anthropology, State University of New York at Stony Brook.

Baugher-Perlin, Sherene, Meta Janowitz, Mark Kodack, and Kate Morgan
1982 Towards An Archaeological Predictive Model for Manhattan: A Pilot Study. Report on file at the New York City Landmarks Preservation Commission.

Beard, Rick (editor)
1987 On Being Homeless: Historical Perspectives. Essays published to accompany exhibition at the Museum of the City of New York. Museum of the City of of New York, New York.

Behrensmyer, A.K.P.
1978 "Taphonomic and Ecological Information from Bone Weathering." Paleobiology 4:150-162.

Bellantoni, N.F. R.R. Grade III and D.A. Porrer
1982 "Zooarchaeology and Social History of the Butler McCook Homestead, Hartford Connecticut." Journal of the Council for Northeast Historical Archaeology. 11:1-8.

Berkow, Nancy Pratt
1973 The Award Guide to Collecting Bottles. Award Books. New York.

Biddick, K.
1983 "An Archaeological Study of the Major Domesticates (Pig, Sheep/Goat, Cattle) from the Privies and Other Selected Features of 175 Water Street." In The Archaeological Investigations of 175 Water Street Block: N.Y.C., edited by J.H. Geismar. Prepared by Professional Services Industries Inc., Soil Systems Division, pp. 536-600. Monograph on file at New York City Landmarks Preservation Commission.

1989 The Other Economy: Pastorial Husbandry on a Medieval Estate. Los Angeles: University of California Press.

Binford, Lewis R.
1962 "A New Method of Calculating Dates from Kaolin Pipe Stem Fragments." Southeastern Archaeological Conference Newsletter 9 (1):19-21.

Bishop, Morris, and the Editors of Horizon Magazine
1968 The Horizon Book of the Middle Ages. American Heritage Publishing Company, New York.

Blackburn, Roderic H. (editor)
1987 New World Dutch Studies: Dutch Arts and Culture in Colonial America, 1609-1776. Albany Institute of History and Art, Albany.

Brain, C.K.
1981 The Hunters or the Hunted? The University of Chicago Press, Chicago.

Bridenbaugh, Carl
1971 Cities in the Wilderness: The First Century of Urban Life In America, 1625-1742. With a new preface. Oxford University Press, New York.

Brown, J.C., and G.I. Twigg
1969 "Studies on the Pelvis in British Muridae and Cricetidae (Rodentia)." Journal of Zoology, London 158:81-132.

Burt, W.H., and R.P. Grossenheider
1976 A Field Guide to the Mammals: Field Marks of All North American Species Found North of Mexico. Third edition. Mifflin Company, Boston.

Buttendieck, V.E., and H. Wissdorf
1982 "Contribution to the Designation of the Headbones of the Turkey (Meleagris gallopavo) with Regard to the NAA (1979)." Zoologische Zahrbaccher Anat. 107:153-184.

Calver, William Louis, and Reginald Pelham Bolton
1950 History Written with Pick and Shovel. The New York Historical Society, New York.

Carter, H.H.
1976 "Vertebrae of the Larger Mammals of Western Europe." Ossa 3/4:109-127.

Casteel, R.W.
1974 "On the Remains of Fish Scales from Archaeological Sites." American Antiquity 39:557-581.

1976 Fish Remains in Archaeology and Paleo-environmental Studies. Academic Press, New York.

1977 "Characterization of Faunal Assemblages and the MNI Determined from Paired Elements: Continuing Problems in Archaeology." Journal of Archaeological Science 4:125-134.

1978 "Faunal Assemblages and the 'Weigemethode' or Weight Method." Journal of Field Archaeology 5 (1):71-73.

Chapman, F.M.
1966 Handbook of Birds of Eastern North America. Dover Publications, New York.

Clio Group, Inc.
1989 "Preliminary Report on Phase II, Part A Archaeological Investigations at the Site of the Futures Center, The Franklin Institute, Philadelphia, Pennsylvania." Monograph on file at the Franklin Institute, Philadelphia.

Cornwall, I.W.
1956 Bones for the Archaeologist. The Macmillan Company, New York.

Crabtree, P.J.
1985 "Historic Zooarchaeology: Some Methodological Considerations." Historical Archaeology 19:76-78.

Cray, Robert
1988a Paupers and Poor Relief in New York and its Rural Environs, 1700-1830. Temple University Press, Philadelphia.

1988b "Poverty and Poor Relief: New York City and its Rural Environs, 1700-1790." In Authority and Resistance in Early New York. Edited by William Pencak and C.E. Wright. The New-York Historical Society, New York.

Dallal, Diane
1986 "Analysis of the Clay Tobacco Pipes from the Broad Financial Center Site." In The Excavation of Augustine Heerman's Warehouse and Associated Seventeenth Century Dutch West India Company Deposits. The Broad Financial Mitigation Final Report, vol. 1, ch. VII, pp. 1-82. Monograph on file at the New York City Landmarks Preservation Commission.

Duco, Don H.
1980 "Clay Pipe Manufacturing Processes in Gouda." In The Archaeology of the Clay Tobacco Pipe IV, edited by Peter Davey, pp. 179-218. BAR International Series 92, Oxford.

1982 Merken van Goudse pijpenmakers 1660-1940. Uitgeversmaatschappij De Tijdstroom B.V. Lochem.

Ellenberger, N.H., and H. Dittrich
1959 An Atlas of Animal Anatomy. Dover Publications, New York.

Evans, Joan
1969 Life in Medieval France. Third edition. Phaidon, New York.

Flower, W.H.
1885 An Introduction to the Osteology of the Mammalia. Macmillan Company, London.

Getty, R.
1975 Anatomy of the Domestic Animals. Fifth edition. W.B. Saunders Company, Philadelphia.

Gilbert, A.
1978 "Problems in Zooarchaeological Quantification." Paper delivered at the 1978 meeting of the American Anthropological Association, Los Angeles.

Gilbert, A., and B.H. Singer
1982 "Reassessing Zooarchaeological Quantification." World Archaeology 14(1):21-40.

Gilbert, B.M.
1980 Mammalian Osteology. B. Miles Gilbert, Publisher, Laramie, WY.

Gilbert, B.M, L.D. Smith, and H.G. Savage
1982 Avian Osteology. B. Miles Gilbert, Publisher, Laramie, WY.

Glass, B.P.
1951 A Key to the Skulls of North American Mammals. Minneapolis.

Gluck, E.W.
1983 A Faunal Analysis of Avian Bones from 175 Water Street: Socioeconomic Implications for 18th-19th Century New Yorkers. M.A. Thesis, Department of Anthropology, Hunter College, City University of New York.

Gorden, C.C., and J.E. Buikstra
1981 "Soil pH, Bone Preservation, and Sampling Bias at Mortuary Sites." American Antiquity 46 (3):566-571.

Grayson, D.K.
1978 "Minimum Numbers and Sampling Sizes in Vertebrate Faunal Analysis." American Antiquity 43:53-65.

1979 "On the Quantification of Vertebrate Archaeofaunas." In Advances in Archaeological Method and Theory, edited by M.B. Schiffer, vol. 2, pp. 199-237. Academic Press, New York.

1981 "The Effects of Sample Size on Some Derived Measures in Vertebrate Faunal Analysis." Journal of Archaeological Science 8:77-88.

1983 "The Paleontology of Gatecliff Shelter." In The Archaeology of Monitor Valley 2. Gatecliff Shelter, edited by D.H. Thomas et al. pp. 99-126. Anthropological Papers of the American Museum of Natural History 59(1). American Museum of Natural History, New York.

1984 Quantitative Zooarchaeology: Topics in the Analysis of Archaeological Faunas. Academic Press, New York.

Grayson, D.K., and T.H. Thomas
1983 "Seasonality at Gatecliff Shelter." In The Archaeology of Monitor Valley 2. Gatecliff Shelter, edited by D.H. Thomas et al. pp. 434-438. Anthropological Papers of the American Museum of Natural History 59(1). American Museum of Natural History, New York.

Gregory, W.K.
1933 "Fish Skulls: A Study of the Evolution of Natural Mechanisms." Trans. Amer. Phil. Soc. 33(2).

Grossman & Associates, Inc.
1988 Archaeological Sensitivity Evaluation and Testing Recommendations for the Proposed Subterranean Utilities Corridor Between City Hall and Tweed Court House, City Hall Park, New York City. Report Prepared for Dept. of General Services, City of New York.

Hall, E.R.
1981 The Mammals of North America. Vols. I-II. John Wiley and Sons, New York.

Harrington, J.C.
1978 "Dating Stem Fragments of Seventeenth and Eighteeenth Century Clay Tobacco Pipes." In Historical Archaeology: A Guide to Substantive and Theoretical Contributions, edited by Robert L. Schuyler, pp. 63-65. Baywood Publishing Company, Inc., Farmingdale, NY.

Haynes, G.
1983 "Frequencies of Spiral and Green-Bone Fracture on Ungulate Limb Bones in Modern Surface Assemblages." American Antiquity 48:102-114.

Hildebrand, M.
1955 "Skeletal Differences Between Deer, Sheep, and Goats." California Fish and Game Commission, pp. 327-346.

Holman, J.A.
1961 "Osteology of Living and Fossil New World Quails (Aves, Galliformes)." Bulletin of the Florida State Museum 6 (2):130-233.

Huey, Paul R.
1987 "Archaeological Evidence of Dutch Wooden Cellars and Perishable Wooden Structures at Seventeenth- and Eighteenth-Century Sites in the Upper Hudson Valley." In New World Dutch Studies, edited by Roderic H. Blackburn and Nancy A. Kelley, pp. 13-35. Albany Institute of History and Art, Albany, New York.

Janowitz, M.
1989 Unpublished Dissertation Materials on Dutch New York. City University of New York Graduate Center, Anthropology Department (Chapter 6, Archaeological Deposits).

Jones, Olive, and Catherine Sullivan et al.
1985 The Parks Canada Glass Glossary. Parks Canada: Ottawa.

Jordan, D.S., and B.W. EverMann
1968 American Food and Games Fishes. Dover Publications, New York.

Kammen, Michael
1980 People of Paradox: An Inquiry Concerning the Origins of American Civilization. With a new introduction. Oxford University Press, New York.

Ketchum, William Jr.
1975 A Treasury of American Bottles. A & W Visual Library, New York.

Klien, R.G., and K. Cruz-Uribe
1984 The Analysis of Animal Bones from Archaeological Sites. University of Chicago Press, Chicago.

Koch, T. (editor)
1973 Anatomy of the Chicken and Domestic Birds. Translated by B.H. DeVries. Iowa State University Press, Iowa.

Kouwenhoven, John A.
1972 The Columbia Historical Portrait of New York: An Essay in Graphic History. With a new preface. Harper & Row, Publishers, New York.

Lawrence, B.
1951 "Mammals Found at the Awatouri Site, Part I, Post Cranial Skeletal Characters of Deer, Pronghorn, and Sheep-Goat with Notes on Bos and Bison, Part II." Papers of the Peabody Museum of Archaeology and Ethnology 35(3). Harvard University, Cambridge, MA.

Lie, R.
1980 "Minimum Number of Individuals from Archaeological Samples." Norwegian Archaeological Review 13(1): 24-31.

Luscomb, Sally C.
1967 The Collector's Encyclopedia of Buttons. Crown Publishers, Inc., New York.

Mead, John H.
1969 History Beneath Our Feet. Published lecture notes by the Constitution Island Association and the Putnam County Historical Society, Putnam County, New York.

McDaniel, John M., and Kurt C. Russ
1989 "Analysis of the Buttons from the Liberty Hall Academy Site Complex." Quarterly Bulletin, Archaeological Society of Virginia, 44(2):49-65.

McGovern, T.H.
1985 "Contributions to the Paleoeconomy of Norse Greenland." Acata Archaeologica--Denmark, vol. 54, pp. 73-122.

McGovern, T.H., and T. Amorosi
1990 QUATTRO BONE, version 3.0: Template Software. Materials are on file at the Dept. of Anthropology, Bioarchaeology Laboratory, Hunter College.

McKearin, George, and Helen McKearin
1941 American Glass. Crown Publishers, New York.

Miller, Genevieve
1976 "Hospitals" in Dictionary of American History. Revised edition. Volume II, pp. 306-307. Charles Scribner's Sons, New York.

Mohl, Raymond A.
1971 Poverty in New York 1783-1825. Oxford University Press, New York.

Morris, Richard B. (editor)
1982 Encyclopedia of American History. Sixth edition. Harper & Row, New York.

Munsey, Cecil
1970 The Illustrated Guide to Collecting Bottles. Hawthorn Books, Inc., New York.

Neufeld, Ernest (editor)
1956 The Renascence of City Hall. New York City Department of Public Works, New York.

New York City Landmarks Preservation Commission
1966 Designation Report for City Hall, 2 LP-0080. Report on file at Landmarks Preservation Commission, New York City.

New York City Landmarks Preservation Commission
1984 Designation Report for Tweed Courthouse, 1 LP-1437. Report on file at Landmarks Preservation Commission, New York City.

Noel Hume, Ivor
1969 Artifacts of Colonial America. Alfred A. Knopf, Inc., New York.

Olsen, S.J.

1951 "Post-Cranial Skeletal Characters of Bison and Bos." Papers of the Peabody Museum of Archaeology and Ethnology 35(3). Harvard University, Cambridge, MA.

1961a "Problems of Mammal Skull Identification Due to Age Difference in Dentition." American Antiquity 27 (2):231-234.

1961b "A Note in Regard to Osteological Manuals." American Antiquity 32:321.

1967 "Fish, Amphibian and Reptile Remains from Archaeological Sites: Part I-Southeastern and Southwestern United States." Papers of Peabody Museum of Archaeology and Ethnology 56(2). Harvard University, Cambridge, MA.

1968 "Fish, Amphibian and Reptile Remains from Archaeological Sites: Part 1-Southeastern and Southwestern United States." Papers of the Peabody Museum of Archaeology and Ethnology 56 (2). Harvard University, Cambridge, MA.

1980 "Mammalian Remains from Archaeological Sites: Part I--Southeastern and Southwestern United States." Papers of the Peabody Museum of Archaeology and Ethnology 56(1). Harvard University, Cambridge, MA.

Oswald, Adrian

1951 "English Clay Tobacco Pipes." The Archaeological News Letter, 3(10):153-159.

Oxford English Dictionary (OED)

1971 The Compact Edition of the Oxford English Dictionary: Complete Text Reproduced Micrographically. 2 Vols. Oxford University Press, Oxford, England.

Ross, Steven J.

1988 "Objects of Charity: Poor Relief, Poverty, and the Rise of the Almshouse in Early Eighteenth-Century New York City." In Authority and Resistance in Early New York, edited by William Pencak and Conrad Edick Wright. The New-York HistoricalSociety, New York.

Rothman, David J.

1971 The Discovery of the Asylum: Social Order and Disorder In the New Republic. Little Brown & Co., New York.

Russell, D., and T. Amorosi
1983 "The Shearson-American Express Archaeofauna: Evidence for Primary Butchering Waste." In The Archaeological Investigations at the Shearson-American Express Site, edited by Joan Geismar. Monograph on file at the New York City Landmarks Preservation Commission.

1987 "Faunal Analysis." Archaeological Investigations of Site 1 of the Washington Urban Renewal Area, New York City, Appendix E. Louis Berger and Associates, Inc.: The Cultural Resource Group. Monograph on file at the NYC Landmarks Preservation Commission.

Schmid, E.F.
1972 Atlas of Animal Bones. Elsevier Publishing Co., New York.

Schwind, Arlene Palmer
1984 "The Ceramic Imports of Frederick Rhinelander, New York Loyalist Merchant." Winterthur Portfolio 19(1):21-36.

South, Stanley
1964 "Analysis of the Buttons from Brunswick Town and Fort Fisher." The Florida Anthropologist 17(2) (June):113-133.

1974 Palmetto Parapets. Exploratory Archaeology at Fort Moultrie. South Carolina, 38 CH 50. Anthropological Studies #1. Institute of Archaeology and Anthropology, University of South Carolina, Columbia, South Carolina.

Steward, Regina, and Geraldine Cosentino
1976 Bottles. Golden Press, New York.

Stokes, I. N. Phelps
1915-1928 The Iconography of Manhattan Island, 1498-1909. Volumes 1-6. Robert H. Dodd, New York.

Stone, Lyle M.
1974 Fort Michilimackinac 1715-1781. An Archaeological Perspective on the Revolutionary Frontier. The Museum, Michigan State University, East Lansing Michigan.

Struever, S.
1969 "Flotation Techniques for the Recovery of Small-Scale Archaeological Remains." American Antiquity 33(3):353-362.

Thomas, D.H.
1969 "Great Basin Hunting Patterns: A Quantitative Method for Treating Faunal Remains." American Antiquity 34(4):392-401.

1972 "Analysis of Faunal Remains." In The Archaeology of Barrel Springs Site (NV-Pe-104), Pershing County, Nevada, edited by R.A. Cowen. Archaeological Research Facility, Department of Anthropology, University of California, Berkeley.

Thomas, D.H., and D. Mayer
1985 "Behavioral Faunal Analysis of Selected Horizons." In The Archaeology of Monitor Valley 2. Gatecliff Shelter, edited by D.H. Thomas et al., pp. 353-391. Anthropological Papers of the American Museum of Natural History 59 (1). AMNH, New York.

Walker, Iain C.
1977 Clay Tobacco Pipes with a Particular Reference to the Bristol Industry. 4 Volumes. National Historic Parks and Sites Branch, Parks Canada, Dept. of Indian Affairs and Northern Development, Ottawa.

Walker, John
1971 Excavation of the Arkansas Post Branch of the Bank of the State of Arkansas. National Park Service, Dept. of the Interior, Washington, DC.

Watson, P.
1976 "In Pursuit of Prehistoric Subsistence: A Comparative Account of Some Contemporary Flotation Techniques." Midcontinent Journal of Archaeology 1(1):77-100.

Weber, Carmen A.
1988 "A Phase I Archaeological Investigation of the Site of the Franklin Institute Futures Center." Report on file at the Franklin Institute, Philadelphia.

Wertenbaker, Thomas J.
1949 The Golden Age of Colonial Culture. New York University Press, New York.

Woolfender, G.E.
1961 "Post Cranial Osteology of the Waterfowl." Bulletin of the Florida State Museum 6(1).

Zielger, A.C.
1965 "The Role of Faunal Remains in Archaeological Investigations." In Symposium on Central California Archaeology, edited by F. Curtis, pp. 47-75. Sacramento Anthropological Society Papers, no. 3.

Zorn, George & Co.
1872 Pipes & Smokers Articles. George Zorn & Co. Fifth Edition Merchandizing Catalogue. Philadelphia.

Zurmuhlen, Frederick H.
1956 "The Rehabilitation of City Hall." In The Renascence of City Hall, edited by Ernest Neufeld, pp. 17-30. New York City Department of Public Works, New York.

APPENDIX A: DESCRIPTION OF EACH SQUARE

Sherene Baugher

APPENDIX A

CITY HALL EXCAVATION - DESCRIPTION OF EACH SQUARE

PLEASE NOTE: The word "unit" was used by the Brooklyn College faculty and students in recording and bagging artifacts for what we call in historical archaeology "levels." For this site please consider the words "units" and "levels" to be synonymous.

ALMSHOUSE SQUARES:

N30 W10, N30 W10/15 (IS SAME AS N30 W10)

N35 W10, N35 W10/15 (IS SAME AS W35 W10)

N40 W10, N40 W15, N40 W10/15 (IS SAME AS N40 W15)

N40 W20, AND PART OF N45 W20

N30 W10 (AND N30 W10/15)

19TH & 20TH C. LEVEL (UNIT): 1, 4, 5, 7, 8 , 11

LEVEL (UNITS) DIRECTLY ABOVE ALMSHOUSE: 12 - RED BROWN CLAY SOIL

ALMSHOUSE LEVELS (UNITS): 13 - SANDY SOIL W/ BRICK

15 - BRICK W/ SOIL

16 - BRICK

21 - FLOOR SURFACE

DISTURBED AREAS LEVELS (UNITS):

9 (0 ARTIFACTS), 14, 17 - CLEANING LEVELS/UNITS

18 AND 19 - TOTAL LENGTH OF SOUTH WALL CUT BACK 16 INCHES, NO STRATAGRAPHIC LEVELS WERE MAINTAINED.

6 - STEAM TRENCH

2, 3, 10, 20 - 20TH C. WATER PIPE TRENCH

N35 W10 (AND N35 W10/15)

19TH & 20TH C. LEVELS (UNITS): 1, 2, 3, 4,

LEVELS (UNITS) DIRECTLY ABOVE ALMSHOUSE: 5, 6 - RED BROWN SOIL

ALMSHOUSE LEVELS (UNITS): 7 - RUBBLE (MAY BE CONTAMINATED WITH MATERIAL FROM WATER PIPE TRENCH)

9 - RUBBLE & PLASTER

10 - LESS RUBBLE, MORE PLASTER

12 - SOIL ABOVE FLOOR

14 - FLOOR SURFACE

DISTURBED LEVELS (UNITS): 8 AND 11 - CLEANING UNIT (LEVEL)

13 AND 15 - WATER PIPE TRENCH

16 - WALL SLIPPAGE

N40 W10

19TH & 20TH C. LEVELS (UNITS): 1, 2, 3, 4, 5

LEVEL (UNIT) DIRECTLY ABOVE ALMSHOUSE: 5 - YELLOW BROWN SOIL

ALMSHOUSE LEVELS (UNITS): 6 - BRICK & MORTAR

7 - SOIL W/ PLASTER

8 - SOIL ABOVE FLOOR

9 - FLOOR SURFACE

DISTURBED AREAS: 10 - STEAM LINE TRENCH

11 - WALL SLIPPAGE

N40 W15

19TH & 20TH C. LEVELS (UNITS): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

LEVELS (UNITS) DIRECTLY ABOVE ALMSHOUSE: 11 YELLOW CLAY, 12 RED CLAY

ALMSHOUSE: 13 - BRICK

14, 15, 16 - BRICK, MORTAR & CLAY

17 - PLASTER W/BRICK

20, 21, 22 - SOIL ABOVE FLOOR

26 - FLOOR SURFACE

DISTURBED AREAS LEVELS (UNITS): 18 AND 23 - CLEANING OF COLLAPSED WALL

19 - PART OF GROSSMAN BACKFILL

24 - PART OF GROSSMAN BACKFILL

25 - WALL SLIPPAGE

N40 W20

19TH & 20TH C.: 1, 2, 3

LEVELS (UNITS) ABOVE ALMSHOUSE: 4 AND 5 - BROWN SAND MIXED WITH YELLOW CLAY

ALMSHOUSE: 6 - BRICK, SOIL & MORTAR

N45 W20 (N45 W15/20 SHOULD BE ADDED TO N45 W20)

19TH & 20 TH C. LEVELS (UNITS): 1, 2

YARD AREA: 6 - SANDY SOIL (POSSIBLE 18TH C. SURFACE)

7 - YELLOW CLAY (POSSIBLE 18TH C. SURFACE)

8 AND 9 - SANDY SOIL (POSSIBLE 18TH C. SURFACE)

12 - MOTTLED RED BROWN SOIL

ALMSHOUSE: 3 AND 4 - MATERIAL DIRECTLY ABOVE BROWNSTONE FOUNDATION WALL, APPEARS TO BE THE SAME MATERIAL AS WAS FOUND INSIDE THE FOUNDATION

NOTE: The Almshouse levels/units may be contaminated with material from the 19th and 20th c. levels

TRENCH NEXT TO BROWNSTONE FOUNDATION WALL: 10 AND 11

DISTURBED AREA: 5 (RUBBLE OF 3 COLLAPSED UNITS)

POSSIBLE ALMSHOUSE YARD AREA:

N45 W10, N45 W15, N45 W15/20, PART OF N45 W20, N50 W15, N25 W10

N45 W10

19TH & 20 TH C.: UNIT: 1, 2, 3

UNKNOWN LEVELS (UNITS): 4 - YELLOW CLAY MIXED WITH BROWN SOIL

5 - (NO EXCAVATION DESCRIPTION)

AREA OUTSIDE OF ALMSHOUSE FOUNDATION:

6 - EXCAVATED 18 INCHES BELOW BASE OF BROWNSTONE FOUNDATION WALL (NO ARTIFACTS)

N45 W15

DISTURBED AREA LEVELS (UNITS): 1 - 6 GROSSMAN'S BACKFILL LEVELS

N50 W15 (NOTE: WE EXCAVATED ONLY THE 2 POSSIBLE 18TH CENTURY YARD SURFACES AND NOT THE 19TH AND 20TH CENTURY LEVELS)

POSSIBLE 18TH C. YARD LEVELS: 1 - RED BROWN SOIL (THIS SHOULD BE THE SAME LEVEL AS N45 W20 LEVEL 6)

2 - YELLOW CLAY (THIS SHOULD BE SAME AS N45 W20 LEVEL 7)

N25 W10

20TH CENTURY LEVELS (UNITS) - 1, 2, 4

19TH CENTURY LEVEL (UNIT) - 3 DARK BROWN SOIL

YARD AREA AT SOUTH END OF THE ALMSHOUSE:

5, 7 - COLLAPSED BRICK WALL FROM ALMSHOUSE

8 - BLACK CLAY UNDER THE ALMSHOUSE BRICK WALL

9 - SANDY SOIL MIXED WITH MORTAR

10 - SANDY SOIL MIXED WITH MORTAR

12 - FOUNDATION FOOTING (SOUTH WALL)
(IT IS AT BORDER OF N25 W10 AND N30 W10)

DISTURBED AREAS: 6 - STEAM LINE TRENCH

11 - CLEANING SQUARE

DISTURBED YARD AREA - 19TH C. SURFACES, POSSIBLE 18TH C. SURFACES:
N20 W5, N20 W10, AND N30 W5

(NOTE: THE 19TH AND 18TH C. LEVELS ACTUALLY MAY BE DISTURBED BY THE INSTALLATION OF THE ELECTRIC AND HEATING LINES)

N20 W5

20TH C.: 1

19TH C. - 4 - GREYBROWN SOIL

6 - YELLOW/BROWN CLAY

8, 9, 10 - BROWN SOIL

18TH C.?: 12, 13, 14 - RED BROWN SANDY SOIL WITH SOME PATCHES OF YELLOW CLAY

15, 16 - RED BROWN SOIL

DISTURBED: 2, 3 - 19TH C. STEAM LINE TRENCH

5, 7, 11, 17 - CLEANING UNITS

N20 W10

20TH C.: 1, 2

19TH C./18TH C.: 5 - RED BROWN SANDY SOIL

6 - DARK YELLOW CLAY SOIL

7, 8 - RED BROWN SANDY SOIL

DISTURBED: 3, 4 - STEAM LINE TRENCH

N30 W5

20TH C. LEVELS (UNITS): 1 AND 2

PARTIAL STONE WALL (19TH C.?): 9 AND 10

POSSIBLE 18TH C. SURFACE: 15 AND 17 - YELLOW CLAY

23 - RED BROWN SOIL

24 - DARK BROWN SOIL

DISTURBED AREA: 3, 5, 16 - STEAM TRENCH

6, 7, 11, 14, 20, 25 - 20TH C. WATER PIPE TRENCH

4, 8, 12, 13, 19, 21, 22, 25, 26 - CLEANING UNITS (LEVELS)

CITY HALL STEPS:

NO E10/15, NO E5, NO E0, NO W5, AND N5 W10

NO E10/15

20TH C. LEVELS (UNITS): 1, 2

SOIL STRATA SOUTH OF THE FOOTING TO THE CITY HALL REAR STEPS:

3 AND 4 - SANDY BROWN SOIL

5 - DARK BROWN SOIL WITH ROCKS AND MORTAR

NO E5

20TH C. LEVEL (UNIT): 1 ONLY ONE LEVEL WAS EXCAVATED BECAUSE THE AREA EXPOSED WAS PART OF THE FOOTING TO THE STEPS OR THE 20TH C. ASPHALT PAVEMENT

NO E0

20TH C. LEVELS (UNITS): 1 AND 2 - FOOTING FOR THE STEPS WAS EXPOSED AND NO OTHER LEVELS WERE EXCAVATED

NO W5

20TH C. LEVELS (UNITS): 1 AND 2

AREA SOUTH OF THE FOOTING: 3 AND 4 - DARK BROWN CLAY

8 AND 10 - SANDY BROWN SOIL

MATERIAL WITHIN THE FOOTING FOR THE STEPS:

5, 6, 7 - RED BROWN SOIL WITH PLASTER

9 - POCKET OF FINE RED BROWN SOIL

11, 12, 13 - MORTAR AND ROCKS

NOTE: Brooklyn College students removed the broken brownstone and marble from the footing so that LPC preservationists could study the building techniques

DISTURBED AREA: 14 AND 15 - CLEANING SQUARE

N5 W10

20TH C. LEVEL (UNIT): 1

POSSIBLE 19TH C. LEVELS (UNITS): 4, 5

POSSIBLE 18TH C. GROUND SURFACE: 8 - YELLOW CLAY

11 - RED BROWN SOIL

DISTURBED LEVELS (UNITS): 2, 3, 6, AND 7 - STEAM LINE DISTURBANCE

9, 13 - CLEANING UNITS

10, 12, AND 14 - CLAY PATCHES

NOTE: THE BUILDER'S TRENCH FOR THE STEPS WAS NOT IDENTIFIED DURING EXCAVATION. THEREFORE, NO ARTIFACTS CAN BE ASSOCIATED WITH THIS TRENCH.

DISTURBED SQUARES (TWO TYPES)

A) DISTURBED BY INSTALLATION OF 20TH C. ELECTRIC LINES

B) DISTURBED BY INSTALLATION OF LATE 19TH C. STEAM LINE TRENCH

SQUARES DISTURBED BY INSTALLATION OF 20TH C. ELECTRIC LINES:
N15 E10, N15 E5, N15W10, N10 W10

N10 W10

20TH C.: 1, 2, 4 - DISTURBED BY PART OF THE INSTALLATION OF 20TH C. ELECTRIC LINES IN N15 W10

19TH - 20TH: 3, 6, 7 - CLAY CIRCULAR POST-LIKE HOLE (NO DIAMETER GIVEN)

STERILE SOIL: 8 - SANDY SOIL

N15 E10

19TH - 20TH C.: 1 TO 4 - DISTURBED ON 20TH C. BY INSTALLATION OF ELECTRICAL LINES

N15 E5

19TH - 20TH C.: 1 TO 6 - DISTURBED IN 20TH C. BY INSTALLATION OF ELECTRICAL LINES

19TH C.: 7 - MOTTLED RED BROWN SOIL UNDERNEATH CLAY BASE FOR THE ELECTRICAL LINES

N15 W10

20TH C.: 1 TO 9 - 20TH C. INSTALLATION OF 20TH C. ELECTRICAL PIPES

STEAM LINE TRENCH (DISTURBED SQUARES): N10 W5, N40 W5, N35 W5

N10 W5

20TH C.: 1 - CLEANING BASE LAYER UNDER CEMENT WALKWAY

7 AND 8 - THIS WAS PART OF THE CLAY BASE FOR THE INSTALLATION

OF THE 20TH C. ELECTRIC LINES FOUND IN SQUARES N15 E5, N15 W10

LATE 19TH C.: 2 - 4, 6 - THE MANHOLE FOR THE STEAM LINE TAKES UP 1/3 OF THE SQUARE, THIS SQUARE IS WITHIN THE TRENCH FOR THE STEAM LINE

CLEANING LEVELS (UNITS): 5, 9, 10

N40 W5 (DISTURBED SQUARES)

1980'S TRENCH FOR ELECTRICAL LINES: 1 AND 6

1880'S STEAM LINE: 2, 3, 5

CLEANING SQUARE: 4, 7, 8

N35 W5 (DISTURBED SQUARE)

20TH C.: 1

1880'S STEAM LINE TRENCH AND 20TH C. WATER PIPE LINE:

2, 3, 4, 6 - BASE OF THE WATER PIPE TRENCH

20TH C. ELECTRIC LINE DISTURBANCE: 5

APPENDIX B: SUMMARY OF THE DIAGNOSTIC LEVELS

Sherene Baugher

APPENDIX B

CITY HALL EXCAVATION - SUMMARY OF DIAGNOSTIC LEVELS

PLEASE NOTE: The word "unit" was used by the Brooklyn College faculty and students in recording and bagging artifacts for what we call in historical archaeology "levels." For this site please regard "levels" and "units" as the same term.

ALMSHOUSE SQUARES:

N30 W10, N30 W10/15 (IS SAME AS N30 W10)

N35 W10, N35 W10/15 (IS SAME AS W35 W10)

N40 W10, N40 W15, N40 W10/15 (IS SAME AS N40 W15)

N40 W20, PART OF N45 W20

N30 W10 (AND N30 W10/15)

LEVEL (UNITS) DIRECTLY ABOVE ALMSHOUSE: 12 RED BROWN CLAY SOIL

ALMSHOUSE LEVELS (UNITS): 13 - SANDY SOIL W/ BRICK

15 - BRICK W/ SOIL

16 - BRICK

21 - FLOOR SURFACE

N35 W10 (AND N35 W10/15)

LEVELS (UNITS) DIRECTLY ABOVE ALMSHOUSE: 5, 6 - RED BROWN SOIL

ALMSHOUSE LEVELS (UNITS): 7 (MAY BE CONTAMINATED WITH MATERIAL FROM 20TH C. WATER PIPE TRENCH)

9 - RUBBLE & PLASTER

10 - LESS RUBBLE, MORE PLASTER

12 - SOIL ABOVE FLOOR

14 - FLOOR SURFACE

N40 W10

LEVEL (UNITS) DIRECTLY ABOVE ALMSHOUSE: 5 - YELLOW BROWN SOIL

ALMSHOUSE LEVELS (UNITS): 6 - BRICK & MORTAR

7 - SOIL W/ PLASTER

8 - SOIL ABOVE FLOOR

9 - FLOOR SURFACE

N40 W15

LEVELS (UNITS) DIRECTLY ABOVE ALMSHOUSE: 11 YELLOW CLAY, 12 RED CLAY

ALMSHOUSE: 13 - BRICK

14, 15, 16 - BRICK, MORTAR & CLAY

17 - PLASTER W/BRICK

20, 21, 22 - SOIL ABOVE FLOOR

26 - FLOOR SURFACE - PLASTER W/SOIL

N40 W20

LEVELS (UNITS) DIRECTLY ABOVE ALMSHOUSE: 4 AND 5 - BROWN SAND MIXED WITH YELLOW CLAY

ALMSHOUSE: 6 - BRICK, SOIL & MORTAR

N45 W20 (N45 W15/20 SHOULD BE ADDED TO N45 W20)

ALMSHOUSE: 3 AND 4 - material directly above brownstone foundation wall, appears to be the same material as was found inside the foundation

NOTE: These levels may be contaminated with material from 19th and 20th c. levels.

POSSIBLE ALMSHOUSE YARD AREA: N45 W15/20, PART OF N45 W20, N50 W15, N25 W10

N45 W20 (N45 W15/20 SHOULD BE ADDED TO N45 W20)

YARD AREA: 6 SANDY SOIL - POSSIBLE 18TH C. SURFACE

7 YELLOW CLAY - POSSIBLE 18TH C. SURFACE

8 AND 9 - SANDY SOIL - POSSIBLE 18TH C. SURFACE

12 - MOTTLED RED BROWN SOIL

TRENCH NEXT TO BROWNSTONE FOUNDATION WALL: 10 AND 11

N50 W15 (NOTE: WE EXCAVATED ONLY THE 2 POSSIBLE 18TH CENTURY YARD LEVELS AND NOT THE 19TH AND 20TH CENTURY LEVELS)

POSSIBLE 18TH C. YARD LEVELS: 1 - RED BROWN SOIL (THIS SHOULD BE THE SAME LEVEL AS N45 W20 LEVEL 6)

2 - YELLOW CLAY (THIS SHOULD BE SAME AS N45 W20 LEVEL 7)

N25 W10

YARD AREA AT SOUTH END OF THE ALMSHOUSE:

5, 7 - COLLAPSED BRICK WALL FROM ALMSHOUSE

8 - BLACK CLAY UNDER THE ALMSHOUSE BRICK WALL

9 - SANDY SOIL MIXED WITH MORTAR

10 - SANDY SOIL MIXED WITH MORTAR

12 - FOUNDATION FOOTING (SOUTH WALL)
(IT IS AT BORDER OF N25 W10 AND N30 W10)

CITY HALL STEPS: NO E10/15, NO W5

N10 E10/15

SOIL STRATA SOUTH OF THE FOOTINGS TO CITY HALL REAR STEPS:

3 AND 4 - SANDY BROWN SOIL

5 - DARK BROWN SOIL WITH ROCKS AND MORTAR

N0 W5

AREA SOUTH OF THE FOOTINGS: 3 AND 4 - DARK BROWN CLAY

8 AND 10 - SANDY BROWN SOIL

MATERIAL WITHIN THE RUBBLE FOOTING FOR THE STEPS:

5, 6 AND 7 - RED BROWN SOIL

9 - POCKET OF FINE RED BROWN SOIL

11, 12, 13 - MORTAR AND ROCKS

NOTE: Brooklyn College students removed the broken brownstone and marble from the footings so that LPC preservationists could study the building techniques

N5 W10

POSSIBLE 19TH C. LEVELS (UNITS): 4 AND 5

POSSIBLE 18TH C. GROUND SURFACE: 8 - YELLOW CLAY

11 - RED BROWN SOIL

SQUARES IN THE DISTURBED YARD AREA THAT MAY HAVE 19TH OR LATE 18TH C. GROUND SURFACE: N20 W5, N20 W10, AND N30 W5

NOTE: THE 19TH AND 18TH C. LEVELS ACTUALLY MAY BE DISTURBED BY THE INSTALLATION OF THE 20TH ELECTRIC AND HEATING LINES)

N20 W5

19TH C. - 4 - GREYBROWN SOIL

6 - YELLOW/BROWN CLAY

8, 9, 10 - BROWN SOIL

18TH C.?: 12, 13, 14 - RED BROWN SANDY SOIL WITH SOME PATCHES OF YELLOW CLAY

15, 16 - RED BROWN SOIL

N20 W10

19TH C./18TH C.: 5 - RED BROWN SANDY SOIL

6 - DARK YELLOW CLAY SOIL

7, 8 - RED BROWN SANDY SOIL

N30 W5

PARTIAL STONE WALL (19TH C.?): 9 AND 10

POSSIBLE 18TH C. SURFACE: 15 AND 17 - YELLOW CLAY

23 - RED BROWN SOIL

DISTURBED SQUARES (TWO TYPES)

SQUARES: A. DISTURBED BY INSTALLATION OF 20TH C. ELECTRIC LINES:

N15 E10, N15 E5, N15 W10

B. DISTURBED BY INSTALLATION OF LATE 19TH C. STEAM LINE TRENCH:

N10 W5, N35 W5, N40 W5

APPENDIX C: DESCRIPTION AND ANALYSIS OF THE PIPES

Diane Dallal

APPENDIX C: PIPE ANALYSIS

The following section contains a square-by-square, unit-by-unit, analysis of the Almshouse pipe collection from the diagnostic levels.

I. The Almshouse Pipes

A. Levels Directly Above the Almshouse

N30 W10 & N30 W10/15: units 1 and 2

No pipes were recovered.

N35 W10 & N35 W10/15: units 5 & 6

Three (3) pipestems were recovered from units 5 and 6. Two stems from unit 6 had bore diameters of 4/64"; the single diagnostic stem from unit 5 (5/64"), was made by William Morgan of Liverpool between 1767-1796.

N40 W10: unit 5

In unit 5, only two stem fragments were found, one of which had a smoke hole which measured 4/64" and the other was unmeasurable.

N40 W15: units 11 & 12

No pipes were recovered.

N40 W20: units 4 & 5

No pipes were recovered.

B. Inside the Walls of the Almshouse

N30 W10 & N30 W10/15: units 13,15,16 and 21

Nine (9) pipe fragments were recovered. The sample of stems was inadequate (4), therefore no mean date was calculated.

In unit/level 13, there were two stems (4/64", 5/64"), and the Dutch

pipe bowl described above, which has a TPQ of 1740. The Almshouse was constructed in 1735, therefore it is reasonable to assume the pipe was contemporaneous with the Almshouse.

Unit/level 15 contained a broken, unmeasurable stem with a spot of yellow glaze. (All other glazed pipes were found in disturbed levels.)

The Almshouse floor, unit 21, contained two bowl fragments--one had been smoked while the other had not. Although in fragmentary condition, this tiny smoked pipe sherd had raised decorations on its face which were too worn and too small to decipher. It is suggested that this pipe was manufactured in England during the eighteenth century. In addition, four stem fragments were recovered, one 4/64", one 5/64", and two unmeasurable because they were broken.

N35 W10 & N35 W10/15: units 7, 9, 10, 12, 14

Twenty-seven (27) pipe fragments were excavated from these strata. A mean date of 1759.7 was established for this area of the Almshouse, based on a sample of twenty stem bore diameters.

Within unit 7 were four 4/64" bores and three 5/64" stems. Two of these stems had been smoked. One of the stems with a 4/64" bore diameter had a heel attached with a flower on either side of the heel. This pipe was manufactured in London between 1700 and 1770.

In the rubble and plaster layer of unit/level 9 were four (4) undecorated bowl fragments--two (2) rim fragments were first smoked and then burned in a fire. In addition there were four stems with bones measuring 4/64" and three with bores of 5/64" in diameter.

In unit/level 10, a utilized bowl fragment marked ":S" was recovered along with two stems with 4/64" and 5/64" bores, respectively. Unit 12 contained a single 4/64" smoked stem with a smoked bowl rim fragment

which also appeared to have been burned.

On the Almshouse floor itself (unit/level 14) were three (3) 5.64" stems, as well as a complete Dutch bowl. The maker's mark located at the base of the heel was "FAG." It is suggested that the pipe was manufactured in the workshop of Frans A. Glas of Gouda who owned the mark in 1737 (Duco 1982: 88). The bowl is marked on either side of the heel with a shield, which represents the Arms of the City of Gouda, with the letter "S" above the shield. This would date the pipe to no earlier than 1740.

N40 W10: units 6-9

Fifteen (15) pipe fragments were found in this square. A mean date of 1759.7 was calculated based on ten bore diameters.

An undecorated pipebowl was recovered from unit/level 6; its bore diameter was 5/64". Unfortunately, the pipe's most chronologically distinguishable attributes were missing and, as a result, the pipe could not be dated. (However, it is definitely not a seventeenth-century pipe.) Also included in this level were two bowl rim fragments, both smoked. One of these contained the top half of a cartouche with a design consisting of a "V" pointing left. Neither bowl fragment could be dated. Generally, however, pipes with cartouches are from Bristol, England and date from the late seventeenth to mid-eighteenth centuries. Three pipe stems with bore diameters of 4/64" and one with a diameter of 5/64" were also recovered from unit 6.

Unit/level 7 contained two 4/64" stems and two 5/64" stems, one of which was smoked. Also within this unit were two mendable bowl fragments which were two fragmentary to date. They were definitely not from a seventeenth-century pipe, however.

Unit/level 8 only had one stem fragment (5/64"). There were no pipes on the floor surface of the Almshouse itself (unit 9) within this square.

N40 W15: units 13-17, 20-22, & 26

Fourteen (14) pipes were recovered from N40 W15 and the mean date based upon the small sample of eleven bores was 1764.9.

Unit/level 13, the brick level of the Almshouse, contained four stem fragment, two each with 4/64" and 5/64" smoke hole diameters. One of these stems (4/64") was glazed a bright yellow. "Glazed tobacco pipes are known from the seventeenth and eighteenth centuries" (Duco 1980: 196). However, there was a reintroduction of these pipes in the middle of the nineteenth century (Ibid.). Another one of the stems (4/64") had red paint on its surface. It is not known if this was deliberate or an accidental meeting with a stem on a newly painted surface. One bowl fragment from a smoked pipe was also recovered.

No pipe fragments were recovered from units 14 and 15, and unit 16 had only one mouthpiece (4/64"). Similarly, unit 17 contained two fragments--one mouthpiece (5/64") and one stem fragment (4/64") with part of its heel attached.

In units 20-22, the two bowl fragments found had been smoked. One of the fragments from unit 21 had a rouletted rim and mended with a bowl fragment from unit 23, a disturbed unit of this square. When mended, the pipe revealed a typical eighteenth century Dutch shape. The master's initials, "D/R," on either side of the heel, were in an unusual location for a Dutch pipe, however. It is generally English pipes which are marked in this manner. The burnishing, rim rouletting, and ovoid shape, however, strongly suggest that the pipe was

manufactured in Gouda during the eighteenth century by an unknown maker.

There were also three (3) stems (4/64") in unit 22. Lying on the floor (unit 26) was a single stem (5/64").

N40 W20: unit 6

Only three (3) pipestem fragments were recovered from the single stratum associated with the Almshouse (unit/level 6). All bore diameters were 4/64". The sample was too inadequate, however, to determine a mean date.

N45 W20 & N45 W15/20: units 3 & 4

Three smoking pipe fragments were excavated from these levels. Two (2) from unit 3 measured 4/64" and 5/64" respectively, and one (1) undiagnostic fragment from unit 4 had a smoke hole which measured 4/64". The sample was too small for a mean date to be established.

C. The Nineteenth and Twentieth Century Levels Above the Almshouse Squares

N30 W10 and N30 W10/15: units 1, 4, 5, 7, 8, 11

A total of fifteen (15) pipe fragments were recovered from these units. Unit/level 1 had a small piece of a stem with a spot of yellow glaze. Diagnostic pipes in N30 W10 were primarily located in unit/level 4 and included a brown-glazed clay mouthpiece (4/64") dating to the nineteenth century and the ribbed or "pillar-molded" bowl of a common clay pipe which might date anywhere between the late eighteenth through the entire nineteenth century. There were also six stem fragments from this level, one of which was unmeasurable. The rest had

bore diameters of 4/64" and 5/64".

No pipes were recovered from levels 5 and 8: However, level 7 contained a yellow-glazed bowl rim fragment. Glazed pipes were manufactured during the seventeenth and eighteenth centuries and saw a resurgence in the mid-nineteenth century (Duco 1980). There was also a plain, smoked clay bowl sherd and another ribbed common pipe bowl (5/64"). In addition, there were three stem fragments with 4/64" and 5/64" bore diameters. Unit/level 11 contained a single stem (5/64").

N35 W10 and N35 W10/15: units 1-4

A total of eight pipe fragments were recovered. In unit 1, there were four stem fragments (4/64" and 5/64"). The two stem fragments (4/64") recovered from level 2 mended. No pipes were recovered in level 3, and in level four there were two (2) pipe bowl fragments, both smoked. One was plain and one was the ribbed or "pillar-molded" type, advertised in 1872 as the "cheapest pipe in existence" (Zorn 1872:9).

N40 W10: units 1-5

Only seven (7) fragments were found in this square. Three stem fragments were recovered from level 1 (4/64", 5/64", 6/64"). The stem with the 6/64" bore diameter had been whittled and worn and only one of four (4) stems with this bore diameter found on the entire site. "The larger the bore hole, the older the pipe" is a general rule of thumb. No pipes were recovered from level 2. Level 3, however, contained a single yellow-glazed bowl rim fragment similar to the fragment in N30 W10, level 7. The two sherds did not cross mend.

There was only a broken stem fragment in level 4 and two stems in level 5, one of which is unmeasurable and the other 4/64".

N40 W15: units 1-10

Eighteen (18) pipe fragments were excavated from this square. Unit 1 had a single stem (4/64") and two smoked bowl fragments. Unit 2 contained a single stem (4/64"). No pipes were recovered from levels 3 or 4. However, unit 5 contained two stems (5/64") which mended. One of these stems had a spot of yellow-glaze and is a mouthpiece. These pipes with spots of glaze suggest that a potter may have been firing the pipes, perhaps locally. In unit 6, there was a broken stem and level 7 had two bowl sherds, four stems with 4/64" bores and one with a 5/64" diameter. Within unit 8 only one bowl fragment was recovered, and from unit/level 9, two stems (4/64" and 5/64"), one of which (4/64") was whittled in an attempt to make a whistle.

N40 W20: units 1-3

No pipes were recovered from the nineteenth/twentieth century levels of this square.

N45 W20 and N45 W15/20: units 1 & 2

Two clay smoking pipe fragments were excavated. Both were stems, one of which is stained red and black, as if it were in a fire.

II. POSSIBLE ALMSHOUSE YARD AREA

N45 W20 (N45 W15/20): units 6-12

The yard area had only two pipe fragments--both from unit 6. One bowl fragment was marked "RT." Although fragmentary, it is suggested that this pipe was manufactured by Robert Tippett II (1698-1722) of Bristol, England. This level also contained a pipe bowl rim fragment which had been smoked but did not mend with the Tippett bowl. No pipes were recovered from units 7-12.

N50 W15: units 1 & 2

Only one pipe fragment was recovered from this area and this was a single stem from unit 2 with a bore diameter of 5/64".

N25 W10: units 5, 7-10 & 12

Only 4 fragments were recovered from the yard area at the south end of the Almshouse. Two stems with 4/64" and 5/64" bore diameters, respectively, from unit 5, and from unit 10, an unsmoked bowl fragment and a single unmarked, unsmoked, undiagnostic stem with a 4/64" bore diameter. It appeared to have been altered, perhaps in an attempt to make a whistle or a comfortable mouthpiece. No pipes were recovered from units 7-9 or 12.

III. The City Hall Steps

N10 E10/15: units 3-5

A total of 6 fragments was recovered from units 3-5 within this square. unit/levels 3 and 4, the "sandy brown soil," contained five of the six sherds. In unit 3, three fragments were recovered: 2 stems with 5/64" bore diameters and one decorated bowl sherd. Unfortunately, the raised motif decorating the bowl was to small to comprehend.

In unit 4, two fragments were recovered: a stem with a 4/64" bore diameter and a decorated bowl fragment, again too small to decipher. These decorative motifs or figures are raised, and a post-1750 date is suggested.

Unit 5, the level composed of "dark brown soil with rocks and mortar" contained only one undecorated bowl rim from a pipe which had been smoked.

N0 W5: units 3-13

Only a single pipestem (4/64") encrusted with mortar was recovered from unit 3, the dark brown clay in the area south of the footing.

N5 W10: units 4, 5, 8 & 11

A total of 13 pipe fragments, all badly broken, was recovered from N5 W10. Of these, only 2 were recovered from levels associated with the City Hall Steps. For example, none were found in level 4 and only one was found in unit 5 of these "possible nineteenth century levels." This was an undecorated, unmarked stem (5/64"). Although the evidence is scant, the narrowness of the bore diameter suggests an eighteenth or nineteenth century date.

Since disproved by the ceramic analysis, it was first suggested that levels 8 and 11 represented a possible eighteenth century ground surface. One smoked stem (5/64") was found in level 8, the "yellow clay." This stem had been burned in a fire. No pipes were recovered from unit 11.

The poor condition of the pipe sample from N5 W10 suggests redeposition and/or burning--perhaps a trash deposit and/or whistle-making activities. Nothing in the pipe sample refutes an eighteenth century date.

IV. Squares in the Disturbed Yard Area That May Have Nineteenth or Late Eighteenth Century Ground Surface

N20 W5: units 4 & 6, 8-10 (Nineteenth century), units 12-16 (Eighteenth century)

In sum, 12 pipe fragments were excavated from N20 W5. Of these, only 5 were recovered from the possible nineteenth century surface.

Two fragments were found in level 4, the "grey brown soil," and neither was diagnostic. One, an unmeasurable (because broken lengthwise) stem, and the other, a plain bowl fragment with no special chronological characteristics. No pipes were found in levels 6 or 8, but 3 fragments were recovered from level 10: one stem with a 4/64" bore and two stems with 5/64" bore diameters. One of the stems (5/64") had been smaoked but was also blackened by fire. There was no pipe evidence to suggest that this was not a nineteenth-century surface.

No pipes were recovered from the possible eighteenth-century surface (levels 12-16).

N20 W10: units 5-8

A total of 14 pipe fragments was recovered from N20 W10. Of these, only four were from levels 5-8, a possible "nineteenth/eighteenth C." component. The stem sample was too small to calculate a mean date. Recovered from unit/level 6 was a stem (5/64") which had alterations or whittle marks; perhaps it was an attempt to make a whistle. Two fragments were found in level 5 and these were a single stem with a 4/64" bore diameter and one undecorated and unsmoked rim bowl fragment.

It should be noted that in the twentieth-century levels of this square (unit/levels 1 and 2) were two fragments of an eighteenth-century Gouda pipe, much like those recovered from the units associated with the Almshouse. The heel of the bowl sherd found in unit 2 was marked with a crowned "L." This mark dates from 1726 and was in use until 1940 (Duco 1982:73). Like the pipes in the Almshouse levels, the Arms of the City of Gouda, surmounted by the letter "S," tells us that the pipe is quite "ordinary" by Gouda standards, and that it could not have been manufactured before 1740 (Duco 1980). The fragment of

pipe in level 1 consisted of part of a circle or cartouche within which was a tiny figure. Although this fragment did not mend with that in unit 2, it is believed to be from the same pipe. The little figure in the circle is a common Gouda mark.

N30 W5: units 9 & 10 (partial stone wall [nineteenth century?]): units 15, 17, & 23 (possible eighteenth century surface)

Only one pipe fragment came from levels 9 and 10. This was a single unsmoked, whittled stem with a bore diameter of 5/64" from level 9. There is not enough evidence to refute or confirm that this feature dates to the nineteenth century.

Three fragments were recovered from the "yellow clay" of level 15. These included two plain stems (5/64"), and one unmeasurable stem. No pipes were found in levels 17 and 23. Based on this scanty evidence, there is nothing to suggest this was not an eighteenth-century surface.

It is interesting to note that eighteenth-century pipes were recovered from twentieth-century levels 1, 2, and 3. The one in level 3 dated between 1720-1820. (Noel Hume 1969).

V. Disturbed Squares

A. Squares Disturbed by the Installation of Twentieth Century Electric Lines (N15 E10, N15 E5, and N15 W10)

N15 E5

There were thirty-two pipe fragments in this square. A unique stem (6/64") from level 3, which looks like a miniature furniture leg or game piece, or to be more precise, a poodle's leg, was found. Stems like these have been found in other New York City sites such as the Broad Financial Center site and in disturbed levels as well.

Another unusual stem (5/64") from this level was decorated with large circles and diagonal lines, and was not dissimilar to pipes manufactured in France by Fiolet during the nineteenth century (Zorn 1872). Howecer, this motif most resembles those decorative pipestems manufactured in Denmark by the factory of Ross, Collin, and ferslew between 1753 and c. 764 (Ahlefeldt-Laurvig 1980: 230).

In level 5 was a stem (5/64") marked "W.MORG..," manufactured by William Morgan of Liverpool between 1767 and 1796. A heel fragment recovered from level 6 was marked with the initials "W/G," one letter on either side of the heel. The maker of this mark is unknown, bu t they are generally dated to the Revolutionary War period, or more specifically between 1775-1830 (Dallal 1986). All of the other pipes in this square were undiagnostic.

N15 W10

Fourteen pipe fragments were recovered. Only two of these were diagmostic. The first, from level 2, was a stem of poor quality decorated with raised bars. Probably from the same pipe, but recovered from level 5, was a ribbed or pillar-molded bowl fragment of American or British manufacture dating to the late eighteenth or nineteenth century. These ribbed pipes were advertised as late as 1872 as being the "common clay pipe," the "cheapest pipe in existence" (Zorn 1872: 9).

B. Squares Disturbed by Installation of Late Nineteenth Century Steam Line Trench (N10 W5, N35 W5, N40 W5)

N10 W5

Four pipe fragments were recovered from N10 W5. All had 5/64" bore

diameters. One bowl rim fragment was ribbed, or pillar-molded, and believed to have been manufactured in America or Great Britain. This pipe style was extremely popular in the late eighteenth and nineteenth centuries. The pipe was touted as "the cheapest clay pipe in existence," and was known as the "C.D.--Common Clay Pipe" (Zorn 1872: 9). Better quality pipes in this pattern were imported of "fine German clay" (Ibid).

N35 W5

Six stem fragments were recovered from this square. All had bore diameters of 4/64" (2) and 5/64" (4). One stem was chronologically diagnostic, and that was the stem with the first initial "W....." inside a cartouche which broke off at that point. This pipe is identical to others made by William Morgan of Liverpool (1767-1796).

N40 W5

Nine stem fragments were excavated. A single stem (5/64") with part of the heel attached was decorated on the left side of the heel with a flower, perhaps a tulip. Pipes with similar long heels and flower marks have been dated to eighteenth-century London.

APPENDIX D: FAUNAL REPORT

Thomas Amorosi

APPENDIX D

ARCHAEOFAUNA:

The faunal material collected from the City Hall project does not represent a diversified fauna compared with other large urban assemblages in New York City. Table 1 illustrates the ordinal and percentage breakdown of the entire collection. The majority of the City Hall assemblage is represented by shellfish (Mollusca), followed by Fish (Pisces), Mammal and Bird (Aves). There are no rare species recorded within these materials such as those found in other collections (such as the 175 Water Street materials; see Comparison With Other Archaeofauna for references).

There are several unusual items to note on this species diversity table. First there is a high degree of fragmentation in this collection, demonstrated by the high ordinal count of the species and scrap categories. In addition, six small human remains (fragments) were recovered. The origin and nature of these remains is not known. However, historical accounts indicate that a potters field was formerly located east of the City Hall project area.

Tables 2 through 8 present summaries of the species diversity (by ordinal counts and percentage breakdowns) by time period. The time periods were defined by the association of ceramic and glass artifacts. Based upon the analysis of the ceramic and glass artifact categories (see Chapter Four) and the disturbance of many of the deposits, only Almshouse materials, c. 1780-1790s, will be discussed. All other deposits are listed here in the hopes that a future analyst will find

these materials useful for a biogeographic study.

COMPARISONS WITH OTHER ARCHAEOFAUNA:

In order to determine if the Almshouse materials represented a meaningful set of temporal data (information useful for the study of the 1700-1800 husbandry practices), these materials were compared to other eighteenth-century New York City and Northeast area collections. This block of time represented by one-hundred year time intervals has been demonstrated to exhibit patterning of past husbandry strategies in the Medieval and Early Modern time periods (cf. Biddick 1989). The assemblages used here are the Voorlezer House (Baugher et al. 1985), 7 Hanover Square (Janowitz 1989), Stadt Huys (Janowitz 1989), Broad Street (Janowitz 1989), 175 Water Street (Amorosi n.d., 1983, 1985; Biddick 1983; Gluck 1983), the Butler McCook farmstead (Bellatoni et al. 1982) and the Old Bank Farm farmstead (Amorosi 1983).

Table 9 lists the ordinal counts and percentage breakdowns of the major taxa for eighteenth century materials. Birds and Fish are not specified by species since few analysts have identified these materials to a species level. The use of a percentage breakdown (this data was used to generate Figures 1 & 2) is to ease the multiple problems of interdependence of ordinal counts (counting the same bone several times), fragmentation of the material and making comparisons between taxa.

The information contained within Table 9 exhibits some interesting patterns for the Almshouse materials. In comparing the Almshouse to other New York City collections, the Almshouse follows a similar pattern of use for cattle, caprines (sheep and goats), pigs, deer, and birds. The only major difference is that the percentage of materials

is rather low. Similarly, the Almshouse percentages are low in comparison to the eighteenth century farmsteads. The very odd percentage is that of fish. The Almshouse materials have the highest percentage (total fish material) when compared to the other sites.

This patterning suggests several things. The Almshouse occupants were tied into the local regional economy, but their consumption of major domestic mammals was lowest in the area. The relatively higher perxentage of bird consumption and the even higher percentage of fish would suggest that these items were used to supplement their diets. Tables 10 and 11 list the bird and shellfish species diversity. The bird materials are only represented by domestic stock (Chickens--Galliformes), commonly found in New York collections and the low number would suggest a bought or traded item. The shellfish were harvested locally off Lower Manhattan and are a common dietary item. It is interesting to note that throughout the North Atlantic, shellfish were used as either a starvation food (as in the Early Modern period of Iceland) or as a dietary supplement for lower social classes.

INTRA-SITE OBSERVATIONS OF THE MAJOR MAMMALIAN DOMESTICATES:

The major meat items for the Almshouse also suggest that the occupants were from a low social class. Figures 3 to 5 demonstrate the cuts of meat (skeletal element frequency) for cattle, caprines, and pigs. Each graph demonstrates a pattern of butcher shop purchases rather than a home butchering pattern as one might expect for lower social classes. However, only cuts that would stretch the household budget are evident in these graphs. Missing are the more costly cuts of meat, such as a rib roast. There is a relatively high proportion of

head (cranial) parts, suggesting a junk meat commonly used for stews. Pig's feet also seems to have been a very common meal at the Almshouse.

CONCLUSIONS:

Although information derived from the City Hall archaeofauna might seem limited at first glance, the collection provides a number of important sources of data:

1. The collection provides a temporal pattern useful for biogeographers (those studying when and where an animal species lived). On a more gross level of analysis the City Hall archaeofauna can provide the when and where of a number of species. Little is known about the distribution of the Tri-State bird, fish and shellfish populations. This assemblage considerably adds to a growing set of data now being researched at the Bioarchaeological Laboratory at Hunter College.

2. Very little is known about the actual diet of eighteenth-century New Yorkers. At present only five archaeological assemblages provide dietary and husbandry patterns for this time period. The Almshouse collection adds a critical sixth collection.

3. The Almshouse data provides the low part of the spectrum for regional economy studies in the local Tri-State area. This data will provide an actual scale with which to measure other higherstatus archaeofauna.

4. Apart from historic documents, no archaeological data is available as to the dietary consumption of an Almshouse in the local Tri-State area. These materials provide a critical source of much

needed information to contrast against historic documents and particularly the dietary needs of a low social class living in eighteenth-century New York.

Table 1: Ordinal and percentage breakdown of City Hall Park faunal material.

CITY HALL PROJECT

UNIT : ALL RECOVERED ARCHAEOFAUNA

Taxon	NISP	% of whole	% of group	
DOMESTICATES				
Bos taurus	48	1.06	25.67	
Equus caballus		0.00	0.00	
Canis familaris		0.00	0.00	
Sus scrofa	38	0.84	21.11	
Ovis aries	3	0.07	1.67	
Capra hircus		0.00	0.00	
Ovis/Capra sp.	91	2.02	50.56	
total Ovis/Capra	94	2.08	52.22	
total Domesticates	180	3.99		
OTHER MAMMALS				
Lagomorph	1	0.02	50.00	
Carnivora	1	0.02	50.00	
		0.00	0.00	
		0.00		2
total Other Mammals	2	0.04		
		0.00	ERR	
		0.00	ERR	
		0.00	ERR	
total	0	0.00		
OTHER MAMMALS				
Rattus sp.	15	0.33		
R. norvegicus	2	0.04		
H.s.sapiens	6	0.13		
total Other Mammals	23	0.51		
BIRDS				
Wildfowl - water birds	8	0.18	16.67 w.bird	
Wildfowl - land birds	5	0.11	10.42 land bird	
Domestic fowl	35	0.78	72.92 Dom. fowl	
Bird sp.	106	2.35		48
Total Birds	154	3.41		
FISH				
Gadidae	5	0.11	31.25	
A.probatocephalus	1	0.02	6.25	
Scorpanidae	10	0.22	62.50	
Fish sp.	249	5.52		16
Total Fish	265	5.87		
MOLLUSCA				
Mollusca sp.	3890	86.18		
Total Mollusca	3890	86.18		
TOTAL NISP =	4514	100.00		

Major Taxa
Relative Percent

	NISP	%
Cattle	48	8.68
Caprines	94	16.99
Horse	0	0.00
Seals	2	0.36
Cetacea	0	0.00
Birds	154	27.85
Fish	265	47.92
sum of major groups	553	

Ratios

Cattle : Caprine	1 to	1.96
Cattle : Horse	1 to	0.00
Cattle : Dogs	1 to	0.00
Goat : Sheep	1 to	ERR
Domestic Mammal : Ident.Fish	1 to	0.09
Domestic Mammal : Seals	1 to	0.01
Domestic Mammal : Birds	1 to	0.28
Domestic Fowl : Wildfowl	1 to	0.37

NISP	4514	
Unidentified Scrap		
% Identified	100.00	
large mammal	177	
medium mammal	1481	
small mammal	7	
total L & M mammal	1658	
ratio M : L mammal	8.42	
L&M mammal : tot.Pisces	6.23	

Table 2: Species diversity, all eighteenth-century deposits.

UNIT : City Hall Project - All 18thc. Deposits

Taxon	NISP	% of whole	% of group	
DOMESTICATES				
Bos taurus	15	1.58	38.46	
Equus caballus		0.00	0.00	
Canis familaris		0.00	0.00	
Sus scrofa	8	0.84	20.51	
Ovis aries		0.00	0.00	
Capra hircus		0.00	0.00	
Ovis/Capra sp.	16	1.68	41.03	
total Ovis/Capra	16	1.68	41.03	
total Domesticates	39	4.11		
SEALS				
Phoca vitulina		0.00	ERR	P. vit.
Pagophilus groenlandicus		0.00	ERR	P.groen.
Large seal		0.00	ERR	L. seal
Phocid sp.		0.00		0
total Phocid	0	0.00		
CETACEA				
Great whale		0.00	ERR	
Small whale/porpoise		0.00	ERR	
Cetacea sp.		0.00	ERR	
total Cetacea	0	0.00		
OTHER MAMMALS				
Rattus sp.	11	1.16		
R. norvegicus		0.00		
H.s.sapiens	3	0.32		
total Other Mammals	14	1.47		
BIRDS				
Wildfowl - water birds	3	0.32	20.00	w.bird
Wildfowl - land birds		0.00	0.00	land bird
Domestic fowl	12	1.26	80.00	Dom. fowl
Bird sp.	29	3.05		15
Total Birds	44	4.63		
FISH				
Gadidae	2	0.21	100.00	
Salmo sp.		0.00	0.00	
Other Fish		0.00	0.00	
Fish sp.	100	10.53		2
Total Fish	102	10.74		
MOLLUSCA				
Mollusca sp.	751	79.05		
Total Mollusca	751	79.05		
TOTAL NISP =	950	100.00		

Major Taxa
Relative Percent

	NISP	%
Cattle	15	8.47
Caprines	16	9.04
Horse	0	0.00
Seals	0	0.00
Cetacea	0	0.00
Birds	44	24.86
Fish	102	57.63
sum of major groups	177	

Ratios

Cattle : Caprine	1 to	1.07
Cattle : Horse	1 to	0.00
Cattle : Dogs	1 to	0.00
Goat : Sheep	1 to	ERR
Domestic Mammal : Ident.Fish	1 to	0.05
Domestic Mammal : Seals	1 to	0.00
Domestic Mammal : Birds	1 to	1.13
Domestic fowl : Wildfowl	1 to	0.25

NISP	950
Unidentified Scrap	
% Identified	100.00
large mammal	85
medium mammal	393
small mammal	1
total L & M mammal	483
ratio M : L mammal	4.58
L&M mammal : tot.Pisces	4.74

Table 3: Species diversity, Almshouse deposits.

UNIT : City Hall Project - Almshouse (1788-1798s) Deposits

Taxon	NISP	% of whole	% of group	
DOMESTICATES				
Bos taurus	15	1.71	39.47	
Equus caballus		0.00	0.00	
Canis familaris		0.00	0.00	
Sus scrofa	7	0.80	18.42	
Ovis aries		0.00	0.00	
Capra hircus		0.00	0.00	
Ovis/Capra sp.	16	1.83	42.11	
total Ovis/Capra	16	1.83	42.11	
total Domesticates	38	4.34		
SEALS				
Phoca vitulina		0.00		ERR P. vit.
Pagophilus groenlandicus		0.00		ERR P.groen.
Large seal		0.00		ERR L. seal
Phocid sp.		0.00		
				0
total Phocid	0	0.00		
CETACEA				
Great whale		0.00		ERR
Small whale/porpoise		0.00		ERR
Cetacea sp.		0.00		ERR
total Cetacea	0	0.00		
OTHER MAMMALS				
Rattus sp.	11	1.26		
R. norvegicus		0.00		
H.s.sapiens	3	0.34		
total Other Mammals	14	1.60		
BIRDS				
Wildfowl - water birds	3	0.34		20.00 w.bird
Wildfowl - land birds		0.00		0.00 land bird
Domestic fowl	12	1.37		80.00 Dom. fowl
Bird sp.	25	2.85		15
Total Birds	40	4.57		
FISH				
Gadidae	2	0.23		100.00
Salmo sp.		0.00		0.00
Other Fish		0.00		0.00
Fish sp.	99	11.30		2
Total Fish	101	11.52		
MOLLUSCA				
Mollusca sp.	683	77.97		
Total Mollusca	683	77.97		
TOTAL NISP =	876	100.00		

Major Taxa Relative Percent

	NISP	%
Cattle	15	8.72
Caprines	16	9.30
Horse	0	0.00
Seals	0	0.00
Cetacea	0	0.00
Birds	40	23.25
Fish	101	58.72
sum of major groups	172	

Ratios

Cattle : Caprine	1 to	1.07
Cattle : Horse	1 to	0.00
Cattle : Dogs	1 to	0.00
Goat : Sheep	1 to	ERR
Domestic Mammal : Ident.Fish	1 to	0.05
Domestic Mammal : Seals	1 to	0.00
Domestic Mammal : Birds	1 to	1.05
Domestic Fowl : Wildfowl	1 to	0.25

NISP	876	
Unidentified Scrap		
% Identified	100.00	
large mammal	85	
medium mammal	359	
small mammal	1	
total L & M mammal	453	
ratio M : L mammal	4.22	
L&M mammal : tot.Pisces	4.48	

Table 4: Species diversity, eighteenth-century other than Almshouse deposits.

City Hall Project
UNIT : 18th c. Other Than the Almshouse

Taxon	NISP	% of whole	% of group
DOMESTICATES			
Bos taurus		0.00	0.00
Equus caballus		0.00	0.00
Canis familaris		0.00	0.00
Sus scrofa	1	1.35	100.00
Ovis aries		0.00	0.00
Capra hircus		0.00	0.00
Ovis/Capra sp.		0.00	0.00
total Ovis/Capra	0	0.00	0.00
total Domesticates	1	1.35	
SEALS			
Phoca vitulina		0.00	ERR P. vit.
Pagophilus groenlandicus		0.00	ERR P.groen.
Large seal		0.00	ERR L. seal
Phocid sp.		0.00	0
total Phocid	0	0.00	
CETACEA			
Great whale		0.00	ERR
Small whale/porpoise		0.00	ERR
Cetacea sp.		0.00	ERR
total Cetacea	0	0.00	
OTHER MAMMALS			
Rattus sp.		0.00	
R. norvegicus		0.00	
H.s.sapiens		0.00	
total Other Mammals	0	0.00	
BIRDS			
Wildfowl - water birds		0.00	ERR w.bird
Wildfowl - land birds		0.00	ERR land bird
Domestic fowl		0.00	ERR Dom. fowl
Bird sp.	4	5.41	0
Total Birds	4	5.41	
FISH			
Gadidae		0.00	ERR
Salmo sp.		0.00	ERR
Other Fish		0.00	ERR
Fish sp.	1	1.35	0
Total Fish	1	1.35	
MOLLUSCA			
Mollusca sp.	58	91.99	
Total Mollusca	58	91.99	
TOTAL NISP =	74	100.00	

Major Taxa
Relative Percent

	NISP	%
Cattle	0	0.00
Caprines	0	0.00
Horse	0	0.00
Seals	0	0.00
Cetacea	0	0.00
Birds	4	80.00
Fish	1	20.00
sum of major groups	5	

Ratios

Cattle : Caprine	1 to	ERR
Cattle : Horse	1 to	ERR
Cattle : Dogs	1 to	ERR
Goat : Sheep	1 to	ERR
Domestic Mammal : Ident.Fish	1 to	0.00
Domestic Mammal : Seals	1 to	0.00
Domestic Mammal : Birds	1 to	4.00
Domestic Fowl : Wildfowl	1 to	ERR

NISP	74
Unidentified Screen	
% Identified	100.00
large mammal	
medium mammal	30
small mammal	
total L & M mammal	30
ratio M : L mammal	ERR
L&M mammal : tot.Pisces	30.00

Table 5: Species diversity, eighteenth and nineteenth-century disturbed deposits.

UNIT : 18th & 19th c. Disturbed Deposits

Taxon	NISP	% of whole	% of group
DOMESTICATES			
Bos taurus	2	2.08	50.00
Equus caballus		0.00	0.00
Canis familaris		0.00	0.00
Sus scrofa	1	1.04	25.00
Ovis aries		0.00	0.00
Capra hircus		0.00	0.00
Ovis/Capra sp.	1	1.04	25.00
total Ovis/Capra	1	1.04	25.00
total Domesticates	4	4.17	
SEALS			
Phoca vitulina		0.00	ERR
Pagophilus groenlandicus		0.00	ERR
Large seal		0.00	ERR
Phocid sp.		0.00	
total Phocid	0	0.00	
CETACEA			
Great whale		0.00	ERR
Small whale/porpoise		0.00	ERR
Cetacea sp.		0.00	ERR
total Cetacea	0	0.00	
OTHER MAMMALS			
Rattus sp.		0.00	
R. norvegicus		0.00	
H.s.sapiens		0.00	
total Other Mammals	0	0.00	
BIRDS			
Wildfowl - water birds		0.00	ERR
Wildfowl - land birds		0.00	ERR
Domestic fowl		0.00	ERR
Bird sp.	3	3.13	
Total Birds	3	3.13	
FISH			
Gadidae		0.00	ERR
Salmo sp.		0.00	ERR
Other Fish		0.00	ERR
Fish sp.	2	2.08	
Total Fish	2	2.08	
MOLLUSCA			
Mollusca sp.	87	90.63	
Total Mollusca	87	90.63	

Major Taxa
Relative Percent

	NISP	%
Cattle	2	25.00
Caprines	1	12.50
Horse	0	0.00
Seals	0	0.00
Cetacea	0	0.00
Birds	3	37.50
Fish	2	25.00
sum of major groups	8	

Ratios

Cattle : Caprine	1 to	0.50
Cattle : Horse	1 to	0.00
Cattle : Dogs	1 to	0.00
Goat : Sheep	1 to	ERR
Domestic Mammal : Ident.Fish	1 to	0.00
Domestic Mammal : Seals	1 to	0.00
Domestic Mammal : Birds	1 to	0.75
Domestic Fowl : Wildfowl	1 to	ERR

NISP	96
Unidentified Scrap	
% Identified	100.00
large mammal	2
medium mammal	34
small mammal	
total L & M mammal	36
ratio M : L mammal	17.00
L&M mammal : tot.Pisces	18.00

Table 6: Species diversity, nineteenth-century disturbed deposits.

UNIT : 19thc. Disturbed Deposits

Taxon	NISP	% of whole	% of group
DOMESTICATES			
Bos taurus	5	0.91	19.23
Equus caballus		0.00	0.00
Canis familaris		0.00	0.00
Sus scrofa	10	1.81	38.46
Ovis aries	1	0.18	3.85
Capra hircus		0.00	0.00
Ovis/Capra sp.	10	1.81	38.46
total Ovis/Capra	11	1.99	42.31
total Domesticates	26	4.71	
SEALS			
Phoca vitulina		0.00	ERR
Pagophilus groenlandicus		0.00	ERR
Large seal		0.00	ERR
Phocid sp.		0.00	
total Phocid	0	0.00	
CETACEA			
Great whale		0.00	ERR
Small whale/porpoise		0.00	ERR
Cetacea sp.		0.00	ERR
total Cetacea	0	0.00	
OTHER MAMMALS			
Rattus sp.		0.00	
R. norvegicus		0.00	
H.s.sapiens		0.00	
total Other Mammals	0	0.00	
BIRDS			
Wildfowl - water birds		0.00	0.00
Wildfowl - land birds		0.00	0.00
Domestic fowl	1	0.18	100.00
Bird sp.	4	0.72	
Total Birds	5	0.91	
FISH			
Gadidae	1	0.18	100.00
Salmo sp.		0.00	0.00
Other Fish		0.00	0.00
Fish sp.	9	1.63	
Total Fish	10	1.81	
MOLLUSCA			
Mollusca sp.	511	92.57	
Total Mollusca	511	92.57	

Major Taxa
Relative Percent

	NISP	%
Cattle	5	16.13
Caprines	11	35.48
Horse	0	0.00
Seals	0	0.00
Cetacea	0	0.00
Birds	5	16.13
Fish	10	32.26
sum of major groups	31	

Ratios

Cattle : Caprine	1 to	2.20
Cattle : Horse	1 to	0.00
Cattle : Dogs	1 to	0.00
Goat : Sheep	1 to	ERR
Domestic Mammal : Ident.Fish	1 to	0.04
Domestic Mammal : Seals	1 to	0.00
Domestic Mammal : Birds	1 to	0.19
Domestic Fowl : Wildfowl	1 to	0.00

NISP	552
Unidentified Scrap	
% Identified	100.00
large mammal	10
medium mammal	138
small mammal	2
total L & M mammal	148
ratio M : L mammal	13.80
L&M mammal : tot.Pisces	14.80

Table 7: Species diversity, nineteenth and twentieth-century disturbed deposits.

UNIT : 19th & 20thc. Disturbed Deposit

Taxon	NISP	% of whole	% of group
DOMESTICATES			
Bos taurus	5	0.55	18.52
Equus caballus		0.00	0.00
Canis familaris		0.00	0.00
Sus scrofa	7	0.77	25.93
Ovis aries	1	0.11	3.70
Capra hircus		0.00	0.00
Ovis/Capra sp.	14	1.54	51.85
total Ovis/Capra	15	1.65	55.56
total Domesticates	27	2.97	
SEALS			
Phoca vitulina		0.00	ERR
Pagophilus groenlandicus		0.00	ERR
Large seal		0.00	ERR
Phocid sp.		0.00	
total Phocid	0	0.00	
CETACEA			
Great whale		0.00	ERR
Small whale/porpoise		0.00	ERR
Cetacea sp.		0.00	ERR
total Cetacea	0	0.00	
OTHER MAMMALS			
Rattus sp.	1	0.11	
R. norvegicus	1	0.11	
H.s.sapiens	1	0.11	
total Other Mammals	3	0.33	
BIRDS			
Wildfowl - water birds	2	0.22	20.00
Wildfowl - land birds	4	0.44	40.00
Domestic fowl	4	0.44	40.00
Bird sp.	15	1.65	
Total Birds	25	2.75	
FISH			
Gadidae		0.00	0.00
A.probatocephalus	1	0.11	100.00
Other Fish		0.00	0.00
Fish sp.	26	2.86	
Total Fish	27	2.97	
MOLLUSCA			
Mollusca sp.	826	90.97	
Total Mollusca	826	90.97	

Major Taxa
Relative Percent

	NISP	%
Cattle	5	6.94
Caprines	15	20.83
Horse	0	0.00
Seals	0	0.00
Cetacea	0	0.00
Birds	25	34.72
Fish	27	37.50
sum of major groups	72	

Ratios

Cattle : Caprine	1 to	3.00
Cattle : Horse	1 to	0.00
Cattle : Dogs	1 to	0.00
Goat : Sheep	1 to	ERR
Domestic Mammal : Ident.Fish	1 to	0.04
Domestic Mammal : Seals	1 to	0.00
Domestic Mammal : Birds	1 to	0.93
Domestic Fowl : Wildfowl	1 to	1.50

NISP	908
Unidentified Scrap	
% Identified	100.00
large mammal	16
medium mammal	283
small mammal	1
total L & M mammal	299
ratio M : L mammal	17.69
L&M mammal : tot.Pisces	11.07

Table 8: Species diversity, twentieth-century disturbed deposits.

UNIT : 20thc. Disturbed Deposits

Taxon	NISP	% of whole	% of group
DOMESTICATES			
Bos taurus	21	1.05	24.71
Equus caballus		0.00	0.00
Canis familaris		0.00	0.00
Sus scrofa	12	0.60	14.12
Ovis aries	1	0.05	1.18
Capra hircus		0.00	0.00
Ovis/Capra sp.	51	2.54	60.00
total Ovis/Capra	52	2.59	61.18
total Domesticates	85	4.23	
Lagomorph	1	0.05	50.00
Carnivora	1	0.05	50.00
Large seal		0.00	0.00
Phocid sp.		0.00	
total Phocid	2	0.10	
CETACEA			
Great whale		0.00	ERR
Small whale/porpoise		0.00	ERR
Cetacea sp.		0.00	ERR
total Cetacea	0	0.00	
OTHER MAMMALS			
Rattus sp.	3	0.15	
R. norvegicus	1	0.05	
H.s.sapiens	2	0.10	
total Other Mammals	6	0.30	
BIRDS			
Wildfowl - water birds	3	0.15	13.64
Wildfowl - land birds	1	0.05	4.55
Domestic fowl	18	0.90	81.82
Bird sp.	55	2.74	
Total Birds	77	3.83	
FISH			
Gadidae	2	0.10	16.67
Scorpanidae	10	0.50	83.33
Other Fish		0.00	0.00
Fish sp.	112	5.57	
Total Fish	124	6.17	
MOLLUSCA			
Mollusca sp.	1715	85.37	
Total Mollusca	1715	85.37	

Major Taxa
Relative Percent

	NISP	%
Cattle	21	7.61
Caprines	52	18.84
Horse	0	0.00
Seals	2	0.72
Cetacea	0	0.00
Birds	77	27.90
Fish	124	44.93
sum of major groups	276	

Ratios

Cattle : Caprine	1 to	2.48
Cattle : Horse	1 to	0.00
Cattle : Dogs	1 to	0.00
Goat : Sheep	1 to	ERR
Domestic Mammal : Ident.Fish	1 to	0.14
Domestic Mammal : Seals	1 to	0.02
Domestic Mammal : Birds	1 to	0.91
Domestic Fowl : Wildfowl	1 to	0.22

NISP	2009
Unidentified Scrap	
% Identified	100.00
large mammal	64
medium mammal	638
small mammal	3
total L & M mammal	702
ratio M : L mammal	9.97
L&M mammal : tot.Pisces	5.66

Table 9: Ordinal counts and percentage breakdowns of the major taxa for eighteenth-century materials.

1700-1800 NYC	Major Taxa Comparisons Cattle	Caprines	Horse	Pigs	Deer	Birds	Fish
Almshouse CHP	15	16	0	7	0	40	101
Voolezer House	18	14	0	28	0	15	5
7 Hanover Sq.	1	1	0	2	0	0	0
Stadt Huys Block	82	68	0	123	2	119	109
Broad Street	59	77	0	19	2	89	40
175 Water Street	476	392	0	193	0	287	0
Butler-McCook, CT.	59	67	0	71	0	11	9
Old Bank Farm, RI	5	7	0	8	0	20	3

	Major Taxa Comparisons Cattle	Caprines	Horse	Pigs	Deer	Birds	Fish
NYC							
Almshouse CHP	8.38	8.94	0.00	3.91	0.00	22.35	56.42
Voolezer House	22.50	17.50	0.00	35.00	0.00	18.75	6.25
7 Hanover Sq.	25.00	25.00	0.00	50.00	0.00	0.00	0.00
Stadt Huys Block	16.30	13.52	0.00	24.45	0.40	23.66	21.67
Broad Street	20.63	26.92	0.00	6.64	0.70	31.12	13.99
175 Water Street	35.31	29.08	0.00	14.32	0.00	21.29	0.00
Butler-McCook, CT.	28.37	32.21	0.00	34.13	0.00	5.29	0.00
Old Bank Farm, RI	11.63	16.28	0.00	18.60	0.00	46.51	6.98

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Table 10: Bird species diversity.

SITE
Ex. Sq., Test Pit
Unit/Level
Profile
Series
Year Excavated

TAXON	NISP	% of whole	% of group
GALLIFORMES	3	20.00	27.27
Tetraonidae		0.00	0.00
Gallus gallus	8	53.33	72.73
Meleagrididae		0.00	0.00
Meleagris gallopavo		0.00	0.00
TOTAL GALLIFORMES	11	73.33	
CHARADIIFORMES		0.00	ERR
Laridae		0.00	ERR
Larus argentatus		0.00	ERR
Larus glaucescens		0.00	ERR
Larus sp.		0.00	ERR
TOTAL CHARADIIFORMES	0	0.00	
COLUMBIFORMES		0.00	0.00
Columbidae		0.00	0.00
Columbia sp.	1	6.67	100.00
TOTAL PASSIFORMES	1	6.67	
ANSERIFOMES	2	13.33	66.67
Anatidae		0.00	0.00
Anas platyrhynchos		0.00	0.00
Anas sp.	1	6.67	33.33
Clangula hyemalis		0.00	0.00
Anser anser		0.00	0.00
Cygninae		0.00	0.00
Branta sp.		0.00	0.00
TOTAL ANSERIFORMES	3	20.00	
TOTAL NISP	15		

MAJOR TAXA

Relative Percent	NISP	%
Pelecaniformes	11	ERR
Laridae	0	ERR
Alcidae	ERR	ERR
Accipitriidae	ERR	ERR
Corvidae	1	ERR
Anatidae	1	ERR
Cygninae	0	ERR
Migratory:Terrestrial Species 1:		ERR

Table 11: Shellfish species diversity.

Quattrobone 3.0 McGovern & Amorosi 1989

MOLLUSCA — Thomas Amorosi
Hunter Bioarchaeology Laboratory 1990
Site — Context
Date

Mollusca NISP	683
Bivalve Total	683
Gastropod Total	0

Taxon	Whole R	Whole L	Whole Frag	Valve R	Valve L	Taxon TOTAL	% collection	% group
BIVALVES								
Venus mercenaria	2	6	322	15	17	362	53.00	53.00
Ostrea virginica	4	6	298			308	45.10	45.10
Edulis mytilus			2			2	0.29	0.29
Other sp.			11			11	1.61	1.61

Figure 1: Comparison of 18th Century Archaeofauna--Major Taxa.

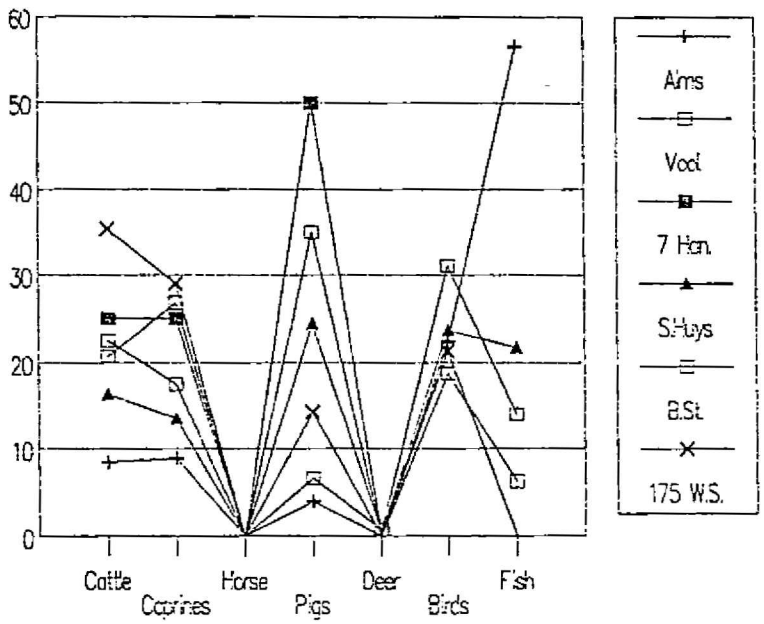

Figure 2: Comparison of 18th Century Archaeofauna--Major Taxa.

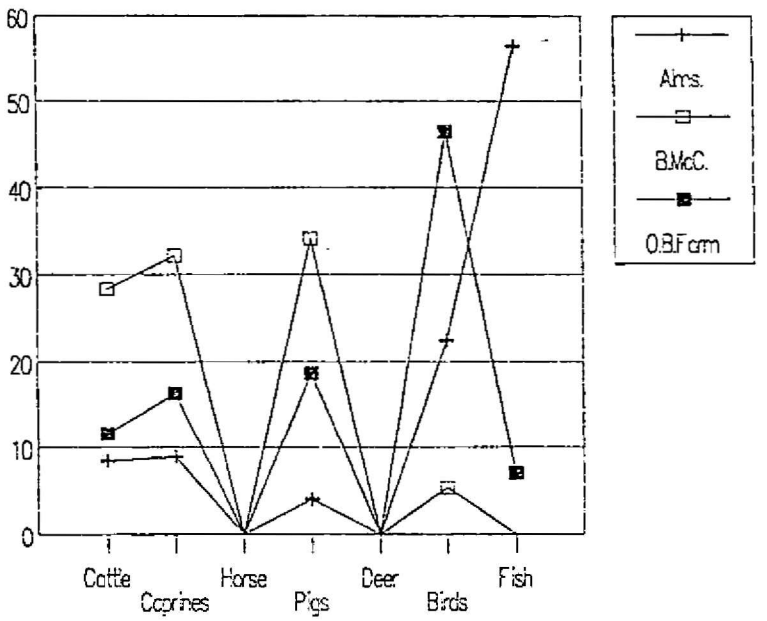

Figure 3: Cattle Skeletal Element Distribution.

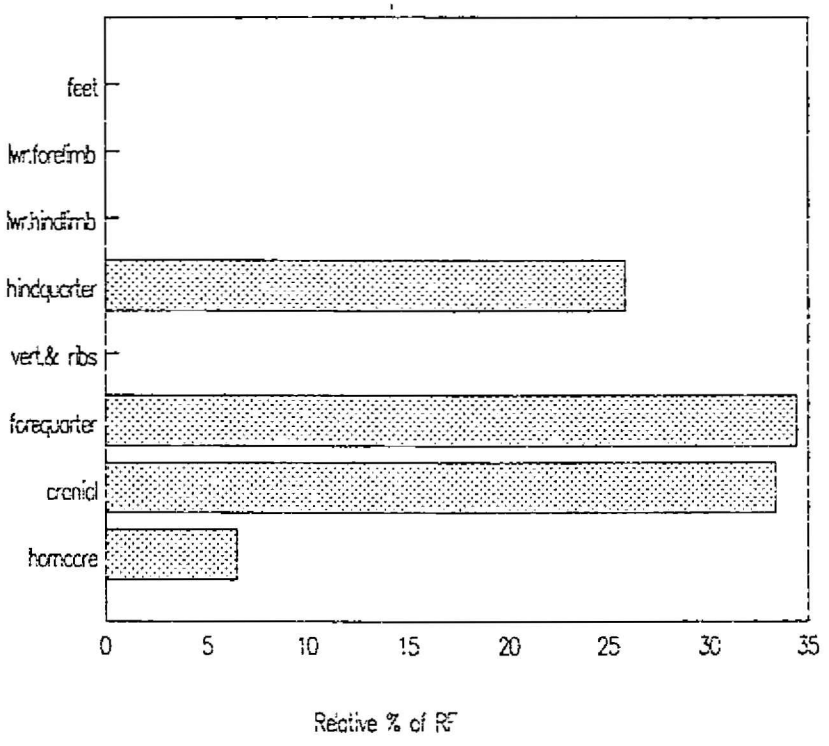

Figure 4: Caprine Skeletal Element Distribution.

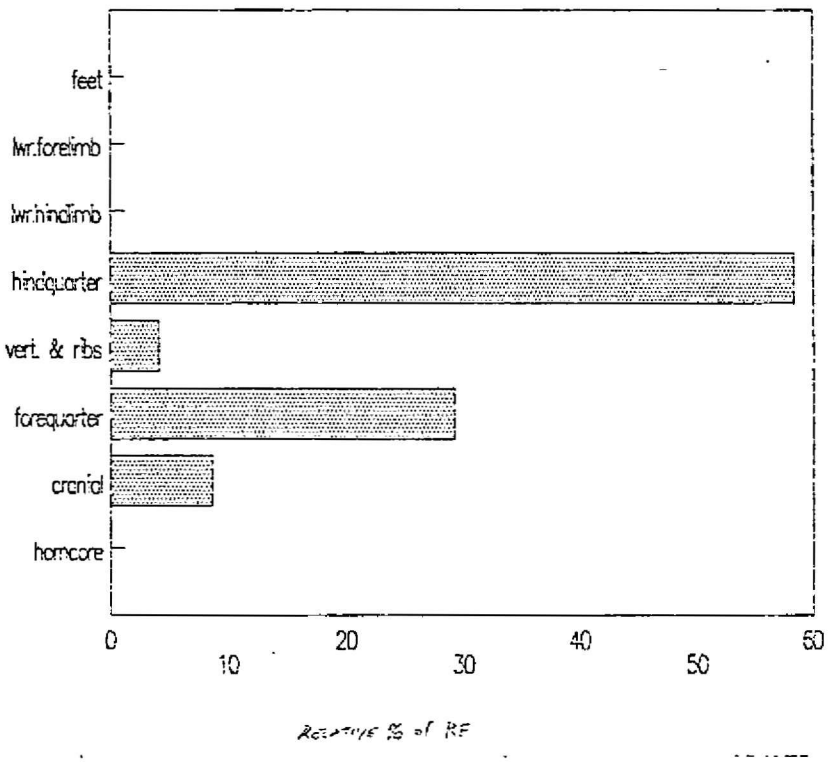

Figure 5: Skeletal Element Relative Frequency.