# THE ARCHAEOLOGICAL EVALUATION OF THE SEVEN HANOVER SQUARE BLOCK: A FINAL REPORT 

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## INTRODUCTION -- PROJECT HISTORY

The Hanover Square project began in March 1981 when Tony Leichter, the representative of Swig, Weiler, and Arnow, developers of the Seven Hanover Square Block, retained Nan Rothschild and Diana Wall (Rockman) to do an evaluation of the archaeological potential of the block prior to construction. The developers had just learned that the New York City Landmarks Preservation Commission was going to require this assessment of the impact of the proposed project on archaeological and historic resources. The schedule for building construction called for beginning in May, so the entire archaeological project was conducted with the goal of balancing as much speed as possible with the need to adequately test and mitigate the total destruction of the site that would accompany building construction. The proceedures used during the Stadt Huys Block excavation were followed, with documentary research the first stage, succeeded by heavy machine clearing and hand testing. All archaeologists became employees of the construction company, Lehrer-McGovern.

Documentary research began on 23 March and lasted until 13 April. Wendy Harris and Susan Dublin used water lot grants and records from the Department of Buildings, deeds, tax records, directories, will abstracts, and atlases to compile a history of land filling, construction, and land use, and to document
possible destruction of archaeological resources on all the lots that made up the project area (see Figure 1). The site was located on the northeastern part of the block defined by Pearl Street, (designated site north, although approximately northwest), Hanover Square (to site east), Water Street (to site south), and Coenties Slip (to site west)

Excavation on the block began on 3 April with heavy machinery removing the blacktop and the underlying debris remaining from the demolition of the most recent buildings on the block. This process took about ten days, and was followed by archaeological testing, following the sampling procedure outlined in the Field Methods section of Chapter 1. Since this was the first large-scale project in New York on a landfill block (smallscale excavations like Paul Huey's at Old slip (1984) and the 64 Pearl Street site excavated by Rothschild and Pickman (1981) had preceded the Hanover Square Block), we thought it essential to excavate a large sample of the fill. We placed one test unit in each of the original water lot grants, but varied their distance from the original shoreline on Pearl Street to see whether landfilling technology had changed as the river bottom deepened.

The intial stage of testing on the block lasted until early June. At the end of that time a number of important archaeological deposits and features had been identified. After consultation with the New York City Landmarks Preservation Commission it was decided that data recovery excavations would be conducted to mitigate the impact of construction. The data
recovery excavation lasted for an additional 15 field days (3 weeks), and used a large crew of 30 people (two to three times the size of the earlier crew). It should be noted that the 7 Hanover Square Block also was more complex and time-consuming to excavate than anticipated, because of the depth of landfill and the number of early walls and important deposits encountered. The most significant deposits present on the site were associated with the structures defined by the early foundation walls uncovered during the testing phase of research. These were the first structures to be built on the block (dating to the close of the seventeenth century) and represent the entire community plan of the Pearl Street side of the block, making this site an extremely important and unique one. One of these structures was identified as Robert Livingston's house, built on land acquired from Captain Kidd, and others had been built by a number of Dutch families who had purchased water lot grants. It became clear as we reached the river bottom and examined the stratigraphy adjacent to the walls that the walls had probably served a dual purpose, holding the landfill in place as well as supporting the structures.

In addition to the deposits both inside these buildings and outside in their back yards, that were excavated during this phase, other deposits and features dating to the 18th and 19 th centuries were identified and excavated. During the first two weeks of mitigation, work was conducted on the northern part of the block; during the last week, work was conducted on
the southern part as construction had begun on the northern section. We continued work in this area until 10 July, our last field day. There were some difficulties that occurred as a result of the attempt to have construction begin while archaeological mitigation was still underway. Pile driving was begun, creating noise and vibrations that made work difficult, and some of the shifting of dirt in order to construct ramps for the heavy machinery prevented access to some areas.

Staffing of the project changed slightly during the mitigation phase. Arnold Pickman joined the project as codirector when mitigation began, and for the last week of work, he was the sole Director, as Diana Wall had begun work as Director of the Telco Block excavation. Nan Rothschild was Principal Investigator throughout the project. We had a number of important consultants during excavation. Sherene Baugher, who had recently joined the Landmarks Preservation Commission staff, visited the site frequently; Dr. Steven Selwyn, a geologist from Columbia University's Lamont-Doherty Geological Observatory, came to evaluate the river-bottom surface (Appendix C). Mary Dierickx did the architectural analysis of the early walls (Appendix A), while Ray Pepi of CBC analyzed the mortar (Appendix B).

Laboratory work under the direction of Kate Morgan and Nancy Stehling was begun during the testing stage of work, but the lab crew worked in the field during the mitigation phase. The lab was housed at 87 Pearl Street, and continued with a full staff until December 1981, with some lab work and analysis
lasting until May 1982. The same routines as were used in the Stadt Huys Block lab were followed. Meta Janowitz was the ceramic analyst, and Diane Dallal the pipe analyst.

Conservation of the collections from both the Stadt Huys and Hanover Square blocks was begun in the spring of 1981 and continued for several months during the summer and fall of 1981. James Roberts from the Conservation Program in the New York University School of Fine Arts was in charge of the conservation program, most of which was conducted at New York University, Barnard and Columbia, under the direction of Diane Dallal. Deborah Schorsch, also from NYU, was responsible for the treatment of metals (see Appendix I).

Artifact analysis was done using a program, "SHAARC," written by Arnold Pickman, described in Chapter One. The section on artifact procedures in that chapter was written by Nancy Stehling, Kate Morgan, and Meta Janowitz, while the documentary research section was written by Wendy Harris and Susan Dublin. The Introduction and Afterword were written by Nan Rothschild, and edited by Arnold Pickman (Diana Wall also edited the Introduction). The rest of the report was written by Arnold Pickman, and edited by Nan Rothschild. The appendices have a number of different authors, identified in those sections. The ceramic and glass coding appendices, and the paleobotanical appendix are the same for this report as for the Stadt Huys Block report, and a number of other appendices are quite similar, since they represent similar laboratory procedures.

Most of the artifacts and complete records for the site are stored in the William Duncan Strong Museum in Columbia University's Department of Anthropology. The architectural materials and another set of provenience forms, profiles, and artifact tabulation sheets are at the South Street Seaport Museum.

The report is organized so that each Lot is described as a unit, with documentary research presented first, and the description and interpretation of stratigraphy and artifact findings presented by test cut or in larger units if appropriate. The appendices are used for the presentation of other types of analysis, and to describe how artifacts were classified. There is also a Concordance appendix ( $N$ ) that presents the stratum descriptions, and catalog numbers associated, so that those who want to use the data in the computer sheets will be able to tie them to the description in the report.

As is true of any large scale project, the work of many people was essential to this final product. We wish to acknowledge the important contributions made by a number of different people. The project was mandated by the New York City Landmarks Preservation Commission, as the second major New York City excavation. Kent Barwick, Dorothy Miner, and Lenore Norman played significant roles in making certain that the excavation of this important block occurred, and Sherene Baugher was equally helpful once it had begun. The project was funded by the developer, Swig, Weiler, and Arnow and we are grateful for their
cooperation in the face of a difficult situation. Some funding for report preparation was provided by Barnard College. Bert Salwen was a vital advisor on field (and other) strategy, and the New York University Department of Anthropology, the Center for Building Conservation, and the South Street Seaport provided storage space for artifacts and records.

Our crew was outstanding, working under difficult circumstances generated by intense time pressure. Anne Donadeo was an excellent, efficient crew chief, and the field and lab crew included: Tom Amorosi, David Barnet, Debbie Bodie, Eugene Boesch, Laurie Boros, Bob Burgio, Al Camisa, Curt Chapin, Jay Cohen, Anne-Marie Cuskley, Diane Dallal, Valerie DeCarlo, Tansi Decker, Joe Diamond, Susan Dublin, Susan Eiger, Leslie Eisenberg, Diana Farrow, Rick Garcia, Edwina Glueck, Steve Gross, Valerie Hayes, Hildy Hendrickson, Roselle Henn, Gary Hess, Marjorie Horne, Meta Janowitz, Laurie Kalb, Betsy Kearns, Sarah Keyishan, Jed Levin, Sharon Lovich, Leah Mainwaring, Sydne Marshall (who mapped the site), George Myer, Kate Morgan, Wing Ng , Barbara Orlando, Sissie Pipes, Ming Prospero, John Roberts, Julie Rosen, Abbie Roses, Bob Swartz, Leonid Shmookler, Toni Silver, Nancy Stehling, Ernie Weigand, Brock Witham (who served as site photographer), and Joe Zahan.

Once excavation was complete, analysis of certain classes of materials were undertaken by a number of individuals with specific expertise. Meta Janowitz analyzed the ceramics; Diane Dallal, the pipes; Nancy Stehling, the small finds; and

Josselyn Moore, the paleobotanical samples. Darlene Balkwill and Steven Cumbaa of the Zooarchaeological Identification Centre of the National Museum of Natural Science in Ottawa identified and analyzed faunal material, except for much of the domestic mammal material identified by Haskel Greenfield, Meta Janowitz, and Kate Morgan. Funding for the faunal analysis was provided by the National Science Foundation (BNS 83-04132). We are also grateful to Diana Wall for her continuing interest and input; to Susan Dublin who drew all profiles, plan views, and the map used in the report; and to Mary Misserian of Barnard College who typed a difficult manuscript. We are glad to finally submit the Hanover Square Report. Funding restrictions made it difficult to get it completed immediately, and we are indebted to all the above for their help, persistence, and patience.

Nan A. Rothschild<br>Arnold Pickman<br>December 1990, New York City

## CHAPTER ONE

## DOCUMENTARY RESEARCH

The first stage of research in historical archaeology involves a thorough investigation of documents, maps, and records that pertain to the site in question. In this project there was the information on the construction, ownership, and occupants of the structure built on each lot that is typical of any historical archaeological excavation. However, there was also a type of information unique to land fill sites, namely the records pertaining to the making of land. This research identified the first link in the chain of title for all the lots in Block 30 originating in the late 17 th century. The 1686 Dongan Charter was the mandate for all such grants and it gave the city rights to:

All the waste, vacant, unpatented and unappropriated lands lying and being within the City of New York and on Manhattan Island aforesaid extending and reaching to the low water mark (Childs 1861:5).

The owners of the waterfront property were given the first option to purchase and fill the water lots adjoining their parcels. If they did not exercise this option, the lots were sold to the highest bidder (Topographic Division Files).

Eleven water lots were granted between 1686 and 1694 in what is now Block 30. The lots lay between what is now Cornthes slip on the west and old slip on the east. Their breadth ranged from $58^{\prime}$ to $24^{\prime}$ and each extended $9.5^{\prime}$ south beyond the shoreline (Pearl Street).

A second set of 12 water lots were granted in 1697. The
owners of the first set of lots extended their parcels (some of which had been subdivided) an additional $32^{\prime \prime}$ to $47^{\prime}$ so that the existing landfill ended at the low water mark (Water Street). These grants also contained clauses directing the lot owners to construct a $30^{\prime}$ wharf at the end of (and not included in) the footage granted to them. This wharf became the present day water street.

In 1734 a third set of water lots were granted on the far (or south side) of Water Street. These water lots were granted and filled under the provisions of the 1730 Montgomerie Charter, which extended the potential landfill area by granting the city the right to make land 400 ' beyond the low water mark (Water Street). Many of the property owners in Block 30 increased their holdings in 1734. By acquiring the water lots to the south of the original 17 th century water lots (Grants of Land Under Water), Liber A and B). The remaining documentary information about water lot grants, as well as that derived from other sources, will be summarized on a lot by lot basis, and included with the chapter describing the excavations in the lot.

## FIELD METHODS

Prior to excavation, the 7 Hanover Square site was occupied by a paved parking lot. We expected that the rubble from the demolition of the buildings which previously stood on the site, the bases of the walls of these building and their basement floors could be encountered beneath the
asphalt, with landfill and other earlier deposits beneath the basement floors.

Removal of the asphalt surface and approximately four feet of the underlying demolition debris was accomplished using a 24 ton front end loader (Caterpillar 977L). However, the area where documentary research had indicated that a backyard area may have existed between the buildings fronting on Pearl and Water Street was excavated only to a depth of two feet since it was expected that these areas would have remained at a higher elevation than the basement floors. This procedure was followed except in Lots 14 and 15 where the buildings facing Pearl and Water Streets apparently shared a common rear wall, with no raised backyard area present. Subsequently, we used a smaller front end loader/backhoe (Case 450B) to remove the remainder of the debris in the nonbackyard area down to the level of the basement floors. We then laid out a baseline for mapping purposes along the southern edge of the Pearl Street sidewalk.

Once the basement floors and lot walls were defined, the backhoe/front end loader was used to remove these floors. At this point we were able to begin the first phase of the archaeological testing. The objective of the first phase was to sample the 17 th century landfill deposits which we knew to be present (as a result of the analysis of the documentary research and previous soil borings) and to determine what other archaeological deposits and/or architectural features
were present on the site.

## Testing Strategy

Our strategy for the exploratory phase of the project was to sample the landfill using a stratified random sampling procedure and to place three additional tests in the approximately five foot wide raised backyard area at the rear of lots 10-13, between the buildings which had faced Pearl and Water Streets (Map A). As the rubble was removed, it soon became apparent that in Lots 10 and 11 this backyard area had been almost totally disturbed by the construction of the 20 th century buildings which formerly fronted on Water street. The backyard area was only partially disturbed in Lot 12 , however, and a portion of the cistern (Test Cut G) was uncovered and excavated in this lot.

We decided to place one test square in each of the five original water lots fronting Pearl street in order to test the landfill deposits. The present Lots 13 and 14 constituted only one of the original water lots, as did the present Lots 10 and 11, and 28 and 29. Our procedure enabled us to sample the variability in the landfill deposits used by the various water lot grantees. Lots 10-15 were gridded into five 10 foot wide strips oriented east-west. We also decided to stratify our sample according to distance from the original shoreline, to look for fill retaining structures and differences in filling procedures that were related to increasing river depth. It should be noted that although the original water
lot grants extended some 95 feet south of the shoreline, located at the approximate present alignment of Pearl Street, only the northernmost 50 feet of Lots $10-15$ were included in the sampling frame since the land south of this was severely disturbed by 20 th century construction and included the partially disturbed backyard areas which were tested separately. In addition, testing could not be carried out for a distance of some three to five feet south of the Pearl Street baseline because the sloping deposits of rubble which underlay the sidewalk could not be safely removed.

We first used a random number table to assign each of the five strips to one of the five water lots which fronted on the Pearl Street shoreline. Then the strip selected in each lot was gridded into five foot squares, excluding the one and a half feet closest to the walls of the most recent buildings to stand on the site, which had been exposed by the backhoe. We excluded this area so that tests would avoid any wall trenches which may have been associated with the most recent buildings. One five foot square in the strip selected in each lot was chosen for excavation using a random number table. Upon testing, we found one square, that selected in Lot 12 , to have been heavily disturbed (see discussion of TC E) and deep excavation was not possible at this location. Therefore, the selected squares in Lots 12 and 9 were exchanged to permit sampling of the landfill deposits in both lots.

The southernmost 20 feet of the area covered by the first
(1686-1694) set of water lot grants, as well as the area filled as a result of the second set of grants (1697) was available for testing only in Lots 9, 28 and 29 because of the 20th century disturbance. We had originally anticipated being able to test Lots 24 and 25. However, when the backhoe attempted to clear these lots, we discovered that disturbance by 20 th century construction was much deeper than originally thought.

The area in the southern portion of Lot 9 (i.e., Lots 26* and 27*) in which tests could be placed during the exploratory phase of the excavations was severely restricted by the need to provide space for trucks to enter the site and for the backhoe to maneuver while it continued to clear debris from the lots. Therefore this area was not included in the sampling frame for the southern portion of the site. This portion of the site could only be tested in Lots 28 and 29, which constituted one water lot. This area included the southernmost portion of the extent of the first set of water lot grants and the area covered by the second set. We decided to place one test to sample each of these two landfilling episodes. The sampling procedure in Lots 28 and 29 was similar to that used in the northern portion of the site. of the two ten foot-wide strips remaining in the area of the first set of water lot grants, one was chosen at random with a five by five foot square in this strip chosen for excavations. Similarly, the area of the second set of grants
was divided into three strips, one strip chosen, and one five foot square randomly chosen within that strip. It should be noted that the dividing line between the first and second set of grants was determined by measuring south 95 feet from the Pearl Street baseline. Needless to say, our baseline may not have coincided with the actual shoreline.

Although the southern portion of Lot 9 was excluded from the random sample, we decided to place a test (TC N) in this lot (Lot 27*) in a location where it would not impede the movement of heavy equipment. This test was located so that its north wall was 94 feet south of the Pearl street baseline. We hoped to encounter any cribbing or bulkheading which may have been constructed at the southern limit of the first filling episode, as well as to sample the landfill deposits at this location.

As a result of the initial testing outlined above, we determined that extensive architectural features and archaeological deposits were present. In particular, we uncovered portions of the foundation walls of a group of late 17th century structures fronting on Pearl street. Using both manual shovelling and the backhoe, we were able to uncover the tops of major portion of these walls. This enabled us to relate the archaeological deposits and features to these structures. Additional shovel tests and backhoe trenches enabled us to explore the area south of these structures to determine whether any features were present. One result of
this probing was the determination that Lot 19 had not been disturbed to the depth which was originally supposed. Thus, time and resources originally allocated to explore the more severely disturbed Lots 24 and 25 were used to test landfill and uncover the foundation walls in the northern part of Lot 19.

## Testing Methods

The random tests placed to sample the landfill were five by five foot squares. The test cuts were excavated using rigorous stratigraphic controls. Nearly all of the soil from the test cuts excavated during the exploratory phase of the project was screened (although some strata were sampled) through one fourth inch mesh. All of these test cuts were excavated until sterile soil was reached (except for those placed in locations which proved to be disturbed). In some cases a posthole augur was used at the bottom of the test cut to penetrate to the water table. In all test cuts, excavation was by "natural": strata. That is, soil types which differed in color and/or texture were excavated, screened and artifacts bagged separately. Where strata were more than four inches thick, they were subdivided into four inch levels and each level was treated separately.

Upon the completion of the excavation of each test cut, profiles were drawn of the test cut wall. All four profiles were drawn where possible. In some cases, because of either a lack of time or the similarity of the profiles of each wall,
only some of the profiles were drawn. However, color photographs were taken of all profiles.

Where appropriate deposits were present, flotation samples were taken. Smaller soil samples were also taken to permit chemical analysis to be done and/or to provide for future identification of soil types. Similar excavation techniques were used in the final phases of the project discussed below, except that the size of the test cuts varied and more deposits were screened at less than $100 \%$ than during the exploratory phase.

During the exploratory phase of the project we also used two other methods to determine the nature of the deposits present. First, a number of shovel tests were excavated. In general, these were small tests excavated with shovel and post hole auger with much looser stratigraphic controls than the test cuts. In addition, several trenches were excavated using the backhoe to determine the fill and river bottom stratigraphy and to obtain a larger sample of artifacts from the landfill.

## Mitigation

As a result of the exploratory phase of the excavations, more intensive excavations were planned in several areas. We decided to concentrate on deposits which appeared to date to the 17th and early-mid 18th century, since these were judged to be unique resources. However, several later deposits were excavated. The major deposits excavated during the mitigation
included:

1) Shovel tests and one test cut placed in Lot 14 during the exploratory phase uncovered a deposit of dark organiclooking soil containing charcoal and marine shell. We believed this to be a midden which had accumulated in the basement of a structure which existed within the boundaries of the 17th century foundation walls, although at least portions of the accumulation appeared to have been deposited during the 18th century. At a lower level we encountered a stratum which we thought may have been an earlier floor. During the mitigation phase, we placed additional excavations in the lot in a "checker board" pattern which enabled us to obtain a continuous north-south profile. approximately $35 \%$ of the area covered by the midden deposit was excavated.
2) The exploratory excavations uncovered what appeared to be the remains of a cobble basement floor and the foundation walls of the "Livingston" house in Lots 10-11. Our plan called for extensive excavation of the deposits associated with this floor. After placing three additional squares, however, we determined that there did not appear to be any such undisturbed deposits associated with the early occupation of the lot. Thus the time and crew originally allocated to additional squares in this lot were used in other parts of the site.
3) In Lot 13, we had encountered a mortar floor with artifacts situated on it which dated to the period of the
initial construction on the lot. We placed squares so that approximately $30 \%$ of the estimated extent of this floor were plotted.
4) We excavated a wooden feature previously uncovered in Lot 13 and a major portion of a similar feature uncovered in Lot 15. A larger portion of a wooden bulkhead previously noted in Lot 14 was also exposed.
5) A square was placed to expose and sample what was thought to be a midden deposit in Lot 11 at the rear of the "Livingston" house.
6) Other excavations were placed to expose portions of possible floors and wooden backyard features which had been noted in the walls of backhoe trenches and shovel tests in Lots 10, 12 and 15.
7) We further exposed and defined the early stone walls on the northern part of the site and photographed and mapped the patterning of these walls.
8) Because of the need to accommodate the excavations to the schedule for construction of the new building on the 7 Hanover Square site, excavations on the northern part of the site terminated on July 1, 1981. However, we were able to continue excavations in the southern part of Lot 9 (Lots 26* and $27 *$ ) until July 10. This enabled us to further investigate several features encountered during the exploratory phase of the project which were thought to date to the late 18 th through 19 th century. In particular, we were
able to completely excavate a deposit of broken ceramics associated with a late 18th-early 19th century glass and china shop. This deposit had been sampled during the exploratory phase. Excavations during this last part of the project also encountered additional early walls and at least one early ? âte feature, which was excavated.

## ARTIFACT PROCESSING

Excavated materials arrived at the Hanover Square lab in brown paper bags, which were labelled with all provenience information. The contents of each bag were then sorted into washable (bone, ceramic, glass, building materials) and unwashable (metal, wood, leather) artifact categories. Washing was done by the technicians using plain tap water and was done in plastic dishpans using soft bristle toothbrushes. The washing was done catalogue number by catalogue number; one catalogue number was completely washed prior to the start of another. Drying was done in open air with the artifacts in flat trays. When completely dry, the artifacts were then sorted into gross categories. These were "diagnostic," "nondiagnostic," and floral/faunal. Diagnostic artifacts included ceramics, bottle glass, clay pipes, coins, personal items such as jewelry, and other small finds. Non-diagnostic artifacts were building materials and construction/destruction related hardware. After the sorting was done, the diagnostic artifacts were numbered. The numbering system consisted of
the State site number designation (624), the catalogue number assigned in the field, and accession numbers of the individual artifacts (1-n for each catalogue number). The next phase of the lab procedures was the tabulation/identification phase. All artifacts recovered from the Hanover Square excavation were tabulated using an established format based on Stanley 77 South's classification system (South 19\#). The tabulation was recorded on paper by hand to generate a permanent record. Tabulation sheets were generated for each individual catalogue number for all three gross artifact categories. The data from these sheets were to be computer coded at a later date to facilitate analysis. All artifacts were counted and several classes were weighed as well. Weights in grams were computed using o House triple beam balance scales. measurements were taken in both English and Metric units wherever appropriate (i.e. brick, nails). Upon completion of the tabulation phase, the artifacts were then boxed. Diagnostic artifacts and faunal/floral material were boxed by catalogue number; nondiagnostic artifacts were boxed by test cut.

## COMPUTERIZED ANALYTICAL SYSTEM

Because of the large quantity of artifacts, floral and vegetal material recovered from the 7 Hanover Square excavations it soon became apparent that the tabulations and calculations required to permit a thorough analysis of the archaeological deposits would be inordinately time-consuming
if done manually. Therefore, a computer based analytical system was designed and programmed by one of the co-directors of the excavations (A. Pickman). The system, which we named SHAARC \{System for Historical Artifact Analysis and Retrieval by Computer) enables the analyst to obtain summary tabulations and calculations of any excavated context (catalog number) or combination of contexts. This is an important capability because it was not always possible to determine in the field which excavated contexts constituted a single depositional event. In some cases, being able to obtain totals for various combinations of contexts is an important part in the identification of the nature of deposits. The system also enabled us to obtain totals for individual test cuts and to obtain summary data for the entire site. The system can also list the contexts (catalog numbers) in which any given type of artifact, ceramic or smoking pipe fragment is present and the number of occurrences in that context.

## Input and Coding System

To provide data for the SHAARC system, information tabulated during laboratory processing was coded and punched on cards. The coding system used is not hierarchical. That is, a unique three digit code was assigned to each type of artifact and ceramic type as defined by the project staff. The computer system entry consists of the identifying context (catalog) number, test cut number, stratum and level designations, followed by pairs of numbers, each of which
consists of one of the three digit code numbers followed by the number of occurrences of that type in the particular context. A separate input is required for ceramic data, pipe fragment data and artifact/faunal/vegetal data from each excavated context. These data are maintained in three separate files within the computer system. In addition to the data files, the system also maintains a list of code numbers and associated dates and analytical groupings discussed below. Therefore changes, for example in ceramic manufacturing dates, can readily be made as research provides additional information, without altering the program itself.

## Program Modules

The SHAARC system contains three program modules, for ceramics, smoking pipe fragments, and general artifact/faunal analysis. One of these modules can be accessed each time the program is run.

## Artifacts

The artifact program module provides summary tabulations of the types of artifacts, faunal and vegetal remains present. The system places each type of artifact within several "functional" categories, which have been modified from those given by South (1977). This classification is an attempt to reflect how and where various artifacts are most likely to be used, which in turn affects the manner in which the artifact is deposited in archaeological context. The categories used in the system are:

1) Household artifacts--artifacts which are normally found in the household are grouped together. These would most likely be disposed of when broken or worn out and found in archaeological context as secondary refuse.
2) Personal items--these would usually be carried in pocket or purse and would be more likely to be found as primary refuse than household artifacts. These artifacts could be discarded or lost by the user at a particular location rather than being part of a trash deposit. However, these personal items could also be found in the home and disposed of as secondary refuse as noted above.
3) Clothing and personal ornaments--these artifacts could also be disposed of as either primary or secondary deposits. Ornaments, in particular, are susceptible to loss as well as being disposed of when broken.
4) Auxiliary--these are artifacts which would normally be associated with activities performed in outbuildings (e.g. stables, sheds).
5) Weapon-related--these could be found at the site of manufacture or storage and also at the point of use.
6) Manufactures--these items could be used in the home for normal repair tasks, but if found in substantial quantities could indicate the presence of cottage industries. Their presence in large quantities in the absence of substantial quantities of household artifacts could indicate a locus of full scale commercial activity.
7) Architectural--this group includes all artifacts normally used in construction activities. Large quantities can indicate deposition due to structural demolition.

The system tabulates the number of artifacts in each group for each requested group of contexts. If data on the thickness and areal extent of each excavated context, and the fraction of the context which was screened is entered into the system, the density (number or weight per cubic foot of excavated soil) is also calculated for the artifacts within the various groupings as well as for the total number of bone fragments, the weight of marine shell, and the weight of brick and mortar present. This is useful in comparing various deposits. The system also groups artifacts into total architectural and non-architectural categories and calculates the ratio of non-architectural to architectural artifacts. This is referred to in the text as the "NA/A" ratio. This ratio can be suggestive of possible depositional events. For example, a domestic midden would generally be expected to have a relatively high NA/A ratio.

The artifacts module also calculates ratios of red/yellow brick and the average weight of the whole marine shell valves excavated from each group of contexts. Where possible, glass fragments, e.g. bottle necks and bases, were assigned dates. The system provides lists of these datable fragments for each context.

## Ceramics

The ceramics module is primarily aimed at providing information useful in dating deposits. The ceramic type classification and the initial and final manufacturing dates are based on South's (1977) classification as modified by research conducted by Meta Janowitz, the project ceramicist. The program module output lists the quantity of each type of ceramic present in each context and provides totals for each group of context numbers requested by the analyst. The mean ceramic date (weighted average of initial and final dates of manufacture of each ceramic type) is calculated for each group of context numbers according to the method developed by South (1977), and the total number of sherds present and the number of sherds on which the mean ceramic date is calculated or listed. The system also calculates and plots cumulative frequency curves according to the method published by Salwen and Bridges (1977).

In addition to the above, the system classifies each ceramic type into one of eleven analytical categories. These more closely reflect a temporal progression than categories based solely on ware type. This is an experimental classification system which may facilitate the comparison of deposits.

The categories are:

1) 17th-century earthenwares. These are essentially medieval ceramics whose manufacture continued into the 17 th
century. They include salmon and buff/white bodied wares and those red earthenware sherds which can be assigned to the 17 th century based on rim shape and other morphological criteria. Bellarmine stoneware sherds have also been placed in this category.
2) Delftwares.
3) Northern European Stonewares. This category includes the late 17th-early l8th-century Rhenish/Westerwald types.
4) Early 18th century earthenwares. Manufacturing dates for these ceramic types extend from the late 17 th through the late l8th century but they had their greatest popularity in the early part of this period. Slip wares are included in this group.
5) Early-mid 18th-century stonewares and refined earthenwares. Some manufacturing dates for this group continue into the late 18th century. The group includes white salt glazed stonewares,and other glazed and non-salt glazed stonewares as well as several types of red and yellow bodied earthenwares.
6) Creamwares.
7) Pearlwares.
8) Whitewares and other predominantly 19th-century ceramic types.
9) Oriental Export Porcelains.
10) Non-diagnostic. This group includes sherds which can be identified as to type but for which manufacturing dates are
not known, uncertain, or are so broad as to make their inclusion in mean ceramic date calculations meaningless.
11) Miscellaneous. This category includes sherds which are too small or burned to include in any of the other categories.

## Smoking Pipe Fragments

Coding for the pipe module uses the same structure as the other modules. However, this module differs in that it includes coding of some attributes. Thus, a given fragment can generate a number of three digit codes to describe the type of fragment, makers' marks, other decorative elements, etc. The classification system for these attributes was developed during research on the dating of makers' marks and other elements conducted by the project's pipe specialist, Diane Dallal.

The system provides summary tabulations, for each requested context, on the quantity of various types of fragments (bowls, stems, etc.) stem reworking, and decorative elements present. It also lists the maker's marks present and the associated dates. For each group of context numbers requested, the system provides totals for the number and percentage of fragments with various bore diameters, and calculates the Binford (1962) pipe stem date.

## Location

The present version of the SHAARC system has been programmed using the Fortran IV language and compiled using
the IBM Fortran $H Q$ compiler on the Columbia University IBM 4341 computer. The SHAARC system has been designated so that certain of the data outputs described above, in addition to being displayed as printed output or at a terminal, are temporarily stored within the computer system files. This data output can thus be further processed by several program "packages" installed on the Columbia system. Several graphical and statistical outputs have been obtained using the SAS (Statistical Analysis System) package.

## CHAPTER TWO

## LOTS 9*, 26* AND 27*

## Documentary Research

Lot 9 in the present day contains four separate 18 th and 19th century lots: Lot 9* (27' X 67'), Lot 27 * ( $27{ }^{\prime} \mathrm{X}$ 69'), Lot 10* (25' X 70') and Lot 26* (24' X 69'). Asterisks denote these earlier designations.

In the 17 th century Lots $9 *$ and $27 *$ formed a single parcel. Lots 10* and 26* were then part of another larger parcel which also contained lots 11 and 25. By the 1730s the four lots apparently belonged to one individual and it is unknown whether they served as four separate building lots. In 1751 there were definitely two separate structures on Lots 9* and 27* (belonging to one family) and probably two more structures on Lots 10* and 26*. The four lots were joined and separated continuously throughout the 18 th and 19 th centuries. The resultant occupancy and title histories are very complex. The Lot 9 parcel and its four constituent lots (9*, 10*, 27*, 26*) are thus described here separately and sequentially through time.

LOTS 9* and 27* (1687-1734)
Lots 9* and 27* were included in the 1697 water lot granted to the merchant Andrew Teller. This lot measured 24' X 95' (Liber A, p37). Teller received an additional Water Lot Grant in 1697 measuring $24^{\prime} \mathrm{X} 38^{\prime} / 40^{\prime}$ (Liber A, p. 37).

Tax assessment records place an Oliver Teller here in 1721 and Andrew Teller in 1723 and 1724. These same records describe the parcel as containing a "house and back houses." The structure was occupied by Widow Vlack in 1730 , followed by Mrs. Fitch in 1733-4 (tax assessment records).

LOT 10* AND 26* (1687-1734)
Lots 10* and 26* (along with neighboring Lots 11 and 25) originated in a $46^{\prime} \mathrm{X} 95^{\prime}$ water lot granted to the merchant William Cox in 1687 (Liber A, p40). Cox was dead by 1689, the victim of a drowning accident, and left the property to his widow, Sarah, who subsequently married a wealthy merchant, John Oort. Oort died shortly thereafter. Sarah then married the "pirate" Captain William Kidd.

In 1693, Sarah and william Kidd sold the parcel containing Lots 10* and 11 and also the northern section of Lots 26* and 25 to Robert Livingston (L21, p155). Livingston obtained a Water Lot Grant in 1697 to extend the original parcel an additional 46'2" X 40'/43' (Liber A, p221). Livingston, the owner of Lots $10 *, 26 *, 11$, and 25 was born in 1654 in Scotland, the son of a Presbyterian minister. The Livingstons fled to Rotterdam during the Restoration and here he acquired both the Dutch language and considerable business experience while still quite a young man. Livingston emigrated to the colonies where his skills were ideally suited for the upstate New York fur trade. He became a successful Albany merchant and eventually married Alida Schuyler, widow
of Nicholas Van Rensselaer. This alliance cemented his connections with two of New York's leading families and also led to his securing the proprietorship of Livingston Manor in 1686. During the late 17th and early 18 th centuries, Livingston was active in the management of his vast land holdings, the upstate fur trade, politics and a number of business ventures including his partnership with William Kidd (Bonomi 1971:71-75; Stokes I:247). Available evidence suggests that Kidd, who was finally executed in 1701 (see Stokes Chronology: 5/23/1701), obtained the financing necessary for his privaterring activities from respected members of New York's mercantile community. Livingston is said to have invested $£ 6000$ in Kidd's Madagascar expedition (Archdeacon 1976:68; Bonomi 1971:71-75).

Stokes commentary on the 1717 Burgis View describes Livingston's property as "a wide lot fronting Pearl Street, on which appears the palatial residence with the high roof and two stacks of chimneys." Stokes notes that Livingston was living in Albany at this time (Stokes I:246). Both Stokes commentary and the Burgis view are of questionable accuracy but the placement of this large residence on Livingston's wide lot (46') agrees with the existing deeds and tax assessment records.

It is assumed then that modern Lot 9 held $1 \frac{1}{2}$ residential structures during the late 17th and early 18th centuries. Teller's buildings occupied Lots 9* and 27*. Livingston's
home (which may rate to either Cox's or Kidd's ownership) occupied Lots 10* and 26* and the rest of the structure was on Lots 11 and 25. Tax records dating as early as 1706 place Livingston's sheds and back houses on Lots $26 *$ and 25 , fronting on Water street.

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LOTS 9*, 10, 26* AND 27* (1734-1751)
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By 1734, the parcel containing 27*, 26* and probably Lots 9* and 10* (subsequent deeds refer to Lots $9 * / 27 *$ and $10 * / 26 *$ as units) belonged to the merchant Stephen Bayard. Bayard, a member of one of New York's most powerful families and holder of a Common Council seat, obtained a 1734 Water Lot Grant to fill the area on the south side of Water Street (Bonomi 1971:160; Archdeacon 1976:110-111; Liber B, p154). Bayard also owned neighboring Lots 8, 28 and 29 and the total breadth of his 1734 water lot measured $85^{\prime}$ (Liber B, pl25) which almost equals the modern breadth of his lots on Block 30. The tax assessment records for Lots 28 and 29 suggest that these latter lots were also his place of residence at this time. The parcel containing Lots $9 *, 10 *, 26 *$ and 27* was subdivided between 1734 and 1751 (L34 p276, L41 p252).

LOTS 9* AND 27* (1751-1820)
By 1751, a parcel containing Lots 9* and 27* (27' X 135') belonged to Samuel Lawrence and his son, Laurence Lawrence. There are two residential structures described in the deeds here, one occupied by Laurence Lawrence in Lot 27 * and the other in Lot $9 *$ occupied by the "widow of Jacob Morris,

Grocer" (L34 p276, L41 p252). It is not known whether the structures described above date back to the period of Bayard's ownership.

The 9*/27* parcel no longer belonged to the Lawrence family by 1785. Lot 27* had passed to John Oothout, who also purchased Lot 13 in 1818 ( $L 43$ p164, L126 p116), L155 p464). A 1791 deed suggests that Alexander Hamilton was one of several Lot 9* owners at this time.

In 1791, Issac Moses, described in the deeds as an auctioneer, purchased Lot 9* (L46 p528). Lot 27* remained in the Oothout family until 1836 (L356 p326). During the late l8th and early 19th century it was occupied by John Morley (17981820) both of whom sold china, glass and earthenware (NYD). LOTS 9*, 10* AND 26* (1751-1824)

The Lot 10* and 26* component of stephen Bayard's parcel belonged to Margaret Beach by 1751. Beach was listed as deceased by 1784 and from then on Lots $10 *$ and 26* were conveyed separately (L41 p252, L34 p276, L46 p528). Lot 10*, seized from the merchant James Abeel for non-payment of debts in 1773, was sold at public auction to Francis Lewis in 1790 (L46 p79). Lewis subsequently sold Lot 10* to Issac Moses, owner of Lots 9*, 8, 28 and 29 (L47 pl06). Lots 9* and 10* remained in the Moses family from 1791/2 until 1824 when Reyna Moses sold the parcel to John Peters (L99 p451, L150 p47).

After the subdivision of the Lot $10 * / 26 *$ parcel (prior to 1773, see L46 p79), Lot 26* passed to William Bayard, a
wealthy merchant and New York County representative to the General Assembly from 1761 to 1768 (Bonomi 1971:231, 240). Bayard's Tory sympathies are witnessed in the 1784 seizure of all of his property, including Lot 26 , by the Commissioners of Forfeiture (L43 p164, L48 p484 p486 p536). Lot 26 was sold first to Peter Mesier in 1793 and then to Peter Elting and Abraham Varick later in the same year (L48 p486). Included in the 24'8" breadth of this lot was an 18" gangway "in common on the easterly side thereof" (L48 p486). A 1793 deed for adjacent Lot 25 also included provisions for the use of the alley which apparently ran from Pearl street to water Street between Lots 10*/26* and Lots 11/25 (L48 p484).

Elting and Varick, the owners of Lot 26 are described in the directories as "ironmongers" (1790). However, the directories and tax assessment records also indicate that the structure served as the Varick family residence until 1819. The Lot 9* structure, which had housed "the widow of Jacob Morris" ca 1751, was no longer standing in 1794, when the tax assessment records list Moses' property as a vacant lot (L34 p2765, L41 p252). By 1795 he had constructed a new building (tax assessment records). The tax assessment records and directories suggest that both Lots 9 * and 10* remained residential until 1809. Lot 27* was occupied by John Elting (1794-1795) and then by John Morley (1798-1820) both of whom sold china, glass, and earthenware (NYD).

Lots 9* and 10*, property of the Moses family, became the
site of two boarding houses, operated separately at first from 1810 to 1812 and then under one manager until 1824 (NYD).

LOTS 9*, 10*, 26* AND 27*--THE PEARL STREET HOUSE (1824-1853)
John Peters bought Lots 9*, 10* and 26* in 1824 (L170 p373, L183 p81) and by 1825 this address appears in the directory as the Pearl Street House. The Pearl Street House appears in Fay's 1831-2 Views of the City of New York. It is a wide four story building. The upper windows are shuttered and those at street level are set in recessed arches, a motif characteristic of Federal Style architecture. Architectural historians generally assign this period dates of 1790 to 1820 (Rifkind 1980:29-37). A sign painted across the length of the building between the second and third stories and continuing between the second and first reads "Pearl street House and Ohio Hotel." The text accompanying the engraving states that the hotel was "extensively known as the resort of merchants from every part of the Union, especially from ohio" (Kamienhoven 1972:138). The architecture and the 1795 tax assessments suggest that these buildings dated to 1795 when Moses constructed a new building in Lot $9 *$ and possibly also in Lot 10*. These two buildings eventually became boarding houses. Post-1795 structural alterations transformed the Lot 9* and 10* buildings (and possibly Lot $26 *$ ) into the single building seen in the 1830 engraving described above. During the 1820 s and 1830s, Lot 27 housed a private residence, a sailduck store and a cheese and fruit store. Although it
belonged to the Oohout family until 1836, Lot $27 *$ had become part of the Pearl Street House by 1832 (L356 p326; NYD).

The structures on Lots 26* and 27* were destroyed by the 1835 fire and rebuilt by 1836 (tax assessment records). From 1836 until 1841 Lots 26*, 27*, and 25 were assessed as a unit along with Lots 9* and 10* as the Pearl Street House.

The Pearl Street House structure apparently contained two older buildings (ca 1795) which had been incorporated into the single building seen in the 1830 engraving described above (tax assessment records).

The rear or water street buildings on Lots 26* and 27* served various functions during the 1820 s and 1830s. The Lot 26* building was a private residence. Lot 27 * housed a private residence as well as a sailduck store and a cheese and fruit store. Although this latter lot belonged to the oothout family until 1836, it became a part of the Pearl Street House by 1832 (L356 p326; NYD).

The structures on Lots $26 *$ and 27* were destroyed by the 1835 fire and rebuilt by 1836 (tax assessment records). From 1836 until 1841 Lots 26*, 27* and 25 were assessed as a unit along with Lots 9* and 10*, all five listed as the Pearl Street House. The directories, however, list a coffeehouse in Lot 27* from 1836 to 1841 and Silas Constant "Oils" in Lot 26* from 1834 to 1841. It thus seems that these buildings functioned independently and were not actually part of the Pearl Street House immediately after or before the 1835 fire.

Peters sold the Pearl Street House property (including 9*, 10*, 26* and 27*) to Thomas Davis in 1839. The parcel was resold in the same year to John Latson who continued to operate a hotel in Lots 9*, 10*, 26*, 27* and 25 (1845-52) (L451 p349; NYD). William Chauncey acquired the property in 1852 and subsequently subdivided the property, selling Lot 25 to Joseph King in 1853 and present day Lot 9 (9*, 10*, 26* and 27*) to New York Warehouse in 1862 (L653 p57, L857 p640).

## LOT 9--CONCLUSION

After 1853, the directories no longer listed the Pearl Street House. The 1860 tax assessments describe two sixstory structures on Lot 9. The one fronting Pearl street measured 52'2" X 70' and the other, on Water street, measured 51' X 70'. These two buildings, which are probably the same structures which housed New York Warehouse after 1862, could be the same buildings (with considerable structural renovations) assessed from 1836 to 1841 as the Pearl Street House. If this is so, then the building fronting Pearl street would date to 1795 and the one on Water street would date to 1836. Lot 9 has thus undergone a series of building episodes, some of which are documented. Lot $9 *$ held one residential structure and Lot 10* held half a structure in the late 17th and early 18 th centuries. An $18 t h$ century subdivision separating Lots $10 * / 26 *$ from Lots $11 / 25$ (Liber 13 p154) suggests that Livingston's house, which originally straddled Lots 10* and 11 , was no longer standing. It is assumed that
by 1734 (under Bayard's ownership) Lots 10*, 27* and 26* held structures built as replacements for the houses and back houses of the original grant holders. The first documented reference to a Water Street structure occurs in a 1706 tax assessment record placing a shed belonging to Robert Livingston in Lots 25 and 26*. By 1751 the shed has been replaced by the Lawrence family residence in Lot 26* (L34 p276, L41 p252).

The next documented construction occurs in 1836 when buildings in Lots 26* and 27* are rebuilt following an 1835 fire (tax assessment records). The Pearl Street House, active from 1825 to 1852, was on Lots 9* and 10* and was probably built in 1795 (tax assessment records) and might well be the building described in the 1860 tax records. Lots 10*, 26* and 27* have each seen a minimum of three building episodes before 1860, and Lot 9* a minimum of two episodes before 1860.

## Excavation - Introduction

As noted in the documentary research, the lot boundaries in the eastern portion of the project area have undergone a number of changes. The Lot numbered 9 in the most recent numbering system included four former lots which we have numbered 9*, 10*, 26* and 27* (see Site Map). To complicate matters further, in the late 17 th century, after the block was created by landfilling, the area designated here as Lot 10* was combined with Lot 11 and this land was the site of the

Livingston house. Because this structure was a major focus of our excavations in this area, these lot excavations are discussed in a separate section of this report.

After the rubble was cleared from the basement of the most recent building to stand on Lot 9, a brick floor was exposed which included the entire area incorporating the former Lots $9 *, 10 *, 26 *$, and $27 *$. On removal of this floor, a complex of earlier walls was exposed. In the center of the lot there was a rectangular brick wall, approximately 23 feet north-south and 13 feet east-west. The northern extent of these walls was located approximately 57 feet south of the Pearl street baseline. The relationship between this rectangular construction and other walls indicates that this area represented a courtyard or patio associated with buildings which fronted Pearl and Water streets. Due to scheduling considerations, excavation in this area was conducted during the last week of the project and we were unable to fully expose the extent of these architectural features, especially in the south or Water street portion of the lot. It should be noted that clearing operations resulted in the removal of an average of one and one half to two feet of deposits between the final common brick basement floor on Lot 9 and the surface from which manual excavations were conducted.

Two test units were placed in Lot 9 as part of our landfill sampling procedure. TC I was placed in Lot 9*, and

TC N in Lot 26*. TC AN was also placed in Lot 9* to test the area within an oval brick feature which intersected the wall of the "patio." The deposits in Lot 26* were tested during the last phase of the project by means of a trench consisting of three test units; $A Q, A R$, and $A S$. A fourth test unit, $T C$ AT, was placed in Lot 27 at right angles to this trench. Two additional test units were also placed in Lot 26*. TC AP was placed to test the deposits within a feature exposed in the profile of backhoe trench \#12. TC AU was placed to test the deposits within the patio area. This unit was located at the approximate location of the boundary line between Lots 10* and 26*

The following sections discuss the excavations within Lots 9*, 26* and 27*. A concluding section will attempt to correlate the results of the excavations and the documentary research.

## LOT 9*

## TEST CUT I

A single test cut, TC I, was placed in Lot 9* as part of the landfill sampling plan. It was located $11 \frac{1}{2}$ feet south of the Pearl Street base line and seven feet east of the Lot 8/9 boundary wall. TC I was the northernmost of the test cuts excavated during the first phase of the project (Figure 2$3)$.

Excavation of $T C$ I began at the level of the brick basement floor of the most recent building to occupy Lot 9 .


Figure 2-3. Test Cut I

1. hard-packed reddish-brown sand mottled with yellow clay 2. yellow-green silty sand mottled with charcoal and yellow clay
2. hard-packed yellow silty sand
3. yellow-green silty sand mottled with charcoal and yellow clay
4. red sand
5. green silt
6. yellow-green sandy silt with brick and shell
7. green sandy silt with pockets of brown and black clay
8. coarse gray sand
9. coarse green sand mottled with silt
10. red sand
$a=b r i c k-r e c e s s e d ~ 3$ inches

This floor was present in Lots 9*, 10*, 26* and 27*, which were combined to form Lot 9. Immediately below the brick floor, we encountered a thin layer of mortar followed by a layer of hard packed reddish brown sand with yellow mottling. The sand was probably deposited to level the ground surface prior to construction of the brick floor. The presence of creamware, pearlware and whiteware ceramic sherds in this sand indicate a probable deposition during the early-mid 19th century. This is consistent with the estimated date of construction of the floor derived from the excavations in Lot 10*.

Beneath the reddish brown sand, a stratum of yellow/green silty sand with yellow mottling was encountered, followed by a thin stratum of red sand. Both of these strata sloped downward from north to south. The artifacts recovered from these strata are not inconsistent with a seventeenth century deposition except for one creamware sherd recovered at the top of the yellow/green silty sand which was probably intrusive from the overlying 19th century stratum. These two strata may either represent the topmost strata of the seventeenth century landfill or may have been deposited by events which occurred subsequent to the initial deposition of landfill. The red sand layer ended at 13 inches below the surface of the test cut in the north and at a depth of 26 inches in the south.

Approximately 15-30 inches of yellow/green sandy silt and green silt were encountered beneath the band of red sand,
followed by 4-25 inches of green sandy silt containing pockets of brown and black clay. The latter stratum ended between 50 and 65 inches below the surface of the test cut. In the northern part of $T C$, the slit/clay stratum was directly underlain by a stratum of red sand containing rocks. The red sand began at about 55 inches in this part of the test cut and the rocks included in the soil matrix continued to about 75 inches, with the red sand continuing below the rocks. This stratum sloped downward from north to south. It should be noted that the rocks were included in the red sand only in the northernmost three to four feet of TC I. The southernmost part of the red sand stratum did not contain rocks.

In the southern part of the test cut, the stratum of green sandy silt with pockets of brown and black clay was underlain, at approximately 52 inches, by a layer of coarse brown sand which also contained rocks. This deposit sloped downward from south to north and ended approximately halfway between the south and north walls of $T C$. The base of this stratum was at between 66-72 inches. The stratum was underlain by the red sand which did not contain rocks. Thus there are two separate strata containing rocks which began at approximately the same depth, a stratum of brown sand in the south portion of TC I and a layer of red sand in the north. The latter deposit sloped downward and continued beneath the brown sand in the southern portion of TC I. A post hole test in the bottom of the test cut indicated that the red sand
continued to at least $99 \frac{1}{2}$ inches below the surface of TC I. Interpretation and Dating $\operatorname{lot} 9 T C I$

As described above, two strata of yellow/green silty sand, separated by a thin layer of red sand, were encountered during the excavation of Test cut $I$. The uppermost yellow/green silt was excavated as strata IV and VI, the red sand as stratum VII and the lower yellow/green silt as strata VIII and IX. The mean ceramic date for strata IV and VI is 1683.8 (103 dated sherds). The mean ceramic date for strata VIII and IX is 1680.0 ( 232 dated sherds). Because of the wide range of manufacturing dates for the ceramic types in use during this period, the mean ceramic date may be of limited utility in assessing the relative dates of deposition of these two deposits. The difference in the presence of certain ceramic types may be significant in supporting an earlier date of deposition for the lower silt strata. For example, four sherds of light blue glazed delftware, which had an initial date of manufacture of c. 1690 , were recovered from strata IV and VI, and 10 sherds from strata VIII and XI. These figures represent $3.8 \%$ and $4.3 \%$, respectively of the dated sherds from these contexts. However, nine of the 10 sherds from stratum VIII were recovered from the first excavated level of this deposit, which is likely to have included material from the overlying strata. The difference in the proportion of 17th-century-type salmon and buff/white bodied wares may also be of significance. Fifteen of these sherds were recovered from
strata IV and VI, $14.6 \%$ of the dated sherds, while 69 sherds were recovered from strata VIII and IX, 29.7\% of the dated sherds.

The calculated Binford pipe stem date for strata IV and VI is 1697.76 ( $N=220$ ) while for strata VIII and IX the calculated date is $1677.90(N=193)$. This reflects the fact that the modal bore size for strata IV and VI is \#6 (67\% of measurable bores) while the modal size for strata VIII and IX is \#7 (48\% of measurable bores). It should be noted that the first excavated level of stratum VIII has a bore size distribution similar to that of stratum IV, reflecting the fact that some of the overlying material was probably excavated with stratum VIIIa. The differences in pipe stem dates would otherwise be even more pronounced. Other smoking pipe characteristics support the differences in dates. The fleur-de-lis motif, characteristic of Dutch 17th-century pipes, appears on five of the stem fragments from stratum XI. None were recovered from the other strata.

Another 17th-century decorative motif, the runs-of-dots, appears on five pipe fragments from strata VIII and IX and only one from strata IV and VI. Eight fragments of pipe bowls with the characteristic Dutch 17th-century belly bowl shape were recovered from strata VII and $X I$ and only one from stratum IV. According to McCashion (1979), Dutch pipes were replaced by those imported from England beginning in the 1690s. Thus increasingly later deposits should contain fewer

Dutch pipe fragments.
As far as pipe maker's marks are concerned, the only datable mark from stratum IV is "TO," dated to 1668-1725. The same mark was present on a pipe fragment recovered from the soil excavated immediately above stratum IV. The range of dates for the marks present on pipe fragments excavated from strata VIII and XI is earlier. Four of these marks are "EB," 1624-1668. Other marks from this deposit are "WW," 16501677; "PE," 1654-1680, "IW," 1630-1660; and "HG," 1668-1688.

The above data suggest that strata IV and VI represent a separate, and later, depositional event than strata VIII and IX. One possibility is that two episodes of filling took place at this location, with a gap of several years between them. Another possibility is that strata IV and VI were deposited either in association with the construction of a building on the lot after the land-filling was completed, or in association with the demolition of the first building constructed on the lot.

Although strata IV and VI, as well as the red sand layer which separated strata IV and VI from strata VIII and IX, contained a high density of mortar, neither of these deposits contained high densities of brick or architectural artifacts. Thus the most likely explanation is that strata IV and VI represent a second episode of land filling, with the red sand accumulating while the land was unoccupied between the two land-filling episodes. The fact that strata IV and VI contain
a higher artifact and oyster shell density than strata VIII and IX suggests that the source of this landfill was an area of more intense occupational activity than the area from which the earlier landfill was taken.

The deposit of green sandy silt with clay which underlay the above deposits contained a lower density of cultural materials in all categories, suggesting that this deposit had a different origin. The mean ceramic date and pipe stem dates for this deposit are 1677.4 and 1664.0 respectively, compared with 1680.0 and 1677.9 for strata VIII and IX. However, these differences may not be significant since the figures for the deposit of green sandy silt with clay are based on only 35 pipe stems and 53 sherds.

The two deposits which contained a large quantity of rocks, red sand in the northern portion of the test cut and brown sand in the south, probably had different origins. The rocks present in the red sand consisted largely of smooth cobbles, apparently water-worn. Those present in the brown sand were largely Manhattan schist, and did not appear waterworn. The excavation records suggest that there were few, if any, artifacts in these deposits. However, since much of the brown and red sand was excavated in arbitrary levels, and included soil from both deposits, as well as some of the overlying sandy silt, it is difficult to determine whether either or both of these deposits containing rocks were culturally sterile.

Examination of the profile from Backhoe Trench 6, which extended the TC I profile to the north and south (see landfill discussion in Chapter 9), suggests that the deposit of red sand with rocks was present on the river bottom prior to the land-filling while the brown sand with rocks may have been part of the landfill. Several artifacts were noted in the latter deposits in the backhoe trench profile. This conclusion is consistent with the observed differences in the rocks contained in the two deposits. However, as discussed in the same section, other evidence from Backhoe Trench 6 supports an interpretation of the stratum of brown sand with rocks as part of the pre-landfilling ground surface.

TEST CUT AN
During the early stages of the project we uncovered the walls of the Lot 9 patio which occupied the central portion of the former lots designated $9 *, 10 *, 26 *$ and $27 *$. During the clearing operation we noted a curved brick wall which intersected the southern portion of the east wall of the patio. Further clearing exposed the top of the brick wall which defined a feature extending east and north of the patio. Further excavation indicated that the southeastern portion of the feature had been destroyed by construction of the patio. East of the patio, the feature wall was cut off by a stone wall representing an extension of the Lot $9 * / 10 *$ boundary wall. We were not able to determine whether the northeastern portion of the feature, east of this wall and north of the
outbuilding, remained intact. The remaining portion of the feature wall indicated that it had been roughly oval in shape. From the portion remaining we estimate that it had extended approximately 17-18 feet north-south. The east-west extent is somewhat more difficult to estimate, but the feature may have extended some 12-13 feet in this direction.

During the final phase of the project we decided to place a test cut to sample the deposits within the feature and expose details of its construction. Test Cut AN (Figure 4) was placed in the northwestern corner of the feature, north of the patio. The test cut initially measured six feet northsouth and four feet east-west. It was located so that its southern portion would test the deposits within the feature, while its northern portion would test the deposits outside the feature.

Excavation of Test Cut AN exposed the floor of the feature only some five inches below the surface of the test cut. Only two courses of the feature's brick wall remained intact.

The same brown silty sand with rubble was excavated within the feature and immediately north of it. It should be recalled that the walls of the patio were exposed only after the brick basement floor of the last building to stand on Lot 9 had been removed. While the brown silty sand deposit may have been contaminated during the removal of the overlying floor, it was probably deposited during the demolition of the
building associated with the feature and/or the subsequent construction of the patio and the structure associated with the north-south stone wall immediately east of the TC AN boundary. The 14 dated sherds from this deposit included one creamware and one whiteware sherd. The other ceramics are of types consistent with the late l7th-century landfill. This deposit also included six fragments of post-1800 mold-made bottle glass. The data thus indicates a 19 th century date of deposition for the deposit.

The easternmost six inches of the feature floor had been disturbed by the construction of the north-south stone wall about six inches east of the eastern boundary of TC AN. The brown sandy silt in this disturbed area below the level of the top of the feature floor was excavated separately in the southeastern corner of TC N (the portion of the unit where the floor was not removed). The one dated ceramic sherd recovered from this deposit was creamware.

After the excavation of the overlying rubble, the wall of the feature was removed within the boundaries of test cut AN and the feature floor was removed to a point one foot north of the southern extent of the test cut. One of the bricks from the feature wall was saved. It was wedged shaped, with its curved wider edge apparently forming the outer circumference of the feature wall. The brick contained the lettering "McKee's Masonry."

The floor of the feature was solidly constructed. It
consisted of an approximately one half inch thick layer of mortar which overlay slabs of schist, one or two layers thick, totalling two to three inches in thickness; a single couse of brick underlay the schist. The schist slabs and mortar ended at the brick side walls of the feature, with the remaining courses of this wall overlying the bricks of the floor. A thin (less than one half inch thick) layer of decaying wood underlay both the floor and walls of the feature. The excavations north of the feature indicated that the wood layer did not continue past the feature boundary. The wood was probably laid down first to serve as a platform for the brick layer. A thin layer of gray clay was noted underneath the wood stain in the eastern profile of TC N. This stratum may represent decaying wood or clay deposited to level the surface prior to the construction of the feature. It was not noted by the excavators separately from the decaying wood. The fact that the wood stain is present beneath the disturbed portion of the floor suggests that the base of the wall located east of the unit was probably at the same approximate elevation as the base of the feature. Its construction had apparently disturbed the schist slabs and brick layer of the floor, leaving the wood intact. A total of five datable sherds, presumably deriving from the immediately underlying soil, were removed with the decaying wood. Four of the five sherds were creamware, with the fifth being delftware. This is consistent with a late 18th-early 19 th-century date of construction for
the feature. The feature probably functioned as a cistern, with the floor being solidly made to support the weight of the water and to prevent leakage. It was located in the backyard of a building fronting on Pearl street. Since the feature was situated on both sides of the Lot $9 * / 10 *$ boundary wall, the building associated with it must have stood on both of these lots. According to the documentary research, Lots 9* and 10* were assessed as one lot as early as 1818 and it is known that by 1824 the Pearl Street House stood on these lots and it is likely that the feature was the large cistern which provides water for the hotel.

The deposit immediately below the brown sandy rubble north of the feature wall was described by the excavators as orange sand except for an area in the easternmost portion of the unit which had been disturbed by the construction of the stone wall east of TC AN. No ceramics or other datable artifacts were recovered from the orange sand. A single bottle glass fragment and a small amount of oyster shell and brick were the only artifacts recovered from this deposit. The material within the disturbed area and that underlying the orange sand to a depth of approximately 13 inches (the level at which the base of the feature floor had been reached) were removed together. A single delftware sherd was the only ceramic recovered. Three fragments of post-1800 mold-made bottle glass were also recovered from this material.

The soil below the level of the cistern floor, both
underneath the feature and to the north, was described as red/brown sandy silt mottled with yellow and gray silt. This deposit continued to a depth of approximately 19 inches below the test cut datum. The profile drawings suggest the possibility that at least some of this material may have been associated with the construction of the feature. This is supported by the artifactual evidence. Of the ten dated ceramic sherds four were creamware and one was pearlware. The other five sherds consist of 17 th century-type earthenware, delftware and slipware. The latter sherds probably derived from the underlying landfill. This deposit also yielded two sherds of post-1800 mold-made bottle glass, and one sherd of bottle glass dating to the period 1780-1810/30. These data provide further support for an early $19 t h$-century date of construction of the feature consistent with the known construction of the Pearl Street House. This deposit was underlain by red orange sand with pockets of blackish brown and yellow silt, excavated only in the southern portion of the test cut to a depth of 23 inches. No artifacts and only a small amount of brick and marine shell were recovered from this stratum. Although only a small sample of this stratum was excavated in TC AN, landfill consisting of red sand found in other portions of the site also had low artifact densities.

As noted above, prior to the excavation of the test units on this portion of the site, some of the deposits underlying
the brick basement floor of the final building to stand on Lots 9*, 10*, 26* and 27* (building \#1) had been removed by construction activities. However, because of the need to maintain a ramp to permit trucks to access the site, a strip of land extending approximately 20 feet north from the Water street sidewalk remained unexcavated and covered by overburden. Thus a profile of the deposits which had been removed was visible beneath the overburden, approximately 12 feet south of the location of Test Cut AT. This profile indicated that an earlier mortar and/or wooden basement floor was present approximately one foot below the brick floor, and that the deposits between the two floors were presumably associated with the demolition of the building associated with the lower floor (building \#2). Since the location at which the profile was drawn was aligned with the exposed portion of the cut stone lot boundary wall visible on the surface at which the test cuts were excavated in this portion of Lot 9 , it can be inferred that the lower basement floor was present in both Lots 26* and 27* and that building \#2 stood on both of these lots. The profile indicates that the lot boundary wall extended only some six inches above the excavation surface with its top approximately six inches below floor \#2. Thus in the construction phase prior to the erection of building \#2, separate buildings stood on Lots 26* and 27*. The lot boundary wall immediately west of Test Cut AT was probably the side wall of this building (building \#3),
possibly a party wall for the Lot $26 *$ and $27 *$ structures. TEST CUT AT

TC AT was placed in Lot 27* just to the west of the Lot 26*/27* boundary wall, and perpendicular to this wall and to TC AQ, which was excavated east of the wall (Figure 5-6). TC AT measured two and a half feet north-south and six feet eastwest.

Excavation of TC AT began approximately one and one third feet below the wooden basement floor of building \#2 (see preceding section). A number of stones were noted on the surface in the northern and western portions of the area excavated in $T C A T$, and after the excavation of the first level of the uppermost deposit, which consisted of brown silty sand with a large quantity of mortar, the stones were defined as a portion of what had been a roughly circular stone feature. The northern edge of TC AT was tangent to the northern portion of the stone ring, which curved across the western portion of the test cut. Thus the area lying within the stone ring was in the eastern portion of the test cut. Photographs indicate that the feature had been cut off outside the boundaries of TC AT, East of the test cut, this was presumably due to the construction of the lot boundary wall. Thus, the stone feature was probably associated with a building phase prior to the construction of building \#3. To the south the feature was probably removed by the installation of stone slabs associated with one of the later building phases.


Figure 5. Test Cut AT

1. brown silty sand, heavily mottled with mortar, brick, and charcoal
2. mixed yellow silt and gray-blue clay 2a. gray-blue clay
3. brown silty sand, very heavily mottled with mortar, brick, and charcoal
4. brown silty sand with construction rubble
5. gray-brown silty sand with brick, mortar, and charcoal
6. reddish-brown sand
7. brown sand, less mottled

Figure 6. Test Cut AT/AQ

1. yellow-brown sand with chunks of decaying mortar
2. pink sand
3. grayish-yellow sand with decaying mortar
4. dark brown sand (decayed wood?)
5. yellow-brown sand
6. grayish-yellow sand with mortar
7. mixed cinder and mortar

The remaining portion of the feature which remained intact within the boundaries of TC AT consisted only of one course of stones which were embedded in the brown silty sand with mortar that constituted the uppermost deposit excavated in the test cut. This deposit sloped downward from west to east and was two to six inches thick. This deposit probably represents the pit dug for the installation of the feature. In the excavation of TC AT, only a portion of this deposit was excavated by itself without being mixed with underlying deposits. Only one ceramic sherd, creamware, was recovered the unmixed deposit, with the artifactual material consisting largely of brick and mortar.

However, at a depth of approximately six inches below the excavation surface, there was a pit dug to a deeper level within the feature, near its western border. The matrix within the pit was the same brown silty sand which overlay it, but the pit appeared to include more cut stone and cobbles. It would appear that the pit was a deeper extension of the hole dug to install the feature. It is possible that the feature functioned either as a privy or a drainage sump. In either case, the deeper hole in the middle could have been dug to promote drainage. The stone and cobbles in this pit deposit would be consistent with this function. A portion of the deposits in the pit were excavated separately without being mixed with the surrounding soil. A total of seventeen dated ceramic sherds was recovered. These included six
delftware, one overglaze-decorated white salt-glazed stoneware and ten creamware sherds, yielding a mean ceramic date of 1759.9. This ceramic assemblage suggests that the feature was installed after the introduction of creamware in the 1760 s and probably before the introduction of pearlware in the 1780 s. The material which filled the pit and the trench excavated for the installation of the feature may have been associated with the demolition of the building which preceded the one associated with the feature, with the trench being excavated through this deposit and backfilled with it. The building associated with the feature would be building \#4 (building numbers get higher as depth below surface increases) with the deposit in the trench dug to install it dating to the demolition of building \#5, presumably during the third quarter of the 18 th century.

The deposit immediately underlying the one associated with the installation of the feature consisted mainly of a mottled yellow silt, underlain by a thin (two to four inches in most places) layer of blue/gray clay. Because of difficulties in seeing these soil changes, due to the presence in the yellow silt of various lenses consisting of both the overlying and underlying material, the excavated yellow silt was contaminated with material from the brown silty sand from the feature trench and pit and with the underlying blue/gray clay. The two uppermost of the excavated contexts which contained these mixed deposits (Catalog \#1118 and \#1124, and

Catalog \#1131) yielded an additional 36 dated sherds. These include three pearlware sherds, in addition to nineteen creamware, six delftware and one sherd of 18 th century Buckley ware and five sherds of 18th-century oriental Export porcelain. The presence of the pearlware, in addition to ceramic types recovered from the trench and pit below the feature indicate that the date of demolition of building \#5 and installation of the feature occurred somewhat later than indicated by the latter deposits, perhaps early in the last quarter of the 18th century. (It should be noted that due to a coding error the computer catalog sheets indicate one sherd of whiteware in this deposit. This sherd was actually identified as pearlware). The lowest of the mixed deposits (Cat. 1153 and 1159) contained only creamware, delftware, white salt-glazed stoneware and 18th-century porcelain. The decrease in the density of building materials with depth among these three mixed contexts ( 7097,2073 , and 1259 grams/cu.ft.) and the declining mean ceramic date $(1782.8,1769.5$ and 1758.8) reflect the decreasing amount of material deriving from the feature trench and pit. The yellow silt may represent material deposited to raise the ground surface prior to construction of building \#5, probably in the third quarter of the 18th century, or additional material from its demolition. The underlying blue/gray clay stratum abutted a fieldstone wall in the eastern part of the test cut. This wall extended approximately six inches into the test cut. The
more recent Lot $26 * / 27 *$ boundary wall may have overlain this wall, with the earlier wall extending outward to the east. However, TC AT did not expose the intersection of the two walls.

Only a small portion of the blue/gray clay was excavated separately, and only one dated sherd was recovered from this deposit. This sherd was underglaze decorated, brown rim, 18th-century Oriental export Porcelain. The presence of this ceramic type, with an initial date of manufacture of 1700 suggests that the blue clay stratum is not part of the landfill. The clay may have been deposited in the basement of building \#5 or an earlier, post-landfill structure to seal out moisture. A similar deposit of clay was encountered in Lot 14. The landfill deposits, consisting of reddish brown sand, began beneath the blue/gray clay stratum, and were excavated only in the easternmost one and a half feet of TC AT. The water table was reached at a depth of 54 inches below the TC AT datum, and excavation was terminated at a depth of 58 inches. The landfill deposits and the stone wall continued below this depth. The small sample of landfill recovered from this test contained low densities of artifacts, faunal and building material. The six dated ceramic sherds consisted of one combed slipware and six delftware sherds, consistent with the ceramic types typically recovered from the landfill deposits on the site.

There was no indication in TC AT of a wall trench for the
stone wall. The TC AT wall may be the west wall of a building whose rear wall was exposed in $T C N$ and AR. It should be noted that the elevations of the top and base of this wall suggests that it was constructed at the time of the landfilling as discussed in the description of TC $N$.

TEST CUT N
Excavation of $T C N$ began after the test of the brick floor of the most recent building which extended over Lots 9*, 10*, 26* and 27* (the modern Lot 9). Since the water lot grants indicate that the limit of the initial period of landfilling was 90 feet south of the Pearl street baseline $T C$ N was placed 94 feet south of the baseline in an effort to detect any fill retaining structure marking the border between the first and second 17 th century filling episodes. The test cut initially extended four feet east-west and six feet northsouth. However, because the architectural features uncovered in the west and north portions of the test cut reduced the area which could be excavated, the test cut was subsequently extended two feet to the south and one foot to the east (Figures 7,8,9,20).

To a depth of $8-13.5$ inches below the test cut datum, the excavated material consisted of overburden, much of this material probably consisting of the debris which underlay the most recent (common) brick basement floor of Lot 9. Seventeen of the 25 ceramic sherds from this deposit ( $68 \%$ ) consisted of 19th-century whiteware and Albany slipped stoneware. The




FIG 9

TEST CUT N



FIG 10

## TEST CUT N

Figures 7-10. Test Cut N

1. reddish silty sand with construction debris
2. white sand with pockets of yellow silty sand
3. gray silty sand with mortar and charcoal
4. hard-packed reddish mortar
5. black silty sand with red and yellow brick and rocks
6. rusty yellow sand mottled with black silt and mortar
7. black silty sand with mortar, charcoal, and brick
8. orange sand mottled with gray silt
9. gray silt
1.0. greenish-gray silty sand mottled with orange silt
10. greenish sandy silt mottled with orange silt

11b. orange silt
11c. greenish-brown sandy silt mottled with orange silt 12. yellow-green silty sand with fragments of burned wood
13. gray clayey silt
14. hard-packed yellow sandy silt
15. sterile red sand
16. coarse red-brown silty sand
17. sterile red sand
18. yellow silt with mortar
19. decayed wood
20. orange sand mottled with gray silt
21. bluish silt
presence of a pipe fragment with a maker's mark of TD enclosed by stars indicates a date of deposition post-dating 1845, when this mark was first used, and confirms a mid-late 19thcentury date of deposition for the floor.

At a depth of approximately 14 inches below the TC $N$ datum, we encountered the top of a "trough" constructed of red brick lined with plaster on the inside. The trough had a Ushaped cross-section. It extended across the southwestern portion of TC $N$, running from southwest to northeast. It intersected the south wall of the test cut about three feet east of the west wall and the west wall two feet south of the north wall. To avoid undercutting the trough, the soil beneath it was not excavated, and the square was extended as noted above. It should be noted that the west wall profile of $T C N$ is drawn along the diagonally oriented wall underlying the trough. The interior of the trough was approximately 20 inches across at the top and 12 inches deep. It apparently functioned as a drainage trough analogous to the earlier wooden troughs encountered in TC AQ in Lot 26* and in several of the excavations in the northern portion of the site. The deposits within and immediately above the trough consisted of a gray sandy silt with rubble. This deposit contained a relatively high density of building materials and a NA/A ratio of .9 , and is probably associated with the demolition of the building which stood on Lot $26 *$ prior the to the joining of the four lots to form the modern lot 9. Twenty-six of the 50
ceramic sherds recovered from this deposit consisted of whiteware and other 19th-century ceramic types. Eight fragments of 19 th-century beer/ale bottle glass were also present. The presence of a sherd of transfer printed whiteware datable to the 1830 s suggests a deposition after this date.

A deposit in the western part of the square, adjacent to the trough, and described by the excavators as orange, orange/brown, orange/gray or orange/tan sandy silt, represents the trench dug for the construction of the trough. This deposit is shown on the west profile of the test cut as tan silty sand. The 21 dated ceramic sherds are consistent with the interpretation that this trench was excavated through earlier deposits in the 19 th century, as indicated by the presence of three whiteware sherds. The fact that these sherds constitute only $8.8 \%$ of the 34 sherds, as contrasted with the much higher percentage present in the deposits within the trough, confirms that this feature was associated with the construction of an earlier 19th-century structure which preceded the final building phase on this lot.

A ceramic sewer or drain pipe was encountered in the eastern portion of $T C N$, approximately six inches below the test cut datum. The trench dug to install this pipe was filled with a dark brown sandy silt. The artifactual material in the pipe trench consisted mainly of building materials, and artifacts with an architectural/non-architectural ratio of
two to one. As was the case with the deposits immediately underlying the floor of the most recent building to stand on the lot, a majority of the ceramic sherds from the pipe trench ( $56 \%$ of the 50 sherds recovered), consisted of whiteware. A fragment of 19 th-century mold-made bottle glass was also present. These data suggest that the pipe was installed under the floor of the last building to be constructed on Lot 9 immediately prior to construction of the basement floor.

At about 18 inches below the $T C N$ datum, the top of a cut stone block wall was encountered in the northern portion of the test cut. Two courses of this wall remained, extending to a depth of approximately 32 inches. The bricks shown overlying the wall in the north profile of $T C N$ may have represented the base of a superstructure wall. These bricks are below the elevation of the brick basement floor of the final structure. It should be noted that this wall does not connect with the fieldstone foundation wall encountered in the south part of TC $N$ which is discussed below. The profile drawings indicate that the cut stone wall encountered in the north portion of TC N predated both the stone trough and the ceramic pipe, since there does not appear to be a wall trench visible in the profile. We were not able to fully follow the course of this wall, but it is possible that it intersects with an east-west wall just north of $T C N$. It also may have connected with the curving wall noted slightly north of the location of $T C N$ in the final phase of the project.

The 17th-century landfill deposits were encountered immediately beneath the wall in the northern portion of the test cut and the trenches dug for the installation of the trough and the ceramic pipe. In the southern portion of the test cut, at the same approximate elevation that the landfill deposits began we encountered the top of a fieldstone wall which extended in an east-west direction. The top of the wall was about 41 inches below the test cut datum, and the wall protruded northward five to seven inches into the test cut. This wall is apparently the rear wall of a late 17 th-century building constructed on this lot. The wall extended to the west, as it was encountered in $T C A Q$ and $A R$, and it will be discussed further in the descriptions of those excavation units.

It should be noted that $T C N$ is located in the extreme eastern portion of Lot 26 *. After excavation of the test cut was completed and the eastern profile drawn, a probe into the eastern profile seemed to encounter another stone wall only several inches further to the east. However, upon removing the soil of the eastern wall, we discovered that this "stone wall" was, in fact a large mass of concrete associated with the large 20 th century building which had disturbed most of the southern portion of the block east of Lot 26 . . The fieldstone wall in the south of $T C N$ had been cut off by the installation of this concrete block just east of the easternmost extent of TC N.

The landfill deposits consisted of five types of soil. From the top of the deposits, these consisted of a grayish or greenish brown sandy silt with orange or yellow mottling (fill stratum \#1), a grayish or greenish brown sandy silt containing a large amount of wood and brick (fill stratum \#2), a gray silt (fill stratum \#3), a yellowish brown sandy silt with mortar (fill stratum \#4), and finally a stratum of red sand (fill stratum \#5). The fill strata sloped downward from north to south. The water table was encountered at a depth of 85 inches below the test cut datum. In the southern part of the test cut, the water table intersected fill stratum \#4, with the stone wall extending below the water table. Excavation of the test cut continued below the water table in a small portion of the southern part of the cut. The red sand (fill stratum \#5) continued to a depth of 90 inches, and the wall appeared to end in this stratum. Between 90 and 100 inches, a deposit of gray silt with wood, shell, pebbles, cobbles and rocks was encountered. This deposit represented the prefilling river bottom silt. Thus, the overlying red sand was a landfill deposit, not the river bed. Deposits of sterile gray sand (100-110 inches) and red sand (excavated to 113 inches) were encountered beneath the gray silt. These strata represented the river bed. Since the river bottom silts sloped downward from north to south, as shown in the Backhoe Trench \#6 profile discussed above, it is likely that the landfill was deposited in such a way as to follow this slope.

As indicated in the TC $N$ profile, there was apparently no builder's trench associated with the early stone wall. The manner in which the landfill deposits intersect the wall suggest that the wall was put in place prior to the land filling with the fill being thrown up against the wall which supported the fill. No other fill supporting structure was encountered in TC N, Backhoe Trench 6 or any of the other test cuts in the southern portion of the lot. It is possible that the practice of constructing house walls prior to the landfilling, so that these walls could also serve to support the fill, noted for the northern portion of the site, was continued for the later land-filling episode. However, the presence of the 10 inches of river bottom silts at this location suggest that this portion of the site was, in fact, under water during a major portion of the tidal cycle. At least the basal portion of the stone wall would have had to have been constructed beneath a shallow depth of water.

## Landfill Artifact Contents and Dating

The five landfill strata differed in artifactual content. The lower two deposits (\#4 and \#5) had low artifact densities although fill deposit \#4 contained a high density of building materials. Of the upper three deposits, the second contained the highest density of building materials, as well as wood and timbers, and the highest ratio of architectural to nonarchitectural artifacts ( $N A / A=.6$ ). This deposit apparently came from a location which contained debris from structural
demolition.
Fill deposits \#1 and \#2 contained substantially higher densities of bone than the other three landfill strata, fill stratum \#3 contained marine shell densities similar to the two overlying deposits, while fill strata \#4 and \#5 contained low bone and shell densities. Fill deposit \#3 also yielded vegetal material including 44 pits. Fill stratum \#3 may represent material dredged from the river bottom on the basis of soil color and texture, and the presence of shell without cultural material.

Fill deposit \#1 yielded 89 dated ceramic sherds with a mean ceramic date of 1682.2 and deposit \#3 yielded 21 dated sherds with a mean ceramic date of 1681.2. Deposits \#2, \#4 and \#5 yielded only 8,4 and 1 dated sherds, respectively. All of the sherds recovered are consistent with inclusion in the late 17 th-century landfill deposits with the exception of one sherd from deposit \#4 which was identified as whiteware. This sherd must have been intrusive into this deposit.

TEST CUT AQ
TC AQ was the southernmost of the three north-south aligned test cuts placed in Lot 26*. The test cut was located approximately six inches east of the Lot 26 * \Lot 27 * boundary wall. The unit measured two and a half feet east-west and eight and a half feet north-south (Figures $11,12,13,14$ ). The northern portion of the test cut included stones which turned out to be the top of a wall. At the elevation at which the


Figures 11-14. Test Cut $A Q$

1. gray-brown sand mottled with yellow silt
la. gray-brown sand (grayer than \#1) with charcoal flecks
2, red sand
2. gray-brown sandy silt with shell, brick, and charcoal
3. yellow-brown silty sand mottled with yellow silt
4. mixed gray, red, and yellow sandy silt
5. gray silt mottled with rust
6. rust stain
7. gray-brown and orange mottled silt
8. red sand
9. dark gray clay
10. light sand
excavation began, the area immediately south of the test cut included a complex of stone slabs and brick flooring. As discussed in the description of TC AT, this surface was approximately two feet below the brick basement floor of the most recent structure to stand on Lots $9 *, 10 *, 26 *$ and 27* (building \#1), and one to one and a half feet below a second wood/mortar basement floor of a building which apparently stood on Lots 26* and 27* (building \#2). The lot boundary wall seemed to be associated with two earlier individual structures which stood on Lots 26* and 27* and the bricks and slabs north of TC AQ were apparently the basement floor of this Lot 26* structure (building \#3). This floor had been removed by construction equipment at the location of $T C A Q$ prior to excavation except in the southermmost two to two and a half feet of the unit. The brick floor at this location was one course thick. Immediately beneath it was a layer of red sand one to two inches thick, apparently deposited as a bedding for the brick floor at the time of its construction. This deposit yielded four ceramic sherds, three of which were whiteware. This indicates a 19th century date of construction for this floor, which was probably associated with building \#3.

The sides of a wooden trough were exposed in the western portion of $T C A Q$ approximately one inch below the red sand bedding. The trough proved to be about three inches deep with vertical sides. Its total width including the sides was 14
inches. The east side of the trough was 10-12 inches from the east wall of TC AQ, with its west side at the location of the west wall of the test cut. The trough ran the length of $T C$ $A Q$, terminating at the stone wall at the north end of the unit. There were two wooden "ridges" in the center of bottom of the trough, approximately four inches apart and extending the length of the trough. This may represent an inner trough set within the larger one. The function of this trough is uncertain, but it probably functioned to provide drainage. This would represent a better preserved version of the wooden troughs uncovered in Lots $11,13,14$, and 15. Since no basement floor was uncovered below the trough, it is possible that it was located in an alley between buildings located on Lots 26* and 27*.

The same brown silty sand with rubble which overlay the trough also filled it. This material was probably deposited when the building associated with the trough (building \#4) was demolished and the ground level raised prior to the construction of the next structure to stand on the lot. The 46 ceramic sherds from this deposit included 18 creamware and 14 pearlware sherds, in addition to a lesser number of delftware, combed slipware, porcelain and apparently redeposited 17 th-century-type earthenware sherds. These ceramics indicate that building \#4 was probably demolished in the latter part of the 18 th or beginning of the 19 th century, before the widespread introduction of whiteware.

At the bottom of the trough, there was a thin deposit of dark gray clay and red sand which may represent sediments deposited in the trough at its time of use. Two ceramic sherds were recovered from this deposit, one 17th-centurytype earthenware and one Oriental Export porcelain sherd.

The wooden trough was subsequently removed and the soil with it was screened. One creamware sherd and one delftware sherd were recovered. This is not inconsistent with a late 18th century period of usage of the trough.

Soil within the limits of TC AQ east of the wooden trough were excavated separately from the deposits within the trough. The soil consisted of gray sandy silt with a lens of tan silt and orange sand in the northern portion of the excavated area. The nine ceramic sherds from these deposits consisted of 17th-century-type earthenware and delftware. This allows the identification of this deposit as part of the 17th-century landfill. It should be noted that the south wall profile of TC AQ shows a small pocket of red sand immediately east of the trough and ending at its base. It is possible that this represents a shallow trench dug through the landfill to install the trough. However this deposit was not noted during the excavation of the test cut.

Subsequent to the removal of the wooden trough, the underlying deposits were excavated to a depth of approximately 15 inches in the south portion of $T C A Q$ and 30 inches in the northernmost two feet of the test cut abutting the stone wall.

The bottom 10 inches of the excavated material was shoveled out without screening in order to expose the base of the stone wall. The nineteen dated ceramic sherds recovered from these deposits were also types typically found in the landfill. The landfill deposits in $T C$ AQ consist mainly of deposits of gray/brown and yellow/brown sandy silt and silty sand. To the extent that they were exposed in this test cut, the deposits appear to slope downward from north to south. Low densities of artifacts, faunal and building materials were recovered from the excavated landfill deposits.

Photographs of the stone wall in the north end of TC AQ indicate that the base of this wall was reached at about the deepest point of the excavation. However, excavation of TC $A R$, on the north side of this wall indicates that the wall continues well below this depth. It is possible that the northern part of the wall was built first, during the landfilling process (see discussion of $T C A R$ ), with the southern portion exposed in $T C A Q$ installed later in conjunction with the construction of a later building. However, neither the east wall profile of $T C A Q$ nor the artifactual evidence from the excavation support this interpretation. It is more likely that after the construction of this wall was begun in conjunction with the landfilling, it was decided to widen the wall and the upper portion was consequently made thicker, with the base of this upper portion resting on the landfill which had already been deposited.

However, this reasoning does not explain why the wooden trough, which apparently dates to the late 18 th century at the earliest, terminates at this wall, unless the function of the spaces between the wall were to serve as a sump to drain the water carried off by the trough.

Subsequent to the excavation of $T C A Q$, we removed the several inches of landfill deposits which separated the test cut from the stone wall to the west. This is the same wall which had been exposed in TC AT. Photographs show this wall continuing below the depth to which $\mathrm{TC} A Q$ had been excavated. The results of $T C A T$ indicate that this wall continued at least two feet below the bottom of the northern stone wall in TC $A Q$ and the photographs indicate that the former wall was built first, with the $T C A Q$ wall abutting it.

Photographs and profiles of the south wall of the more deeply excavated northern portion of $T C$ AQ (section A-A) indicate the presence of what appears to be a wall trench for the stone wall west of the test cut. However, the excavation records and the artifactual content of the excavated material, as well as the results of TC AT, offer no supporting evidence for this interpretation. It is possible that this deposit represents a wall repair trench dug shortly after the landfilling was completed.

TEST CUT AR
In examining the surface of Lot 26* prior to excavation, we noted an area on the surface which was covered with rocks.

Test Cut AR was placed so as to cut across this area of rocks and define any associated feature. The test was extended to intersect what appeared to be two stone walls noted north and south of the possible feature. The test cut measured two and a half feet east-west and eight feet five inches north-south (Figure 15). Excavation of the unit began in the area defined by the rocks. By the end of the first excavated level, the excavation had exposed planking which bounded the rocks on the north and south. Subsequent excavation exposed a wooden "box" which measured approximately four and a half feet square and contained the rocks. The original boundaries of TC AR were extended four to six inches to the west so as to expose the western wall of the wooden box feature. The deposits in the westernmost 34 to 44 inches of the box were excavated, exposing a profile of the deposits within it along the eastern edge of TC AR. Excavation of a small area outside the northeastern corner of the box enabled us to determine its dimensions and provided further data on the details of its construction.

The wooden walls of the box began at depths of two to seven inches below the TC AR datum. Since the deposits extended above the walls of the box and since the tops of these wooden walls were uneven, it would appear that the top of the box had originally been higher, being disturbed either by construction activities associated with the periodic episodes of rebuilding on Lot 26 , or by natural decay. The


FGG 15

## TEST CUT AR

EAST WALL


Figure 15. Test Cut AR

1. mixed tan sand and gray sandy silt
2. tan silt mottled with orange and gray sand
3. tan silt
4. gray*brown sand

4a. brown sand
5. tan silt
6. gray sand mottled with orange
7. orange sand mottled with tan silt
8. gray silt
9. tan sand with wood
10. mixed orange, tan, and brown silt
11. orange sand mottled with gray
12. gray silt
13. gray sand
14. tan silt mottled with orange sand and gray silt
15. heavily organic gray silt
bottom of the walls of the box extended to a depth of 30-32 inches below the test cut datum. The feature was constructed of horizontally oriented sawn boards and did not have a floor. The west wall of the box consisted of three boards. The lowest board was seven to eight inches wide, the center one was 12-13 inches wide and the remaining portion of the topmost board had a maximum width of twelve inches. Photographs and field notes indicate that the north, south and east sides of the box were constructed of two boards. The topmost of the two boards on the east side of the box was one and one eighth inches thick with the lower board being one and one half inches thick. Unlike the wooden boxes excavated in Lots 13 and 15 , which were built of vertical boards carefully fitted together with tongue-in-groove construction, these boards were not fitted together but rested one atop the other. However, examination of the inner surfaces of the boards indicated rust stains at the top and bottom corners of each board. A square hole was associated with each of these rust stains, and in some cases rusted remnants of the nails which made these holes were found adhering to the boards. The rust stains were presumably made by angle brackets which were nailed to the boards and which served to hold them together.

The deposits in the box consisted of a dense accumulation of rocks (sandstone, schist and sedimentary rocks), bricks, and mortar. The soil matrix was described as brown sand and gray/brown and brown silt in the topmost $16 / 22$ inches of the
deposit and as gray sandy silt from this depth to the base of the box walls. The profile drawings show the deposits in the box dipping a maximum of seven inches below the walls of the box. The soil below the base of the feature walls was apparently the orange and reddish brown sandy silt excavated as context \#1186. The underlying deposits consisted of gray silt with a large number of wood fragments and other organic material.

A total of 32 sherds, 20 of which were dated, were recovered from the box fill. The dated sherds yielded a mean ceramic date of 1771.4. The ceramics included one sherd of 17th-century-type earthenware, two delftware sherds, one combed slipware, two white saltglazed stoneware, one sherd of Oriental Export Porcelain, 11 creamware and three pearlware sherds. The 17 th century earthenware, combed slipware, both of the white saltglazed stoneware and one of the creamware sherds were recovered from the first excavated context (cat. \#1081) which includes surface material which could possibly have been contaminated. Of the remaining ceramics, three pearlware sherds were recovered from the brown sand with mortar encountered in the uppermost portion of the box. The underlying gray silt contained only the oriental Export Porcelain sherd noted above.

The deposit beneath the level of the wooden box walls yielded seven creamware and two delftware sherds. An additional creamware sherd was recovered from the immediately-
underlying excavated context (\#1198) which included the base of this deposit. The data indicate that the material within the box was deposited during the latter part of the 18 th century, after the introduction of pearlware in the 1780 s . The presence of two pipe stem fragments with \#4 bores, one recovered from the brown sand and one from the basal deposit in the feature, also are consistent with a late 18th-century deposition of the box fill.

In addition to the rocks noted above, the box fill was characterized primarily by a high density of brick and mortar with low artifact and bone densities in both the brown sand and gray silt soil matrices. A moderate density of shell was also present in the gray silt. The orange and reddish brown sandy silt at the base of the deposit differed markedly from the above strata. While this deposit also had a high density of mortar, the brick density was dramatically lower, and the density of domestic artifacts and bone was dramatically higher. Twenty seven non-architectural artifacts and only one architectural artifact were recovered from this deposit.

The gray silt underlying the feature contained high densities of bone and vegetal material as well as wood and leather fragments, including portions of leather shoes. The majority of the vegetal material recovered consisted of cherry, walnut and peach. Hickory, and acorn were among other species present, and several fragments of coconut husks were also recovered. This deposit probably represents the river
bottom silts. Deposits identified as river bottom silt were encountered in $T C$ AS, immediately north of $T C A R$, at approximately the same elevation.

The differences in construction between the TC AR box and those excavated in Lots 13 and 15 indicate that these features had different functions. The morphology of the $T C A R$ box and the nature of the deposits within it suggest two possible functions. First, the box could have been installed and filled with rocks to serve as a structural support for a pillar or other architectural feature. With this interpretation, the deposits within the box would have been deposited at the time of its construction. This explanation does not account, however, for the differences between the basal deposit and the overlying portions of the box fill. A more likely explanation is that this feature was a privy which had been cleaned out after its period of usage. It is possibly that the privy pit stood open for a short time after it was no longer used and the basal deposit containing domestic refuse accumulated within it. The deposit of brick and stones filling the box would have been subsequently deposited when the structure with which the privy was associated was demolished. This may have been the same structure identified as structure \#4 in the discussion of TC AT.

Approximately three and a half feet separated the south wall of the wooden feature from the stone wall that marked the southern boundary of TC AR. The deposits encountered include
a number of thin strata and lenses consisting of orange, tan, brown and gray silts and sands consistent with the appearance of the late 17th landfill deposits in some portions of the site. The soil in the uppermost portion of the excavation was described by the excavators as consisting mainly of yellow-brown sandy silts to a depth of four to nine and a half inches, with gray/brown and gray/rust colored sand below this to a depth of 10.5-13.5 inches. At this depth it became apparent that an area adjacent to the wooden south wall of the feature had been disturbed by its installation. This area is indicated on the profile drawing as \#6, gray mottled sand. It extended to the base of the wooden feature and was excavated separately. A pit had seemingly been dug to install the feature, and the portion of the pit remaining outside the wooden walls was then backfilled.

The separately excavated material from the backfilled pit dug to install the feature yielded 36 ceramic sherds, 28 of them dated. These included one mottled-brown yelloware sherd. The manufacturing dates for this ceramic type are 1660-1750, but the type was most popular in the 18 th century. The other sherds consisted of 17 th century earthenwares, delftwares and one slipware sherd. The ceramic assemblage suggests that the feature could have been associated with the early postlandfill structure. It was located slightly north of the rear wall of the main portion of this structure, which was exposed in the southern portion of $T C N$ and $A R$. The feature would
have remained in use until the latter part of the 18th century, as discussed above.

The material recovered from the feature pit contained a high density of bone, artifacts and vegetal material. This may reflect the inclusion of redeposited river bottom silt in the pit fill.

The deposits which were encountered below 10.5-13.5 inches south of the disturbed area consisted mainly of tan, gray and gray brown silts mottled with orange silt in some areas to a depth of 17.5-21 inches, with dark blue/gray clayey silt being encountered below this to a depth of approximately 23-25.5 inches. This clayey material was apparently landfill, probably redeposited river bottom silt.

Due to a lack of time, the material below this level was excavated to a depth of approximately 38-39 inches without screening in order to expose the base of the feature. Photographs indicate that the stone wall may have continued somewhat below this depth. Why rot pouvded?

The profile drawings indicate that a deposit of organic gray silt began approximately two inches above the elevation of the base of the wooden feature wall. This appeared to be the same deposit of river bottom silt which was encountered beneath the feature.

The profile drawings and photographs suggest several possibilities regarding the construction of the stone wall, with the soil nearest the wall appearing to be different than
the soil further to the north. First, a wide builder's trench including the strata numbered 8,13 and 14 may have been present. However, it should be noted that the site map indicates that the $T C A R$ wall is aligned with the wall uncovered earlier in the excavation of TC N. There was no indication of a builder's trench in the latter test cut. It is also possible that a shallower trench (\#13 and 14 on the profile) was excavated in river bottom silts, represented by \#15 on the profile, to facilitate construction of the base of the wall prior to landfilling. Another possibility is that the strata indicated as \#5 and \#10, adjacent to the top of the wall, may have been associated with a reconstruction or repair episode. It should be noted that the base of the shallower wall exposed in TC AQ was at an elevation measured at only six inches below the base of stratum \#10 as indicated on the profile drawing. It is possible, therefore, that the wall exposed in TC N and AR was constructed at the time of the landfilling, with the top portion being rebuilt and made wider during a later construction episode.

With the exception of the separately excavated, disturbed soil adjoining the feature, a total of 114 sherds, 68 of them dated, were recovered from the TC AR excavations south of the feature. Three of these sherds were inconsistent with the identification of these deposits as 17th-century landfill. One of these, a sherd of 18th-century, brown glazed oriental Export Porcelain (manufacturing dates, 1720-1780) was
recovered from the gray/rust colored sand above the level at which the feature disturbance was recognized. This sherd could have derived from the pit dug to install the feature. One pearlware sherd and one creamware sherd were recovered from tan and gray mottled silt at depths below that at which the feature disturbance was separately excavated and consistent with strata \#5 and \#10 shown on the profile drawing adjacent to the stone wall. This would support an interpretation of the reconstruction of the top portion of the wall in the latter part of the 18th century. It is also possible that a portion of the material within the disturbed area adjacent to the feature was included with the adjacent strata and that these sherds actually originated in the disturbed area.

The yellow-brown sandy silt deposit was characterized by a higher brick/mortar density than the underlying strata while the gray/brown and gray/rust sand contained almost no brick and mortar with a high density of artifacts and bone. The tan, gray and brown silts also had a low building material density and a high ratio of non-architectural to architectural artifacts. The blue/gray clayey silt also had a fairly high density of domestic artifacts and a low density of building materials. Twenty vegetal fragments were recovered from this deposit, of similar types to those recovered from the river bottom silt beneath the feature. As noted above, the stratigraphy indicates that this deposit was probably
redeposited river bottom material.
There was a space of only some four-six inches between the north end of the wooden feature and the wall which marked the northern boundary of TC AR. This small area was excavated to a depth of approximately $18 / 20$ inches. The strata shown in the profile drawings appear to match up with the landfill strata excavated in TC AS north of the stone wall, which proved to be only one course deep. Although the topmost excavated stratum in this portion of $T C A R$ may have been associated with this wall, none of the artifacts recovered, which include only four dated ceramic sherds, are inconsistent with the identification of these deposits as the 17th-century landfill. A thin band of gray sand immediately adjacent to the wooden feature represents the backfilled pit dug to install the feature; it was also encountered south of the feature.

TEST CUT AS
Test cut AS was the northernmost of the three test cuts which formed the "trench" placed to test the deposits in Lot 26*. The northernmost boundary of TC AS was placed just south of the location of the southernmost wall of the "patio" which occupied the center of Lots $9 *, 10 *, 26 *$, and $27 *$. The south wall of TC AS was located slightly north of another east-west stone wall (Figures 16,17 ). This wall was exposed in TC AR. As noted in the introduction to this section, construction equipment had removed some of the deposits

EAST WALL
SOUTH WALL


Figures 16-17. Test Cut AS

1. coarse reddish-brown sand
2. brown sandy silt mottled with yellow
3. red silt mottled with yellow silt and flecks of red brick
4. light brown sandy silt flecked with charcoal

4a. light brown sandy silt flecked with charcoal and mottled with gold silt
4b. brown sandy silt flecked with charcoal
5. burned wood and metal
6. mottled brown and rust silty sand
8. mottled rust, tan, and brown sand

8a. tan sand
8b. mottled gray silt and rusty tan sand
9. gray-black sandy silt with charcoal
10. gray silt flecked with charcoal and brick
12. orange-rust sand
13. red sand
14. gray sand with leather
15. gray-rust sand and decayed wood
16. gray sand flecked with charcoal
17. reddish-gray sand
18. light gray silt and decayed wood
19. gray sandy silt with organic debris
20. grayish-red sand
underlying the most recent Lot 9 basement floor south of the "outbuilding" foundation prior to the archaeological excavations in this portion of the site. Transit elevations indicate that at the location of TC AS, excavation began approximately three feet blow the elevation of the basement floor.

The topmost one to five inches of the TC AS deposits consisted of a hard packed reddish brown sandy silty overburden formed after the exposure of the excavation surface. The landfill deposits began immediately beneath this overburden. It should be noted that the surface elevation at the location of TC AS is about the same as that at which the landfill deposits were encountered in TC N, located six feet north of TC AS and excavated before the removal of the deposits immediately underlying the Lot 9 basement floor. This is consistent with the interpretation of the deposits in TC AS below the overburden as landfill. As shown on the TS AS profiles, the landfill deposits at this location sloped downward from east to west, rather than from north to south as was the case in TC N.

The landfill deposits to a depth of roughly 18-24 inches below the TC AS datum contained pieces of what appeared to be burnt wood and sheets of rusted metal. The topmost portion of these deposits was browner and sandier while the material underlying was grayer and siltier. Immediately underlying this silty deposit was a stratum of reddish and orange/rust
colored sands, followed by a deposit of gray siltier sand. The gray silt which underlay these deposits probably represents the river bottom silt underlying the landfill. The river bottom silt was encountered in $T C N$, approximately six feet north of TC AS, at an elevation approximately one to one and a half feet lower than the top of this silt stratum. This is consistent with the downward slope of the river bottom away from the Pearl Street shoreline. This silt deposit was excavated only in the southernmost one foot of the test cut in order to expose the profile, and only the upper portion of this deposit was screened. The water table was encountered at 46 inches below the test cut datum and excavation terminated in the silt deposit several inches below this level.

The uppermost landfill deposits yielded 66 and 64 dated ceramic sherds, respectively, from the brown sandier and gray siltier material. The major difference in the ceramic assemblages from the two deposits is the presence of a greater percentage of combed slipware in the upper portion of the first deposit. However, the dates of manufacture of this ceramic type are not inconsistent with the identification of this deposit as landfill. Another difference in artifacts is the higher NA/A ratio in the siltier material, due mainly to the lower density of architectural artifacts in this deposit. Neither deposit had a particularly high density of building debris or faunal material. The deposits of red and
orange/rust sandy landfill which underlay this material yielded only 12 artifacts (a density of only 1.9/cu. ft.), only six bone fragments, 243 grams of shell, and no building material. Only one ceramic sherd (undatable) was present in this deposit. The immediately underlying deposit of gray silty sand was characterized by the presence of 150 pieces of leather, resulting in an artifact density of 70.7 and an NA/A ratio of 41.4 for this deposit. Only 10 dated ceramic sherds were recovered. The excavated portion of the underlying gray silt differed from the landfill deposits in this test cut mainly by having a higher density of building materials. No leather and only 14 dated ceramic sherds were recovered from this soil. However, only a small sample of this material was excavated. None of the excavated material was inconsistent with the identification of this stratum as either landfill or river bottom silt.

The northern portion of $T C$ AS was adjacent to a fieldstone wall which underlay the southern wall of the Lot 9 "patio." Photographs show two large stone blocks on top of this wall. These blocks were set back somewhat from the south face of the fieldstone wall and are not shown in the TC AS profiles.

The base of the wall was reached in the sandy landfill deposits which overlay the river bottom silt in TC AS. It is unclear whether or not TC AS includes deposits which were associated with the construction of this wall. The excavators
noted a thin band of red sand immediately adjacent to the wall and extending only some three-eight inches from it. This band began approximately 12 inches below the test cut datum at the top of the wall) and ended at approximately 20 inches, above the base of the wall. This sand was excavated separately. It contained only two dated ceramic sherds of types (delftware and slipware) also found in the landfill deposits. No other diagnostic material was found in this soil. Photographs of TC AS show a deposit of red sand in the east wall profile which is cut through just north of the south wall of the test cut. This red sand is shown in the west wall profile as being cut off close to the stone wall. This red sand would correspond to the deposit indicated as \#13 on the profile drawings. It is possible that this indicates a trench dug for the construction of the stone wall which was then backfilled with the same material. On the other hand, the difference between the red sand and the orange/rust colored sands, both of which overlay the red sand at the same depth close to the stone wall, could be due to the deposition of various lenses of landfill at this location. The overall profile morphology does not strongly indicate the presence of a wall trench. It should also be noted that none of the artifacts recovered from any of the deposits in TC AS are inconsistent with the period of deposition of the landfill.

The elevation of the top of the fieldstone wall is approximately two and four tenths feet below the top of the
brick south wall of the patio. This brick wall was apparently removed prior to excavation of TC AS. It is possible that the stone blocks atop the fieldstone wall served as a footing for the brick patio wall. The fieldstone wall may have been the wall of the earlier structure which was reused as a base for the rear wall of the outbuilding. The fact that the wall of a cistern underlay the northwest corner of the patio (see TC AN) makes it unlikely that the fieldstone wall was constructed specifically as the foundation of the patio. While this stone wall is apparently earlier than the brick wall of the patio it is not clear whether this wall was associated with the period of landfilling in Lot $26 *$, as were the walls encountered in $T C N, A T$ and $A R$, or whether this wall was constructed at a later time.
test cut AP
During the initial exploratory phase of the project, Backhoe Trench 12 was excavated towards the rear of the eastern portion of Lots 10* and 26*, approximately seven feet east of the eastern brick wall of the Lot 9 patio. We noted the presence of a feature in the west profile of the backhoe trench. The feature appeared to be bounded by decaying wood and filled with coal and cinder. The deposits within the feature were tested by TC AP, which was located so that its eastern boundary coincided with the west wall of Backhoe Trench 12. Test Cut AP extended three feet west of this point and extended four feet north-south (Figures 18,19).


Figures 18-19. Test Cut AP

1. overburden
2. yellowish mortar mottled with gray and charcoal
3. pinkish-white sand
4. charcoal
5. grayish-brown sand with coal
6. hard-packed gray sand with mortar and charcoal
7. red brick
8. gray silt

8a. gray silt and brown sand
8b. mortar and gray silt

Backhoe Trench 12 had apparently grazed the eastern portion of the feature, the bottom portions of two vertical boards were exposed in the backhoe trench profile in the southern portion of the area excavated as TC AP. The boards had been removed by the backhoe immediately north of this, exposing the deposits within the feature. Excavation of TC AP indicated that there were areas of rusted metal in conjunction with the boards. These may have represented metal bands or straps which served to hold the vertical board sides of the feature together. It also appears that brick and mortar were poured outside of the cooperage to further support the feature. We attempted to follow the decaying wood stains on the surface adjacent to TC AP in order to determine the extent of the feature. However, the presence of a substantial amount of overburden and large stone slabs on the surface (and a lack of time) made it difficult to fully accomplish this.

South of the southern boundary of TC AP the feature curved to the west. Its southernmost extent appeared to occur approximately four and a half feet south of the southern boundary of TC AP. We were able to follow this southern portion of the feature wall to a point approximately five feet west of the backhoe trench. It is probable that the western portion of the feature was cut off by the construction of the patio and the northern portion may have been disturbed by the construction of a brick wall and associated stone slabs immediately north of the location of TC AP. It is difficult
to determine the size of the feature from the portion of the feature wall which was exposed. However, it appears to have been approximately oval in shape. Its east-west extent may have been approximately eight to ten feet and its north-south extent 12-15 feet.

The excavation of TC AP began approximately one to one and a half feet beneath the elevation of the most recent Lot 9 basement floor. The topmost two to four inches of excavated material appeared to consist of overburden deposited during clearing operations. The feature deposits were encountered immediately below this level. It should be noted that an area of stone slabs associated with a brick wall were encountered in the northern part of the test cut. The feature deposits began beneath these slabs. The brick wall appears to connect with the east wall of the patio, and is probably part of the same construction phase. The relationship between the slabs and the feature suggests that the feature was associated with the previous construction phase. One of the slabs in the northeast corner of TC AP was removed and excavation continued beneath it. However, the slab in the northwest portion of the test cut was too large and heavy to remove manually. This slab was left pedestalled, so that a portion of the feature deposits within the boundary of the test cut measuring approximately 14 inches north-south and 15 inches east-west remained unexcavated. The remaining portion of the feature contained about three feet of deposits. The floor of the
feature immediately beneath the deposits was reached at a depth of some 42 inches below the excavation surface and 33 inches below the test cut datum, which was located on the slab in the northwest corner.

The deposits within the feature were described by the excavators as a dark grayish brown silty sand with coal to a depth of approximately four to six inches below the test cut datum and as a mixture of grayish, yellowish and rust brown silty sand with coal below this. The test cut profiles, and the profile drawn of the west wall of the backhoe trench in the area of TC AP prior to the excavation of the test cut, indicate the presence of lenses of dark gray/brown, brown/black, and rust colored silty sand within the feature.

The northeast corner of the test cut contained an area of rust colored silt and decayed mortar. This apparently represents a portion of the mortar surrounding the feature outside its wooden sides. This material was excavated separately below a depth of nine inches.

The deposits within the feature yielded 426 ceramic sherds, 401 of which have been dated. Except for a single sherd of delftware, all of the dated sherds consist of creamware (203 sherds), pearlware (15 sherds), whiteware (178 sherds) and four sherds of 19 th century brown bodied stone ware. The calculated mean ceramic date for these sherds is 1820.4. However, it is likely that the actual date of deposition was later than this. First of all, the ceramic analysts
noted that the creamware recovered from this deposit appeared to be 19th century "CC" ware (see Miller 1980) while other of the ceramics appeared to be similar to the 19 th century ceramics classed as "Opaque Porcelain" (see Praetzellis et. al. 1980). The analysts noted that the ceramic assemblage appeared to date to the period c. 1840-1850. Furthermore, four of the whiteware sherds were transfer printed with colors (e.g. brown, purple) not widely used until the 1830s. In addition, three sherds with manufacturer's marks were recovered from context \#1114. One of these had the fragmentary impressed inscription "...AD...ONE." The two others had a blue stamped mark bearing the name, "Ridgway." Both of these sherds show the left portion of the mark which consists of a depiction of a large building, apparently a pottery kiln, with the name "RIDGWAY" in a "ribbon" type border underneath. One of the sherds also has the inscription "IMPROV...GRANITE..." in the space between the kiln and the ribbon. Godden (1964:535) illustrates this mark. In the example shown by Godden the words "Improved Granite" are replaced by "Patent Iron Stone China." However, another mark shown by Godden from the same pottery uses the phrase "Improved Granite China." The mark is that of the Staffordshire potters Ridgway and Morley, Broad Street, Shelton Hanley. In the example shown by Godden, the words "and Morley" were included in the mark in the portion of the ribbon not present in the TC AP specimens. The mark is dated by Godden to the period 1842-1844.

Thus, it seems that the feature was filled after 1842. This date accords with the ceramic analyst's impression of the entire ceramic assemblage noted above.

Of the approximately 170 bottle glass fragments recovered from this deposit, all 136 of the datable fragments were manufactured during the 19 th century.

The feature deposit yielded a total of 1449 artifacts, with a high artifact density of $46.9 / \mathrm{cu} . \mathrm{ft}$. The artifacts were divided fairly evenly between architectural and non architectural artifacts (NA/A=1.1) with most of the architectural artifacts consisting of window glass. One hundred and forty two bone fragments were recovered, but only 42 grams of marine shell. The deposit also yielded 15 peach pits. It is interesting to note that only one smoking pipe fragment was recovered from the deposit. While 15,255 grams of brick were recovered, the density was not especially high, 494 grams/cu.ft. As was expected from the appearance of the deposit a large quantity of coal, cinder and slag was recovered. Most of this material was burned. Two thousand eight hundred and eighty grams were classified as coal (unburned) and more than 73,000 grams as cinder and slag. Two thousand seven hundred and eleven grams of wood charcoal were also recovered.

The material within the feature may have been deposited over a period of time rather than in a single episode of dumping. This is suggested not only by the appearance of the
deposit but by variations in artifact densities with depth. There also appears to be some variation in the ceramic assemblage, with the material toward the top of the deposit having a greater percentage of creamware than whiteware, with material toward the base of the deposit having a preponderance of whiteware. Since the creamware consists of 19th century "CC" ware, this does not necessarily have temporal significance.

The mortar-y deposit excavated in the northeast corner of TC AP and associated with the construction of the feature contained mainly brick and mortar, with only 12 artifacts being recovered. These included three dated ceramic sherds, all pearlware (one annular-decorated). Although this is a small sample, it contrasts with the small percentage of pearlware within the feature and suggests that the excavated material was in fact associated with the construction of the feature. The presence of the annular pearlware sherd would date this to after the introduction of this ceramic type $c$. 1790.

After the deposit within the feature was excavated, we removed its wooden floor. The floor was constructed of wooden boards approximately one inch thick, oriented north-south and connected with wooden dowels inserted into holes drilled horizontally into the edges of the boards. One east-west oriented board overlying the floor boards was exposed within the boundaries of TC AP. It was attached to the floor boards with metal bolts, and apparently served, with others outside
the test cut boundaries, to hold the floor together.
The wood was removed within the bounds of TC AP except for an area of approximately six inches extending outward from the west and south walls of the test cut. Roughly three inches below the wooden floor (floor layer \#1) was another floor consisting of a single layer of brick (floor layer \#2). The material between the floors was described as mortar and yellow brown silty sand, which may represent decayed mortar. There was little besides mortar in the material. Eight domestic artifacts were recovered, including four glass fragments, a straight pin and three ceramic sherds, two of which were creamware. The analysts did not note whether this was "CC" ware, or the earlier form of creamware. One of the creamware sherds was transfer printed. If this were the earlier form of creamware, rather than the later "CC" ware, it would not have been manufactured after 1815. This would be consistent with a late 18th-early 19th century date of construction for the feature.

After the brick floor, which was bordered by mortar and underlay the wooden sides of the feature was removed, an underlying "floor" composed of stone set in mortar (floor layer \#3) was exposed. The material removed with the brick floor yielded one pearlware sherd. This may have come from the material beneath the floor or from the mortar bounding it. The pearlware sherd was sponge decorated, a type of decoration more frequently found on whiteware. The stone and mortar
floor (\#3) was approximately five to six inches thick and beneath this were an additional two courses of brick set in mortar (floor layer \#4). The mortar used in the construction was quite unusual in that it contained not only shell, but straw, cotton, and a coarse buff-colored fabric.

Before excavation of TC AP was completed, the unit was extended to the east to permit excavation of the material below the floor of Backhoe Trench \#12. This permitted us to more fully observe the details of feature construction, as shown in the south wall profile of TC AP. Soil removed from the test cut extension was not screened. It appears that, as observed in the northeast corner of the original TC AP boundaries, brick and mortar had been laid against the outside of the wooden walls of the feature. The brick and mortar extended some six inches below the wooden sides of the feature and extended slightly beneath the feature itself, abutting stone floor layer \#3. This brick and mortar rested on a base of cut stone which abutted the base of floor layer \#3. The lower brick floor layer \#4 only underlay the feature and did not extend outside its boundaries.

A portion of the brick and mortar beneath the wooden feature sides was excavated within the original bounds of the test cut. The excavators noted the presence of brown sand, possibly decaying mortar, among the bricks. This material yielded three dated ceramic sherds. These include one sponged pearlware sherd of the type noted above, one creamware sherd
and one 17 th century-type green/ginger glazed redware which may have derived from the underlying deposit. The ceramics recovered from the brick/mortar supporting the walls of the feature support the inference of an early-19th-century date of construction.

The soil encountered immediately beneath the feature floor consisted of brown, red and gray sand lenses. The small portion of this material which was sampled yielded eight ceramic sherds. Six of these were non-dated redwares and two were delftware. Two smoking pipe fragments (one with a \#6 bore) and a black chert gunflint were also recovered. The artifacts are consistent with identification of this deposit as a portion of the late 17 th-century landfill. Below this stratum, we encountered gray clayey silt which appeared to slope downward toward the south. The only ceramic recovered was a single sherd of delftware. A lump (1051 grams) of coral was also recovered from this deposit. The unscreened portion of this stratum from the extension of $T C A P$ east of its original boundary yielded another delftware sherd, as well as a nearly complete smoking pipe with a rouletted rim and \#8 bore. A shoe sole was also recovered. These artifacts are consistent with the identification of this deposit as the prelandfilling river-bottom silt.

The feature sampled by test cut AP most likely functioned as a large cistern, probably serving the structure which stood on Lots 26* and 27*, fronting on Water Street, in the 19th
century. The feature was of cooperage construction, supported by a brick and mortar "wall" and underlain by a thick floor to prevent leakage and to support the weight of the water. It should be noted that the remains of a cistern which probably served the boarding house(s) which fronted on Pearl Street (Lots 9* and 10*) during the same period was encountered in TC AN. The floor of the Lot $26 * / 27 *$ cistern was approximately three feet below the elevation of the Lot 9*/10* cistern floor. The period of use of the cistern excavated by TC AP apparently ended before the demolition of the structure with which it was associated. This probably occurred after the introduction of running water to lower Manhattan. Thus the major fill within the structure consisted of domestic trash and furnace debris from the boarding house(s). It is likely that the material in the feature was deposited within a relatively short period of time, between the introduction of running water and the demolition of the structure with which the feature was associated.

TEST CUT AU
Test Cut AU, measuring three by three feet, was placed so as to test the deposits within the Lot 9 patio area. It was located just north of the Lot $10 * / 26 *$ boundary line and its eastern boundary was less than one foot west of the east wall of the patio. Approximately one and a half feet of deposits had been removed between the latest Lot 9 brick floor and the surface from which the excavation of TC AU began.

Examination of profile drawings and photographs of TC AU (Figures $20,21,22,23$ ) indicates that the basal portion of the wall of a circular brick feature had at one time been present in the western portion of the area included within the excavation unit. The northern profile shows three courses of brick in the westernmost 18 inches of the north wall of TC AU, beginning at a depth of eight inches below the test cut datum and ending at 16 inches. Photographs indicate that this wall curved outward slightly. The remnant of this wall protruded some eight inches southward into the excavation unit. A single brick protruding from the south wall of TC AU at a depth of 12 inches may have been associated with the wall of the feature.

There were a number of rocks present in the west portion of the unit and a row of these is shown in the western profile at approximately $19-25$ inches below the TC AU datum. Since this feature did not have a floor, it may have functioned as a privy.

A second feature was also uncovered in TC AU--a U-shaped brick structure in the center of the unit. The tops of the bricks forming the sides and back of the "U" were encountered 12-15 inches below the test cut datum. The structure was oriented so that it ran from slightly north of west to slightly south of east. It was approximately two feet wide as measured on the outside of the arms of the "U" and about 12 inches wide inside the arms. The westermmost extent of the


Figure 4. Test Cut AN

1. brown sandy silt with rubble
2. wood stain
3. grayish-tan clay
4. red-brown sand mottled with gray and yellow silt
5. red sand
6. dark gray silt

Figures 20-23. Test Cut AU

1. light brown sand with brick fragments
2. dark brown and gray sandy silt with brick, stone, and charcoal
3. decayed wood
4. light brown silty sand
5. reddish-brown sand mottled with gray
6. mortar with light brown sand and brick
7. pocket of light brown sand
8. gray silt with decomposed shell and charcoal
9. reddish-brown sand
10. gray silt with decomposed shell and charcoal
11. light gray sandy silt with some red sand

11a. light gray sandy silt with more red sand
12. dark brown sandy silt
13. pocket of gray sand
14. red-brown sand mottled with gray
15. gray sandy silt with mortar and shell
16. charcoal with gray sand and shell
17. reddish-brown sand
18. gray silt with some sand
19. gray-brown silty sand with mortar and shell
base of the "U" was two feet west of the east wall of the excavation unit. At a depth of approximately $21 \frac{1}{2}$ inches a brick trough covered with mortar was exposed between the arms of the "U," running eastward to the east wall of the test cut. The trough is shown in the TC AU east wall profile. From its morphology, we can infer that this feature probably functioned as a catch basin and drainage trough.

The most likely explanation of the stratigraphy encountered in TC AU is that a pit was dug sloping downward from west to east, beginning just east of the TC AU west wall, resulting in the removal of the east wall of the circular feature. This pit was dug to install the catch basin and trough. Both of the features were probably associated with building phases which preceded the one associated with the patio. When the building associated with the circular feature was demolished, the rocks may have been deposited in the bottom of the feature. In association with the construction of the next building phase, the pit was dug to install the catch basin and drainage trough. When the building associated with the trough was demolished, the material which overlay both the trough and the stones at the bottom of the feature was deposited. Both of the prior building phases probably preceded the construction of the patio. The floor of the patio was probably located above the level at which excavation of TC AU began. Since no floor of this patio was encountered during backhoe clearing operations, it probably was removed
during later construction episodes.
The uppermost two to five inches of the excavated deposits consisted of brown sandy soil which was most likely disturbed prior to the beginning of excavation of TC AU. The underlying soil was described as "brown silty sand with black coal-y areas" to approximately 9.5-14 inches and "light brown silty sand with black coal-y areas and mortar" below this to approximately $17 / 19.5$ inches. Both of these deposits were characterized by high densities of brick and mortar, and except for a slightly higher density of building materials in the lighter soil, the artifactual content of the two soil types was similar. These deposits yielded approximately 7500 grams of coal. Among the non-architectural artifacts recovered were two fragments of a circular blue glass, multifaceted bead, and a plummet-shaped piece of dressed stone (for jewelry), pink/light gray in color, recovered from the base of the lighter soil. These deposits yielded 37 dated ceramic sherds, of which 16 were whiteware and two, 19th century yelloware (initial manufacturing date--1820) Ten of the sherds were pearlware, five of which were spongedecorated, a type also recovered from TC AP. The other sherds included three delftware, two monochrome slipware, two creamware and one Nottingham-type gray salt glazed stoneware. The mean ceramic date for these sherds is 1820.5 for the upper part of the deposit and 1804.7 for the lower part. The combined mean ceramic date is 1813.7. However, the presence
of the high percentage of whiteware and yelloware, as well as the sponge-decorated pearlware, suggest a later date of deposition.

The base of the deposit in the extreme western portion of TC AU, within the demolished circular feature, was excavated separately between $18.5 / 19.5$ and 21 inches below the TC AU datum. Only two dated ceramic sherds were recovered. One of these was pearlware and the other French delftware (manufacturing dates, 1775-1825). The material recovered was largely brick and mortar, with a few pieces of window glass and metal. The nature of this material is consistent with the identification of the deposit as demolition debris deposited after the period of use of the feature.

Four dated ceramic sherds were recovered from the soil associated with the removal of the brick trough and catch basin. One of these was creamware, two pearlware and one European-style overglaze decorated oriental Export Porcelain (manufacturing dates 1750-1840).

The soil excavated adjacent to the catch basin and trough before its removal, and below the feature after its removal consisted of brown and gray silt. This soil may have filled the pit dug for the installation of this feature. This soil yielded 10 dated sherds. Nine of these were delftware and one was Oriental Export Porcelain. It is possible that this soil is redeposited landfill. That is, the landfill may have been excavated and then backfilled in the process of constructing
the feature. It should be noted that this material did not contain 17th-century earthenwares, which were present in the excavated sample of the underlying landfill/river bottom silt deposits. The difference in the two deposits may, however, be due to sampling error.

The soil excavated beneath the deposits within the circular brick feature in the west wall of TC AU consisted of reddish-brown sand. The stratigraphy suggests that this may represent the late 17 th-century landfill. This soil was nearly completely sterile. One delftware sherd was recovered from the deposit.

After the red sand in the west part of TC AU and the gray silt underlying the catch basin and trough were removed, the soil within the entire area of TC AU consisted of gray sandy silt with charcoal and shell. Eleven dated sherds were recovered from this deposit. Nine of these were 17 th centurytype earthenwares and two were delftware. This stratum represents either the landfill or the pre-landfill river bottom silts. The stratum contained high densities of bone and marine shell.

## LOTS 9\&/26*/27*--SUMMARY

The Livingston papers contain an agreement between Livingston and Capt. Teunis DeKay dated October 6, 1696 which is relevant to the earliest events on Lot 26 * as well as Lot 10*. According to the agreement

The sd. Capt. Teunis DeKay doth promise and engage to fill up the sd. Livingstones Lott with sand or other
earth which lyes opposite to the house that Mr. Lurting lives in and the house of Andries Teller which Lott contains in bredth Six \& forty foot \& two inches English measure and in lenth from the street to the dock being about one hundred \& six \& thirty foot or thereabouts.

The said Lot is to be filled up as high as the Dock now is, the sd. Livingston is to lay the foundation of both his houses and kitchin that is of his house toward the street this fall and the (other) towards the Dock next summer.

The sd. Capt. DeKay is to fill up hour foot between the dock and the wall of his house the whole bredth with mudd putting boards between the dock and sd. mudd to klipstin but the sd. Livingston is to furnish the boards.

This agreement tells us several things. First although some previous filling may have been done by the previous owners of the lot, the agreement envisions practically the entire width of the block as being filled by DeKay. Thus, there would not necessarily have been a fill retaining structure at the location of TC $N$, as we expected, based on the terms of the water lot grants. The agreement also indicates that two houses were to be built on the filled land. The first, "toward the street" is the house whose foundation walls were exposed by our excavations on Lots 10* and 11 (see below). The second house, apparently built shortly after the first, was the house "towards the Dock." The west wall of this house was apparently the fieldstone wall exposed by TC $A T$ and AQ. The north, or rear wall of the house was exposed in TC AQ and $N$. This wall was cut off just east of the TC N location by 20 th century construction, but it must have continued eastward into Lot 25 , which was part of the Livingston lot. During the last phase of the excavations,
after the excavation of TC $N$ was completed, backhoe clearing exposed the top of another north-south fieldstone wall just west of the location of TC N. This was apparently the wall of the kitchen extension of the house, the morphology of which was apparently the same as the Lot $10 * / 11$ house. This wall would have also extended to the east into Lot 25 . It would appear that the depths of the kitchen extensions of both houses were the same.

The agreement indicates that the walls of the early houses served also to hold the fill. The walls were built first and then the fill was deposited. The archaeology on the north side of the block confirmed this and the results of excavation of $T C N$ and $T C A R$ suggest that the walls of Livingston's Water street house also served to retain fill.

The agreement indicates that the second house was to have been constructed in the summer of 1697. The 1699 tax lists suggest that Miles Forester was a tenant in this house and a letter from Forester to Livingston dated in that year complains about the unfinished condition of the house. Livingston's will dated 1710 leaves this house "on the dock fronting the East River" to Johanna Van Horne.

The wooden "privy" excavated in TC AR may have been constructed during the period of occupation of this house, although it was apparently installed after the filling was completed. The privy was located just north of the rear wall of the main portion of the house and west of the kitchen
extension.
The fieldstone wall which appeared to underlie the south wall of the patio in Lot 26* may have been the foundation wall of an outbuilding associated with the period of Livingston's ownership of Lots 10* and 26*.

The fate of the Livingston house is uncertain as the 1706 tax records refer to Livingston's sheds and backhouses" on Lots 25 and $26 *$, and the larger structure does not seem to be shown on the 1717 Burgis view. By the time that stephen Bayard acquired Lot $26^{*}$ in 1734, the larger Livingston structure was apparently no longer standing since Bayard's purchase did not include Lot 25 . It could be that portions of the Livingston foundation were reused, however, and it is possible that the wooden privy in TC AR was constructed in the early 18th century, after Livingston no longer owned the lot.

A 1784 deed refers to a "gangway" in common on the east side of Lot $26 *$, and it is possible that a similar "gangway" was located between the structures on Lots $26 *$ and 27*. The trough uncovered in TC AQ, apparently associated with an 18 th century structure, may have been located in such an alley.

The early-mid 18th century structures which stood on Lots 26* and 27* seem to have been demolished in the latter part of the 18th century or early years of the 19 th century. The feature whose basal portion was uncovered in TC AT was associated with a late 18 th century structure. Its position with respect to the location of Water street indicates that
this was probably not a "backyard" feature, but rather was located either in an alley between Lots 26* and 27* or possibly in the basement of a structure. This structure may date to the period of ownership of the lot by John Oothout, who bought the property c. 1785.

Debris from the demolition of an 18th-century structure apparently was used to fill in the wooden box in TC AR, and the trough in TC AQ. The construction of the next structure on these lots probably involved the construction of the Lot 26*/27* "boundary wall," and perhaps the reconstruction and reuse of the rear wall of the late $17 \mathrm{th} / \mathrm{early}$ 18th structure in Lot 26*. This structure was probably the one which served as the Varick residence until 1819. The brick floor uncovered at the location of TC AQ may have been associated with this building, as it was not found in TC AT, in Lot 27*. The Lot 27* structure of this period is probably the one occupied by Elting and Manley from the 1790 s through 1820.

The large cistern sampled in TC AN seems to date to the period when the Lot $9 *$ and $10 *$ structures were combined. The documentary research indicates that two boarding houses on these lots were operated under joint management from 18121824, before being combined into the Pearl Street House in 1824. While this cistern almost certainly served the Pearl Street House, the ceramics recovered from below its floor suggest the possibility that it was constructed during the preceding period when the two boarding houses were under joint
operation.
While Lot 26 was apparently incorporated into the Pearl Street house at its inception in 1824, the documentary research indicates that the structure on Lot $27 *$ was not incorporated into the Pearl Street House until the early 1830s. It seems that the large cistern tested by TC AP may have been constructed before the incorporation of the Lot 26* structure into the Pearl Street house, but it almost certainly served the latter establishment. The feature exposed in the western part of TC AU, presumably a privy, may have been constructed during the period of use of the cistern, but more likely it dated to the preceding period of construction. The "drainage trough" exposed in TC AU may have actually served to channel water into the cistern.

The wood floor exposed in the profile in the southern portion of Lots 26* and 27* suggests that the buildings on lots 26* and 27* were modified, with the construction of a common basement floor, after these structures became part of the Pearl Street house in the early 1830s. Apparently the Pearl Street house consisted of two separate structures, one fronting on Pearl Street and the other on Water Street, with the two large cisterns serving the two respective buildings. At this time the rear wall of the building fronting Pearl Street would have been north of the location of TC AN and the rear wall of the Water street building would have been south of the location of $T C A P$, perhaps the wall shown on the map
as (A6). There would have been a large backyard area between the two buildings.

The documentary research indicates that after the fire of 1835, the Water Street buildings may not have functioned as part of the Pearl Street House. However, the large backyard area must have remained, as we know that the TC AP cistern probably continued in use into the 1840s. The Pearl Street House property was sold c. 1840 and the buildings were apparently once again operated as a hotel. It is likely that the period of use of the two cisterns ended following the availability of piped-in water after the completion of the Croton Aqueduct in 1842. Since the large backyard areas were no longer needed for cisterns and privies, a reconstruction of the buildings probably took place at that time. The rear walls of the structures fronting Pearl and Water Streets abutted with the open patio area being left in the center of Lot 9. The Perris Atlas dated 1855 still shows a courtyard in the center of the block which is approximately the same width as the patio but only about half as long. This indicates that further alterations to the structures on Lot 9 had probably occurred after the change in ownership of the lot which occurred in 1852. The final building phase probably occurred subsequent to the sale of Lot 9 to New York Warehouse in 1862. Construction of the common brick basement floor probably dates to this period. The 1867 Dripps map shows a single structure on the lot.

## CERAMIC DEPOSIT--LOT 27*

TEST CUT AO, SHOVEL TEST 16, SHOVEL TEST 22
During the exploratory phase of the project, Shovel Test (ST) 16 was placed in Lot 27 * approximately five feet west of the Lot $27 * / 28 *$ boundary wall, in line with the stone wall uncovered in TC $J$ in Lot 28. The objective was to determine whether the stone wall extended eastward into Lot 27* (Figure 24).

At the time ST 16 was excavated, clearing operations had removed the brick floor of the latest building in Lot 9, a large hotel which stood on the former Lots 9*, 10*, 26* and 27*. The shovel test was placed just south of the point at which the floor was still undisturbed so that the north profile of ST 16 shows this floor. Because of the clearing operations, excavation of ST 16 began some 12 inches below the level of the brick floor.

Shovel Test 16 did not encounter the stone wall uncovered in TC J. However, it did reveal a dense deposit of ceramics in a matrix of red/light brown sand. The shovel test, which measured approximately two by two and a half feet, yielded a total of 19,062 ceramic sherds, discussed below in further detail. In addition, the western part of the shovel test encountered a number of stones which seemed to be part of a wall. There also appeared to be a stone wall in the eastern portion of ST 16. The ceramic deposit was excavated to its base at a depth of 30 inches below the brick floor.



FIG 24

TEST CUT AO


Figure 24. Test Cut AO

1. brick floor
2. reddish-brown fine silty sand
3. yellow sand (decomposed mortar)

3a. gray-brown silty sand
4. light gray-brown silty sand
5. charcoal
6. light brown silt
7. light brown sand with mortar

8, light brown silty sand
9. reddish-brown sandy silt
10. light brown sandy silt
11. dark brown silt
12. rust brown sand
13. gray-brown sandy silt
14. hard-packed red (decomposed rock?)
15. brown sandy silt with brick and stone

During the mitigation phase of the project, we decided to obtain a larger sample from this deposit. Therefore, TC AO, measuring four by six feet, was placed so that the area excavated as ST 16 was located within the bounds of the test cut, in the east central portion.

The northernmost one and a half feet of TC AO began at the top of the brick floor. The excavation of the southernmost four and a half feet, in the area in which the brick floor had previously been removed by the backhoe, began approximately 16 inches below the brick floor.

Excavation of the northern portion of TC AO began with the removal of the brick floor and underlying red/brown sand. At a depth of about six/ten inches below the brick floor, a stratum of light brown silty sand and decayed mortar was encountered. Below this stratum, at a depth of approximately 10/12 inches below the brick floor, we encountered the remains of a burnt and decayed wooden floor. A stratum of light brown sandy silt with mortar underlay the burnt wooden floor followed by a stratum of tan coarse sand beneath which was a layer of dark brown silty sand with rocks. As this level was excavated, it became clearer that the rocks were concentrated in the western part of the test cut, and it was these rocks which had been encountered in ST 16.

In the eastern portion of TC AO, a deposit of red/brown sand was encountered below the dark brown sand at a depth of 18/20 inches below the brick floor. This soil contained the
major portion of the ceramic deposit. The red/brown sand continued beneath the rocks in the western portion of the test cut at $23 / 24$ inches below the brick floor. Beneath the red/brown sand a small lens of black sandy clay, also containing ceramics, was encountered in the northeast corner of the test cut. The red/brown sand and clay lens ended at approximately $28 / 30$ inches beneath the brick floor. Beneath this deposit we encountered a mortar floor. At this point we had reached the base of two low stone walls which bordered TC AO on the east and south sides. Each of these consisted of two courses of cut stone slabs. The walls ended at the level of the mortar floor.

We removed the mortar floor in the northern portion of TC AO. A one-half to one inch-thick deposit of hard packed reddish material, possibly decomposed stone, which is shown in the north wall profile was removed with the mortar. Beneath this, we encountered a two inch-thick deposit of brown sandy silt. The soil below this consisted of red sand and a light and dark brown mottled silt, which was not excavated. Examination of the west wall of TC AO indicated that a thin deposit of ceramics (several inches in thickness) continued to the west. A probe 14 inches west of the west wall of TC AO indicated that the deposit extended to this point. A probe south of the southern stone wall of TC AO confirmed that the stone walls bounded the ceramic deposit on the east and south.

The north profile of TC AO indicated that the ceramic deposit, approximately 11 inches thick at this location, continued to the north. Therefore, we placed ST 22 north of TC AO, at first leaving a two foot baulk between TC AO and ST 22. Excavation of ST 22 involved the removal of the deposits above the ceramic deposit, and above the associated area containing rocks, as a single unit.

The ceramic deposit and the stone wall on the eastern side of $T C$ AO ended just north of the baulk (i.e. approximately two feet north of the northern wall of TC AO). The disturbed area with rocks in the western portion of $T C$ AO apparently continued northward into ST 22. This deposit in ST 22 yielded 312 ceramic sherds. However, the northeastern portion of ST 22 consisted of a deposit of reddish silt which was never part of the ceramic deposit. It is apparent from a photograph of the north wall of ST 22 that the darker silt with rocks and rubble in the western portion of the shovel test was intrusive into the earlier deposit of reddish brown silty sand. The southern portion of ST 22 and the northern portion of the baulk area also contained a deposit of rocks extending in an east/west direction. The excavator noted that there were three courses of rocks between 17 and 36 inches below the TC AO datum. These rocks may have represented the remains of a stone wall which defined the northern boundary of the ceramic deposit. The western portion of this wall was apparently disturbed by the intrusive event mentioned above.

## Ceramics and Other Artifacts

A total of 36,146 ceramic sherds were recovered from TC AO, ST 16 and ST 22. The mean ceramic date calculated for the 35,788 datable sherds was 1800.5 . Of the 36,146 sherds, 25,780 were recovered from the sandy matrix which represented the undisturbed ceramic deposit. All but 97 of these sherds were dated, their mean ceramic date being 1800.9. Of the dated sherds from this deposit, $41.9 \%$ were creamware and $53.4 \%$ pearlware, with $3.9 \%$ Oriental Export Porcelain and $.7 \%$ classified as "mid-18th century types." These latter consisted of 102 sherds of "Jackfield" type red earthenware (1740-1780), 82 sherds of engine turned stoneware (1763-1775) and one sherd of black basalt stoneware (1750-1820). Nine hundred and seventeen of the 1,012 porcelain sherds were "18th-century" overglaze decorated types. In addition to the above, the deposit yielded seven delftware sherds and two 19th-century whiteware sherds. Although only two of the pearlware sherds were transfer printed, 8,678 sherds were underglaze polychrome decorated. This type has an initial manufacture date of 1795, suggesting that accumulation of the deposit began after this date. (Forty additional sherds were annular decorated pearlware with an initial manufacturing date of 1790, compared to an initial date of 1780 for plain pearlware.)

In both TC AO and ST 16 two levels were excavated within the ceramic deposit. In the case of $T C A O$, the uppermost
level had a later mean ceramic date than the lower level, 1800.5 ( 5,557 dated sherds) as opposed to 1798.3 (4,341 dated sherds). However, in ST 16 the upper level had an earlier mean ceramic date, 1800.4 ( 5,024 dated sherds) than the lower level (1802.5 for 10,741 dated sherds). Since there are substantial quantities of underglaze polychrome pearlware in both levels ( $46 \%$ of all pearlware sherds in the lower level of TC AO and $72 \%$ in ST 16 are underglaze polychrome and $48 \%$ and 68\%, respectively in the upper levels are of this type), it is unlikely that accumulation of the deposit began before 1795. In addition, the data suggest that the deposit accumulated during a relatively short period of time. The greater percentage of underglaze polychrome pearlware in ST 16 than in TC AO and the later mean ceramic date for ST 16 (1801.8) than for TC AO (1799.5) suggests the possibility that the deposit accumulated horizontally rather than vertically. In both TC AO and ST 16 a single whiteware sherd was recovered from the topmost level of the ceramic deposit. The sherd from ST 16 was decorated with a type of transfer printing not common until after 1830 and was most likely intrusive in the deposit. The fact that more whiteware was not present indicates that deposition most likely did not continue much past 1810, the initial date of manufacture of whiteware.

Nine creamware plate bases recovered from the ceramic deposit contain the makers mark "D.D. \& Co. Castleford

Pottery." According to Chaffers (1946) and Thorn (1947), this mark was used by David Dunderdale between 1790 and 1820, which would accord with the dates of deposition calculated from the other ceramic evidence. One creamware sherd from the material excavated beneath the baulk had the impressed mark "Herculaneum." This mark was used by the Herculaneum pottery between its founding in 1796 and 1841.

The ceramic evidence cited above indicates that deposition of the material coincides with the period during which a ceramics shop was known to be present on Lot 27*.

One hundred and seventy-three ceramic sherds excavated below the mortar floor which underlay the ceramic deposit yielded a mean ceramic date of 1798.3. The ceramics suggest that the mortar floor was constructed during the same period in which the ceramic deposit accumulated, probably after the building on this lot began to be used as a ceramics shop.

The soil associated with the disturbed area in the western portion of TC AO yielded 1,002 ceramic sherds, 988 of which were dated, with a mean ceramic date of 1797.1. The earlier date than that of the undisturbed deposit is due mainly to the higher proportion of creamware than pearlware in this deposit than in the undisturbed deposit since creamware has an earlier mean date of manufacture. The absence of whiteware in this deposit suggests that the disturbance took place shortly after the deposition of the broken ceramics.

The soil deposited below the burned wooden floor and above the ceramic deposit in the eastern portion and the disturbed deposit in the western portion of TC AO yielded 458 sherds with a mean ceramic date of 1799.2 , based on 438 dated sherds. This deposit had a higher percentage of creamware than the lower deposits, accounting for the earlier mean ceramic date. However, unlike the lower, disturbed deposit, this assemblage contained 10 whiteware sherds (two point two percent of the dated sherds) suggesting deposition of this material subsequent to 1810. In addition, the rubble between the brick and wood floors, deposited later, contained no whiteware sherds, and has an earlier mean ceramic date (1794.8 based on 365 dated sherds) than the underlying deposits. This earlier date is also due to the higher percentage of creamware, with $59 \%$ of the deposit consisting of this type.

In ST 22 , the brown and dark brownish gray sand silt removed with the rocks in the western part of the shovel test yielded 16 whiteware sherds of a total of 301 dated sherds (five point two percent). Fifteen of these are transfer printed sherds manufactured after 1830. This suggests that this may not be the same disturbance as noted in the western portion of TC AO, and may have occurred later. Another possibility is that the whiteware sherds may have originated in the overlying rubble, which was shoveled out in ST 22. The soil removed from the baulk area in ST 22 yielded 4,716 sherds, 4,543 of which were dated with a mean ceramic date of
1799.2. Most of these sherds probably originated in the undisturbed ceramic deposit.

We suggest that the ceramic deposit represents breakage from a ceramic shop which stood on Lot 27* (see below). This suggestion is strengthened by the relative paucity of other artifacts. In contrast with the 25,780 sherds in the undisturbed portion of the deposit excavated in tC AO and ST 16 , only 380 other artifacts were recovered (one percent of the total). Most of these artifacts (283) consist of bottle and table glass. The table glass (154 pieces) could also have been breakage from the shop. Sixty nine of the 129 pieces of bottle glass were dated to the period 1780-1810/30, with 29 other mold-made pieces dating to the post-1800 period. The material excavated from the TC AO/ST 22 baulk area yielded 40 additional pieces of bottle glass dated to $1780-/ 1800 / 30$ and 29 mold-made pieces dated post-1800. These dates are consistent with the ceramic evidence. Only 42 artifacts in the clothing and personal ornament category, one smoking pipe fragment, one button and 40 glass pocket flask fragments were recovered. The latter could have been sold in the glass and china shop. Only 55 architectural artifacts were recovered, eight of these being window glass. While 2,769 grams of brick were recovered, 2,707 , of these came from the upper level in TC AO and could have originated in the overlaying material.

It is interesting that 240 pieces of bone (20.1 pcs/cu.ft.) and 367 grams of shell were recovered from the
undisturbed deposit. The material removed from the baulk area yielded an additional 561 pieces of bone and 954 grams of marine shell, most of which probably originated in the undisturbed deposit. This bone and shell may represent the remains of food eaten by those working in the shop and was discarded behind it.

The disturbed and mixed contexts from TC AO, ST 16 and ST 22 also contained relatively few non-architectural artifacts, primarily table and bottle glass. None of these deposits contained the concentration of bone and shell present in the "undisturbed" deposit. The material in TC AO between the brick and wood floors yielded a large concentration of brick and mortar, consistent with the interpretation of this deposit as building demolition rubble. The material immediately below the wooden floor also contained a large concentration of building material, and unlike the other deposits from TC AO, a high density of architectural artifacts, mainly window glass.

## Summary

The cut stone walls at the southern and eastern border of TC AO and the associated mortar floor may have represented a backyard area or, more likely, the interior of a covered extension of a building standing on the site in the late 18th and early 19th centuries. The documentary research indicates that from 1794-1795 John Elting ran a "China, Glass and Earthenware" shop on Lot 27* and John Manley is identified as
running a "Glass and China Store" between 1798 and 1820. The ceramic and other artifactual evidence is consistent with these dates. The ceramic deposit in the sandy matrix most likely represents the deposition of breakage from one or both of these china shops. The breakage was apparently dumped behind the shop in the alley way or covered extension which probably extended from the stone wall in the eastern portion of TC AO and ST 22 to the Lot 27*/28 boundary wall. Workers in the shop may have disposed of their lunch refuse in the same area.

Except in the area of ST 16 and the eastern portion of TC AO, the ceramic deposit was apparently heavily disturbed by later events. Since the top of the undisturbed ceramic deposit was at the same level as the top of the cut stone wall, the highest point of which was approximately 15 inches below the TC AO datum, it is possible that disturbance of the deposit was associated with the demolition of the building extension. excavation and filling of the area in the western part of TC AO apparently mixed ceramics from the deposit with stones from a disturbed wall.

Ceramics from the deposit were also apparently mixed with soil deposited over both the undisturbed ceramic deposit and the disturbed area with stones in the western part of TC AO. This occurred prior to the construction of the overlying wooden floor, which was subsequently burned. The inclusion of whiteware in the fill below the floor and the burned
condition of the floor suggest that the building extension may have been demolished and the wooden floor built between about 1820, when the ceramic shop was no longer in operation and the 1835 fire, which may have burned the floor.

Ceramics from the deposit were also included in the rubble between the wooden floor and later brick floor, perhaps during the demolition of the main portion of the building which housed the ceramics shop. This would suggest that Lot 27 was not incorporated into the Pearl Street House until after the 1835 fire (see documentary research section).

7 Hanover Square, Part 2 of 6

## CHAPTER THREE

## LOTS 11 AND 25

## Documentary Research

Lots 11 and 25 may be placed in the same chain of title as Lots 10* and 26*. This parcel (10*, 26*, 11 and 25) originated in William Cox's original 1687 Water Lot Grant (Liber A p40), passed to William and Sarah Kidd, and then to Robert Livingston in 1693 (L21 p55). Livingston obtained a 1697 Water Lot Grant to extend Cox's original parcel (46' X 95') an additional 46'2" X 40'/43' (Liber A p221, see also preceding description of Lot 9). Stokes commentary on the 1717 Burgis View describes Livingston's "palatial residence" and places the structure on a parcel containing Lots 10*, 26* 11 and 25 (Stokes I:246).

Sometime shortly after Livingston's death in 1728 the Lot 25 section of the parcel passed to Cornelius Van Horne, a wealthy merchant and New York County Representative to the General Assembly between 1743 and 1758 (L46 p79; L47 p106; L48 p486; Stokes I:246; Bonomi 1971:296-311).

The 1730 tax records list Cornelius Van Horne on Water Street (Lot 25 ) and his residence was probably built on landfill made under the provisions of Livingston's 1697 Water Lot Grant. Robert Livingston's house is listed in the tax records until 1734 (occupied by Widow Staat, 1723-1734. The records end at this year.). The continued presence of this
structure is puzzling because Water Lot Grants dating to 1734 place Van Horne in 11 and 25 and Stephen Bayard in Lots 9*, 27*, 10* and 26* (Liber B p125, p154). This subdivision suggests that the structure depicted in 1717 was no longer standing in 1734. Presumably it was replaced with a narrower (23' wide) structure (or structures) since this is the width of the parcel described in the 1734 Water Lot Grant (Liber B p125). Garret Van Horne subdivided the Lot $11 / 25$ in 1793/4, selling Lot 25 to the "ironmongers" Abraham Varick and Peter Elting, who also owned Lot 26* (L50 p484; L48 p484; L94 p294). Elting occupied the structure between 1791 and 1811, according to the city directories. Lot 11 was sold to Thomas Timpson in 1794 (L50 p484) and to James Tuttle (owner of Lots 13 and 14) in 1814 (Ll05 p452; L107 p110). This 1793-4 subdivision of Van Horne's 23' X 140' (approx.) parcel into two parcels (Lot 25 measured 21' X 69'11"/70'8"; L84 p484) implies that at this time there might have been two structures here, one fronting Pearl street and one fronting Water street.

The occupancy history suggests that Van Horne owned two structures prior to the 1793-4 subdivision. In 1790 a mason, Thomas Halloway, is listed in Lot 11 and Peter Elting occupied Lot 25 as early as 1791 (NYD). Lot 11 housed a hairdresser in 1794 and after 1812 a series of merchants appear in the directories. Lot 25 housed Peter Elting until 1811 and in 1795 H. Van Solingen, a physician/druggist is also listed (NYD). From 1810 until 1818 a series of merchants occupied

Lot 25. Mrs. Godoin was here in 1819, the house was vacant in 1820 and from 1821 until 1824 the structure functioned as a boarding house (NYD). The structure returned to commercial use in 1825 when Charles Gordon, merchant, is listed (NYD). The lot was vacant from 1831 to 1836 (tax assessment records). During these years it was assessed as part of the Pearl street House (Lots 9*, 10*, 26* and 27*). John Peters, owner of the Pearl Street House, bought lots 11 and 25 in 1836 and is probably the builder of the new Lot 25 structure which appears in the tax records in this year (L363 p456; L356 p259).

Lots 11 and 25 were conveyed as a single unit also containing present day Lot 9 (9*, $10 *, 26 *$, and $27 *$ ) from 1839 until 1853 (L653 p57). Throughout this period Lot 11 was occupied continuously by the merchants Marsh and Compton (1827 to 1860) (NYD). The 1860 tax records describe a four story building measuring 21' X 65' in Lot 25 and a four story building measuring $21^{\prime} \mathrm{X} 60^{\prime}$ in Lot 11 . Prior to 1860, there seem to have been a minimum of two building episodes in Lot 11 and two in Lot 25. The original late 17 th century structure built on Lots 10 and 11 was probably gone by 1734 when Stephen Bayard had acquired the Lot 10* half of the parcel on which it sat. It was certainiy gone by 1790, at which point Lot 11 was listed separately from Lot 10* in the city directories. There is no indication that this 18th century building placed before the 1860 tax assessment records.

EXCAVATION - LOT 11
TEST CUT C
Examination of 19 th and 20 th century maps indicated that a narrow, approximately five foot wide, strip of the backyard area between the buildings fronting on Pearl Street and those fronting on Water street had never been built upon and had remained as a narrow "alley" between the most recent structures. Since the strip had the potential of containing undisturbed backyard deposits and features, two test cuts (B and $c$ ) were placed in this area at the beginning of the project.

Test Cut $C$ was located in Lot 11 and measured two feet north-south and five feet east-west. The test cut was excavated to a depth of approximately 20 inches. A dense concentration of brick and mortar rubble was encountered to that depth. Since a similar result was encountered in TC B, we decided to remove the rubble with the backhoe and resume manual excavation beneath the rubble. Clearing with the backhoe, however, indicated that the rubble extended to a depth below the level of the base of the landfill deposits encountered elsewhere on the site. The rubble was apparently deposited during the construction of the large, 20 th century building which had stood on the southern portion of the site east of Lot $27 *$. The construction of the rear wall of this building had disturbed virtually the entire backyard strip in Lot 11.

## LOTS 10* AND 11--THE LIVINGSTON HOUSE

## Livingston House--Overview

During the exploratory phase of the project, TC $H$ was placed in Lot 11 in order to test the landfill deposits. This test uncovered the remains of a stone foundation wall. Subsequently, we exposed the entire extent of the east, west and south walls of this structure and a portion of the north wall. Examination of the site map indicates that this foundation differs from those uncovered on the lots east of Lot 11. This structure encompasses two lots rather than one. In addition its rear wall extends some two and a half feet further south than the common rear wall of the structures to the east. Subsequent investigations uncovered a rear extension which also straddled the Lot $10 * / 11$ boundary. These foundation walls, in our opinion, remain from the large house owned by Robert Livingston at this location, shown on the Burgis view, drawn in 1717.

The excavation of $T C H$ showed that the east wall of the Livingston house was overlain in part by the wall of the most recent structure to stand on the lot. Later excavations showed that the south, east and north walls were also overlain by the walls of later structures.

The rear wall of the Livingston House was approximately two and half to three feet wide. A narrower sandstone "cap" rested on this wall and was centered on it. Both the differences in materials used in the "cap" and the Livingston
wall and the stratigraphy discussed below, indicate that the "cap" belonged to a later structure which apparently reused the underlying Livingston foundation walls.

The west wall of the Livingston house also was overlain by the base of a later stone wall. This wall base was, in turn, overlain at intervals with stone slabs which may have served as pier supports for a still later structure.

Tests Within the Main Portion of the Livingston House
During the exploratory phase of the project, in addition to TC H, we placed two small test cuts, TC $K$ and TC $L$ in Lot 10* on either side of the rear wall of the Livingston house, primarily to determine whether a wall trench was associated with the architecture. TC L was placed within the Livingston house extension and will be discussed in a subsequent section. TC K was placed within the main portion of the house.

While clearing the west wall of the foundation, we uncovered a portion of a cobble floor. Test cut $P$ was excavated to determine whether this floor dates to the period of occupation of the Livingston structure or a later one, and whether there were any significant overlying deposits. We also placed a number of small probes at fixed intervals to determine whether the floor was intact within the entire area bounded by the foundation walls in Lot $10 *$. The probes suggested that the floor was partially intact in some portions of this area, while other areas had been completely disturbed. The floor was not present in Lot 11. Comparison of elevations
in the two lots suggested that if the floor had originally been present in Lot 11 it would have been removed by subsequent construction.

During the mitigation phase of the project we placed three larger test cuts, $A A, A B$ and $A C$, in the area in which TC P and the probes indicated that the floor may have been intact. Test cuts were placed in a "checkerboard" pattern so that a continuous profile could be obtained extending northward from the south wall of the foundation. A simplified "composite profile" for test cuts $A A, A B, A C, K, L$ and $P$ is included as Figure 24.

Profiles in the northern portion of Lot 10* were obtained from TC P as well as from a "shovel test" type probe placed in the northwest corner of the foundation. This test uncovered the upper portion of the north wall of the foundation,

Shovel Test 5 was placed in the southwest corner of the foundation. It exposed the upper portion of the west foundation wall and provided a profile in this area.

LOT 11--TEST CUT H

## Livingston House Excavations

This test cut was placed one and a half feet west of the Lot $11 / 12$ boundary wall and 28 feet south of the Pearl street base line (Figures 26, 27). The topmost several inches of the excavated deposits consisted of a brown sandy silt containing rubble. The presence of a light-bulb base indicated that this


FIG 25
COMPOSTTE PROFLE: LOT 10

Figure 25. Composite profile Lot 10

1. brick and rubble
2. pinkish sand (AA); bands of variously colored coarse sands (K)
3. pinkish-tan sand (H); medium brown sand (AA)
4. orange-brown coarse sand (K); tan-brown coarse sand (AA)
5. greenish-gray sandy silt
6. browner greenish-gray sandy silt
7. yellowish-gray sandy silt
8. gray and dark gray-black silt
9. greenish-gray sandy silt
10. medium brown sandy silt
11. bands of coarse and fine sands
12. red sand
13. hard-packed brown sand with rubble
14. mottled brown sandy silt
15. coarse gray mottled silty sand
16. reddish-brown sand
17. disturbed area
$a=$ stone wall
$b=$ break in horizontal scale


FIG 26-27

Figure 26-27. Test Cut H

1. reddish-brown sandy overburden
2. tan-brown sandy silt
3. 1ight brown sand
4. gray-brown silt
5. brown sand
6. tan sand
7. gray-brown clayey silt
8. brown sand
9. wood stain
10. tan sand with shell
11. red silty sand
deposit was modern. The next stratum (stratum II) consisted of brown silty sand which extended to a depth of six to nine inches. During the excavation of this stratum, the top of a dry laid stone wall (the east wall of the Livingston house) was encountered in the eastern part of the test cut.

Beneath the brown silty sand the excavators encountered a layer of greenish brown sandy silt (stratum III) which extended to a depth of $20 / 24$ inches. Immediately underlying this soil was a thin layer of light brown sand (stratum IV) followed by another thin (approximately one inch) layer of dark brown sandy silt (stratum V) containing shell, bone and charcoal. Neither of these two thin strata (IV or V) abutted the stone wall and during the excavation of stratum IV a strip of darker brown sand was noted adjacent to the wall. This strip of darker brown sand (stratum VI) extended approximately five inches west of the stone wall at a depth of 20 inches below the surface and sloped to the east to meet the base of the stone wall 36 inches below the surface of the test cut.

A stratum of tan sand (stratum VII) underlay the layer of dark brown sandy silt (stratum $v$ ) and extended to a depth of $40 / 41$ inches. Thus, the brown sand "wall trench" and the wall itself ended within stratum VII. It should be noted that there was a considerable difference in the material recovered from the first excavated level of stratum VII and the two succeeding levels although the soil matrix was uniform. Level VIIa yielded a greater density of artifacts and faunal
material, especially oyster shell, than levels VIIb or VIIc. However, beginning in stratum VIIb (at approximately 32-36 inches), a large quantity of coral and flint nodules were included in the excavated material. This material was not present in level VIIa. The profile drawings show that the top of the coral deposit coincides with the bottom of the wall. However, this coral was not associated with the construction of the wall. This is indicated by the fact that the wall trench ended above the coral deposit and by the fact that the coral was recovered from all portions of TC H, not just the portion adjacent to the wall.

The profile drawings for $T C H$ show a thin layer of gray/brown clayey silt underlying stratum VII. The soil below this was described as brown and tan sand. This sand was excavated as strata VIII and IX. The presence of a large amount of coral and flint nodules was noted throughout. The sand immediately beneath the gray/brown clayey silt had a low density of artifacts and faunal material, in common with the soil overlying the silt. The sand toward the base of these strata had a higher density of materials in all categories.

Below stratum IX a brown wood stain at a depth of $52 / 55$ inches, one to two inches thick, extended across the test cut (stratum IX). Beneath the wood stain, we excavated a layer of tan sand and an underlying lens of mixed tan and gray sand, both of which contained a large quantity of oyster shell. However, the tan sand contained a lower density of coral than
the sand above the wood stain. No coral was recovered from the mixed sand. These strata (XI and XII) extended to a depth of 62 1/2/66 inches.

Red sand (strata XIII) was excavated beneath the tan and gray sand to a depth of $72 / 77$ inches below the surface of TC H. The first excavated level of this sand contained some artifacts and faunal material. The second level was practically sterile. A post hole test at the bottom of the excavation encountered red sand to a depth of 94 inches. The water table was encountered at 86 inches.

## Summary

The red sand excavated as stratum XIII probably represents the original river bottom deposits at the location of TC H. It is possible that the tan sand and tan and gray sand (strata XI and XII) immediately overlying this red sand were also natural river bottom deposits. The wood stain overlying stratum XI represents the remains of a large wooden board which may have been deposited on the river bottom prior to the landfilling to prevent the overlying fill material from sinking into the river bottom, or to facilitate access at low tide for carts bearing the landfill material. Similar decayed wooden boards were noted in other test cuts.

The coral and flint nodules which formed a large part of the landfill deposits at this location were probably brought to New York as ballast in ships with previous ports of call in areas of warmer waters. A total of 657.6 pounds of coral
was excavated from TC H. This ships' ballast may have been discarded on land and subsequently redeposited at the location of TC H as part of the landfill. This fill could also have been dredged from the river bottom at another location and used as landfill. The fact that the coral and flint seemed to be distributed throughout the surrounding soil matrix suggests that it is unlikely that the ballast had been originally discarded at this location.

The thin layer of dark brown silty soil excavated as stratum $V$ contained a much higher density of artifacts and faunal material than the underlying landfill, and it is possible that this stratum was deposited after the landfilling had taken place. The overlying sand excavated as stratum IV did not contain this high density of material. Both of these strata were cut through by the wall trench associated with the construction of the east wall of the Livingston house, and thus were deposited before the wall was constructed. This suggests that a period of time had elapsed between the landfilling and the construction of this wall, but we cannot document this. The coral and flint nodules underlying the trench would have provided a firm base for this construction. It is likely that the major portion of the wall trench was located on the outside of the house wall and was therefore situated beneath the more recent Lot $11 / 12$ wall.

It should be noted that three creamware sherds were recovered from the landfill deposits in TC H. one originated
in stratum VII and two in stratum IX. Since creamware was not manufactured before the 1760 s, there must have been some type of disturbance within the test cut. Neither the profile drawings or the excavators' notes indicate the presence of an animal burrow, although a pocket of rust stained sand was noted in the center of the test cut in stratum VIIa. A possible source of disturbance in this and other test cuts was the series of bore holes made for engineering purposes before the beginning of the archaeological excavations.

LOT 10*--TEST CUTS AA, AB, AC, P AND $R$
The lot which we have designated as $10 *$ was one of four lots covered by the last building to stand at this location. After this building was constructed in the late 19 th century, the four lots were joined together as the modern Lot 9 . We have designated the other three original lots as 9*, 26* and 27*. A common brick floor was present in all four of these lots including Lot $10 *$. This brick floor was not present in Lot 11 which, as noted above, was the location of the eastern portion of the Livingston house. Since an 1855 map shows a back yard area between the structures fronting on Pearl Street (Lot 9* and 10*) and those fronting on Water street (Lots 26* and 27*), the common brick floor must have been constructed after this date.

Prior to the excavation of the test cuts in Lot $10 *$, the brick floor was removed from the vicinity of these test cuts either manually or by power equipment. The brick floor was
underlain by a three to four inch sand bedding. In two of the test cuts, $P$ and $A B$, the brick floor was removed manually and the underlying undisturbed sand was screened. Four of the six diagnostic sherds recovered were whiteware or Albany slipped stoneware, 19th century ceramic types. This confirms the 19th century construction of the brick floor. In addition, an 1845 penny was recovered from beneath the floor in TC AA. This firmly places the construction of the floor after this date.

The cobble floor mentioned previously was encountered beneath the sand layer, approximately six to nine inches below the top of the brick floor. In the areas excavated, the cobble floor was completely intact only in TC P. The floor was also intact in a major portion of $T C A C$ and a smaller portion of $T C A B$. In the disturbed portions of the latter two test cuts and in TC AA, cobbles were included among the excavated rubble and were noted in the profiles at the same elevation as the intact cobble floor. The disturbance to the floor most likely occurred during subsequent construction phases on this lot.

In some locations, a thin layer of sand heavily stained with charcoal directly overlay the cobble floor. This may indicate the occurrence of a fire which could have destroyed one of the early structures on the lot, or it could represent the remnant of a basement trash accumulation. Evidence from the southern extension of the Livingston house supports the
former interpretation, as discussed below. This thin charcoal layer was sampled in TC AB and AC. It yielded 17 dated sherds. Ten of these are creamware and four Oriental Export Porcelain. Only one sherd from the deposit was attributable to 17 th century manufacture while a second, slipware, sherd could have been manufactured in either the 17 th or 18 th centuries. The presence of the 10 creamware sherds suggests that the floor was still intact and in use in the latter part of the 18th century.

In TC P (Figure 28) the floor was overlain by a thicker stratum of brown hard packed sand. This may represent fill deposited after the floor was no longer in use. This deposit also had a high proportion of creamware, 14 of 24 dated sherds. However, this brown sand included four pearlware sherds and one whiteware sherd, suggesting that it was in fact later than the thin charcoal deposit and was probably deposited in the early 19th century. A bottle glass fragment from this brown sand was dated to $1780-1810 / 30$, supporting this conclusion, although this interpretation is based on a fairly small sample since the floor was quite "clean."

As noted above, the cobble floor in TC AA, AC and the northeastern portion of $T C A B$ had undergone extensive disturbance. This may have been caused by the installation of a number of large stone slabs which probably served as the base for the supporting piers of a building standing on the lot subsequent to the Livingston house. In $T C A A$, three
superimposed stones protruded into the square from the north wall (Figures 29, 30). The top of the uppermost slab was eight inches below the brick floor. The slabs were 17-19 inches in width and eight inches thick. In TC AC, a single stone block was uncovered. It measured 14 by 15 inches and was 11 inches thick. The top of this block was approximately 15 inches below the surface of the test cut. It was located above one foot west of the east wall of TC AC (Figures 31, 32) and thus was aligned on a north-south axis with the blocks uncovered in TC AA. The centers of the slabs in TC AA and TC AC were eight and a half feet apart.

In TC AA, another single slab was uncovered approximately two and a half feet south of the three slabs in the north wall. The top of this slab was $11 \frac{1}{2}$ inches below the surface. It was two and a half inches thick. The test cut stratigraphy and alignment of the slabs indicate that they constituted the pier supports for a single building. The intrusive pits or trenches in which these slabs were installed originated in the rubbley sand immediately underlying the brick floor and disturbed the underlying cobble floor. The building associated with these slabs was thus the structure which immediately preceded the construction of the single large structure which jointly occupied Lots $9 *$, 10*, 26* and 27*. The soil excavated in TC AC in association with the pier supports yielded 20 sherds with a mean ceramic date of 1767.7 . However, five of the sherds were 19 th century ceramic types,


Figure 28. Test Cut P

1. reddish sand
2. hard-packed brown sandy rubble with brick and mortar
3. reddish-brown sand with flecks of yellow silt
4. greenish-gray sandy silt with charcoal, brick, patches of

4a. grayish-green sandy silt with charcoal, brick, patches of clay, and reddish silty sand
5. shell
6. grayish-green sandy silt with shell and clay, some charcoal and brick

Figures 31-32. Test Cut AC

1. brick rubble
2. dark brown sand mottled with charcoal and fire-cracked rock
3. mottled brown sand
4. dark brown sand
5. brown silty sand
6. red-gray sandy silt
7. green-yellow mottled silt
8. green silt
9. brown silty sand
10. brown-green silty sand
11. gray silty sand
12. green-yellow mottled silt
13. red-gray silty sand

NORTH WALL


FIG 29-30

TEST CUT AA


Figure 29-30. Test Cut AA

1. brown sand with brick and rubble
2. pinkish fine/medium sand

2a. medium to light brown sand with rubble
3. tan-brown coarse sand with mortar and pebbles

3a. similar to stratum 3 but with dark brown stains (wood?)
3b, similar to stratum 3 but slightly darker and with less mortar
4. hard-packed gray sand with mortar
5. light brown coarse sand

5a. rust colored sand
5 b. medium brown coarse sand
6. heavily mottled green and yellow silt with brick and charcoal
7. similar to stratum 6 but lighter in color and finer textured and without charcoal
8. grayish-brown sandy silt with brick
9. dark grayish-brown sandy silt with charcoal
10. mottled green silt with brick and charcoal
11. light gray and tan medium sand
12. brown sandy silt with charcoal
13. hard-packed brown sand with mortar and brick
two whiteware and three yelloware. This reinforces the conclusion that the supports were part of a 19th century structure. The presence of one purple transfer printed whiteware sherd suggests that this building was constructed after 1830. No ceramics were recovered from the soil excavated in association with the pier supports in TC AA.

The elevation of the cobble floor was approximately six to eight inches above the elevation of the rear wall of the Livingston house. The floor was laid in a matrix of reddish brown sand. Remains of this deposit were also present in some areas where the cobbles themselves had been removed.

The sand in which the cobbles were laid was sampled in TC P, AA and AB. Dating of this deposit would give a date for the construction of the cobble floor. Unfortunately only five dated sherds, one slipware and four plain white delftware, were recovered from this deposit. These ceramics are not incompatible with the date of the known existence of the Livingston house, but would also not be incompatible with a somewhat later date for the floor. One bottle glass fragment recovered from this deposit was dated to 1680-1730/40.

In $T C K$, a number of thin soil strata were present between the surface of the test cut and the top of the Livingston wall. In general, these strata sloped upward slightly from north to south. It was difficult to keep these strata separate from one another during excavation. It is, therefore, difficult to determine whether one of these strata
represented the sand bedding for the cobble floor. It is likely that the deposition of these multiple thin strata close to the rear wall of the house occurred after the construction of the foundation and may have been associated with the construction of the sandstone "cap" above the Livingston wall.

In TC AA, red/brown and yellow/brown sand underlay a red sand stratum which probably represented the remains of the red sand bedding for the cobble floor. This deposit yielded six dated sherds, three slipware, two 17 th-century red earthenware and one sherd of Jackfield type earthenware (1740-1780). However, this deposit was overlain in part by the intrusive pit dug for installation of the pillar support. Therefore, all of this material may not have been associated with the construction of the cobble floor.

## Landfill Deposits

The artifacts recovered from the soil underlying the bedding of the cobble floor indicate that this material represents the late 17 th century landfill. The data suggest that the landfill on Lot 10* may have been deposited in several distinct episodes. The deposits consist primarily of a greenish gray sandy silt. In TC $P$, this soil began immediately beneath the red sand bedding for the cobble floor and continued to the base of the excavation at a depth of 32 inches below the brick floor. A similar soil was encountered beneath the red sand cobble floor bedding in Test cuts $K$ (Figure 33), $A A, A B$ (Figure 34) and a portion of TC AC. This


FIG 33

## TEST CUT K <br> WEST WALL



Figure 33. Test Cut K

1. reddish-brown sand
2. tan sand with heavy black charcoal
3. orange-brown coarse sand
4. pinkish-tan and white coarse sand
5. light orange-brown coarse sand
6. medium brown sandy silt with flecks of brick and charcoal
7. reddish-brown sandy silt
8. yellowish-gray sandy silt
9. reddish-tan coarse sand
10. brown and gray silty sand
11. red coarse sand with pebbles
12. yellowish-brown silt
13. very fine red sand

14, bright bluish-green silt
15. medium brown sandy silt with charcoal
16. very coarse rusty brown sand with heavy concentrations of shell
17. very fine tan sand


FIG 34
TEST CUT AB
WEST WALL


## Figure 34. Test Cut AB

1. brown sand with brick and stone rubble
2. charcoal above cobbles
3. cobbles sitting on hard-packed coarse brown sand
4. green silt mottled with lighter silt, brick, charcoal, and mortar
5. brown sandy silt
6. light tan sand
7. green silt mottled with lighter silt and charcoal
stratum has been referred to as GS1 in figure 13-1. In these test cuts a band of soil with a similar texture but a browner color was encountered beneath the greener soil. This stratum will be referred to as BS. In Test Cuts $K$ and AA this soil was underlain, in turn, by a deposit of gray and dark gray/black silty soil (stratum GBS). Another deposit of the greener silty soil (labelled as stratum GS2) was encountered below stratum GBS in Test Cuts $K$ and AA and immediately beneath stratum BS in Test Cuts $A B$ and $A C$. The composite profile (fig. 1) indicates that the greenish gray sandy silt in TC P is part of this deposit.

The deposits called GSI sloped upward to the south in TC $K$ above the top of the rear wall of the Livingston house. If the sandstone cap on top of the foundation wall was added after the original construction of the foundation, GS1 would have been deposited subsequent to the original foundation construction. There is no indication of a trench dug through the fill to install the cap. Rather, it appears that the cap was constructed and stratum GS1 then deposited.

The gray black soil excavated in TC AA and TC K (stratum GBS) began approximately five inches below the top of the south Livingston wall and extended approximately nine feet north of the wall. The maximum thickness of this deposit (about four to five inches) occurred at the intersection of TC $K$ and $A A$.

The ceramics and smoking pipe fragments recovered from
strata GS1, BS, GBS and GS2 are consistent with those recovered from the late 17th century landfill deposits elsewhere on the site. (The green silt in TC P yielded one sherd of debased Rouen faience, not manufactured until 1775. However this sherd is probably intrusive, since an animal burrow was noted in this test cut.) All identifiable pipe maker's marks from these deposits, including $H G, E B, W E$ and IW belong to 17 th century pipe makers.

The following table sumarizes the mean ceramic dates. Binford pipe-bore dates and non-architectural/architectural artifact ratios for strata GS $1, B S, G B S$ and GS2 excavated in Test Cuts $\mathrm{K}, \mathrm{AA}, \mathrm{AB}$ and AC :

| Deposit | MCD | (n) | Binford Date | (n) | NA/A | (n) |
| :--- | :--- | :---: | :--- | :---: | :--- | :--- |
| GS1 | 1685.8 | 37 | 1644.4 | 29 | 3.8 | 116 |
| BS | 1697.5 | 26 | 1683.9 | 75 | 4.9 | 196 |
| GBS | 1696.7 | 50 | 1691.9 | 44 | 0.7 | 392 |
| GS2 | 1688.5 | 51 | 1676.5 | 388 | 6.0 | 703 |

It should be noted that none of the sample sizes are large, except the pipe sample for GS2, and therefore dates derived may be easily distorted.

The later mean ceramic dates for strata $B S$ and $G B S$ are largely due to a greater percentage of slipware sherds and correspondingly smaller percentages of 17th century earthenware sherds in these deposits. It is possible that the deposition of strata $B S$ and GBS took place subsequent to the deposition of stratum GS2, with GS1 being deposited still
later (even though its dates are earlier). The similarity between GS1 and GS2 could be accounted for by the fact that GS1 may consist of the same material as GS2, redeposited from another location on the lot or derived from the same source as the earlier fill. GSI seems to have been deposited after construction of the sandstone cap atop the foundation wall.

The nature of stratum GBS remains uncertain. The color of this deposit suggested that it may have represented a domestic midden. However, the NA/A ratio of 0.7 does not support this inference. The deposit also does not have a particularly high density of bone or shell, with a lower density of bone than the other three deposits. It is probably significant that of the 229 artifacts in the architectural category recovered from GBS, 189 were building stone fragments, while few fragments were recovered from the other deposits discussed. Without the building stone, the NA/A ratio for GBS would be 4.08 , similar to the other deposits.

The data suggest that GS2 was deposited as the initial landfill at the time the south foundation wall of the Livingston house was constructed. GBS may have accumulated while the surface of the Lot was exposed prior to the construction of the superstructure of the house, possibly during the construction of the sandstone cap atop the foundation wall. This is suggested by the presence of the building stone and by the fact that the deposit was present only in the area closest to the wall. It should be noted that
a dark layer immediately above the landfill was also present adjoining the east foundation wall of the Livingston house which was exposed in TC $H$ (see above). This deposit was approximately 16 inches below the top of the east wall, while the TC K/TC AA deposit began five inches below the top of the south wall.

TC $K$ was excavated below the base of the south wall of the Livingston house, which was approximately 42 inches in height (not including the sandstone cap). A band of medium brown silty sand was noted near the base of the wall and deposits of gray and tan fine and coarse sands began at the same depth as the base of the wall. At this depth, a layer of black silty sand was noted, possibly stained with burnt or decaying wood. Stratigraphic excavation continued to a depth of 65 inches. However, we shoveled out a small area below this depth, to 75 inches, to determine the stratigraphy. From 69 to 72 inches we encountered wood. Silty sand with heavy concentrations of shell was encountered beneath the wood.

The excavated strata below the green silt in TC K yielded 26 datable sherds, all but one of which were delftware and 17th-century earthenwares. Twenty measurable pipe bores yielded Binford dates consistent with the other landfill deposits excavated. $\rightarrow ?$ referemce

## Livingston House "Shovel Tests"

As noted above, we recorded profiles of the upper portions of the stratigraphic sequence in the southwest and
northwest corner of the Livingston house. In the southwest corner (ST 5) we recorded the profile extending eastward from the west wall. The cobble floor appeared to have been disturbed in this area but cobbles were noted in the wall of ST 5. The green silt deposits began at approximately the same elevation in this test as in TC K. At the top of the Livingston house wall several bands of orange and red sand were noted sloping slightly upwards toward the wall. This was a similar situation as in $T C K$ although the soil descriptions varied. The gray and gray/black deposits (stratum GBS) did not appear to be present at this location. In the northwest corner of the Livingston house a profile was drawn extending south from the north wall of the foundation. This was uncovered beneath the footing stones of the north wall of the most recent building to stand on the lot and was situated roughly beneath the Pearl street baseline. There was no indication that the cobble floor had been present at this location. While a band of orange sand was noted six inches below the top of the brick floor, this stratum was at too high an elevation to have represented the sand bedding of the cobble floor. Green silt with rust colored banding was encountered beneath the orange sand to a depth of 32 inches. Because the purpose of this test was to determine the location of the north wall of the Livingston house, artifacts were not retained. However, photographs suggest that the green silt at this location probably contained much less brick, mortar
and shell than the green silt excavated in the test cuts. At a depth of 32 inches a stratum of reddish sand was encountered immediately beneath the green silt. This sand may have been naturally deposited. As discussed elsewhere in this report, the river bottom surface in this part of the site sloped steeply upwards near the Pearl Street baseline.

The top of the north wall of the Livingston house appears to have been approximately four inches below the elevation of the south and east walls. The builder's trench for the installation of the footing stones of the most recent building to stand on the lot was noted beneath the brick floor and it extended beneath the base of the footing stones which overlay the top of the Livingston wall. The topmost portion of the latter wall may have been removed during the installation of the footing stones.

Shovel Test 17 was placed in Lot 11 at the intersection of the Livingston house rear wall and the most recent Lot 10*/11 boundary wall. ST 11 uncovered another stone wall extending northward from the Livingston rear wall underneath the Lot $10 * / 11$ boundary wall. This wall also extended southward into the Livingston house extension. The base of this wall was at the same elevation as the south wall of the main portion of the Livingston foundation. The presence of this wall is consistent with some of unusual features of the east wall of the Livingston house excavated in TC H. First, the east wall was the only one of the foundation walls of the

Livingston house or of any of the other early foundations exposed on the site which showed any indication of an associated wall trench. The other walls were apparently constructed and landfill deposited around them. In addition, the top of the east wall of the Livingston house was at approximately the same elevation as the top of the south wall uncovered in TC K while the elevation of the base of the east wall was approximately 28 inches above that of the south wall.

A likely explanation is, therefore, that a structure was built on Lot 10* prior to the construction of the larger Livingston house. The wall uncovered in ST 17 would have been the east wall of this house. This structure may have been built by Livingston or by one of the prior owners of the lot at the time the lot was filled. The house would have been subsequently enlarged or reconstructed by Livingston using the earlier foundation walls. This would have involved the construction of a new east wall in Lot 11 , and since the lot had already been filled, the wall trench was necessary.

## Summary

The documentary research conducted prior to our excavations indicated that both Lots 10* and 11 were included within the 1687 water lot grant to William Cox and that ownership was subsequently transferred to William Kidd, who had married Cox's widow after the latter man's death, and then to Robert Livingston. Subsequent to our excavation, additional data pertaining to this lot was uncovered in the

Livingston papers in the Columbia County Historical Society by Ruth Piwonka. A bibliography of Robert Livingston included evidence that Livingston purchased a house from William and Sara Kidd in June 1693. On the other hand there is clear evidence that in 1696 Livingston contracted with captain Teunis DeKay to fill up the Livingston water lot and in addition there are records pertaining to the construction of Livingston's New York house in 1697.

The above data together with the results of the excavations suggest a possible interpretation of the events on this lot. It is likely that Lot 10 * was filled-in before Lot 11, and before Livingston owned the lot. Kidd or Cox may have constructed the foundation walls uncovered on Lot 10* and deposited the landfill within the house walls. After Livingston acquired the land, he contracted for the remainder of Lot 10 and Lot 11 to be filled-in, and for the walls of the larger house to be constructed. It should be noted that if this were the case, Teunis DeKay must have undertaken the landfilling prior to the construction of the house, as the east wall of the house was constructed within a trench excavated into the landfill.

It should be noted that the differing soil types which constituted the landfill in Lots 10* and 11 support the inference that they were filled by different owners. In addition, the level of the landfill was apparently a foot higher in Lot 10* than in Lot 11.

It is likely that some time elapsed between the filling of Lot 11 , and the construction of the Livingston house, during which a thin deposit (represented by stratum $V$ in $T C$ H) accumulated. A deposit (stratum GBS) also accumulated in a portion of Lot 10* adjacent to the south wall of the house prior or during the construction of a superstructure on the foundation walls.

After the east wall of the foundation was constructed in such a manner that the top of this wall was at the same elevation as the existing walls, the ground level inside the structure was raised by the deposition of additional fill. This interpretation is supported by the fact that the fill in TC H above the level of stratum $V$ was of a similar type as the uppermost fill stratum (stratum GSI) in the lot. This filling episode probably occurred either immediately prior to or after the construction of the superstructure of the house.

After the ground surface on the two lots had been equalized by deposition of the additional fill, the cobble basement floor may have been constructed.

Remains of two additional structures were encountered during the excavations on Lot 10*. One of these structures utilized supporting piers which rested on stone slabs. This building most likely was constructed in the early 19th century. Subsequent to 1845 , and probably after 1855, a single large structure was built on the land which included Lot 10*. This building represented the latest building
episode on this lot.
The documentary research suggests that at least one structure was built between the demolition of the Livingston house in and the construction of the pillar supports. However, no remains of this structure could be identified.

Further, the documentary research suggests that Robert Livingston constructed two houses in this area. One of these would have been located within the bounds of 1697 water lot grant which extended his property southward to the present location of Water street. The foundation walls encountered by the excavations in Lot 28*, discussed elsewhere in this report, may constitute a portion of this house.

Tests within the Livingston House Extension (Lot 10*)
Two test cuts were placed in Lot 10* within the walls of the Livingston house extension. The portion of the extension in Lot 11 was not testable because of more recent construction in the western portion of this lot. The basement floor of the latest building phase in Lot 11 contained a thick concrete floor, with a concrete lined "trench" in the western portion. This trench appeared to be of the type sometimes found in garages to allow access to automobile underbodies.

The Livingston extension ran south 25 feet from the rear wall of the main portion of the house. Test Cut $L$ was placed immediately south of the wall, aligned with TC K on the north side of the wall. These test cuts were aimed at determining whether a construction trench was associated with the rear
wall of the house. No such trench was found, indicating that the wall was constructed before the landfill was deposited. Test cut X was placed 13 feet south of the rear wall of the Livingston house. The base of a wall associated with a later (probably 19th century) structure ran in an east-west direction across the Livingston extension just north or this test cut.

Excavation of both test cuts began at the common brick floor which covered Lots $9 *, 10 *, 26 *$ and $27 *$ as discussed above.

TEST CUT L
In TC L a second brick floor was encountered approximately $18 / 19$ inches below the surface of the first one (Figures 35, 36). This second floor was at about the same level as the top of the main portion of the rear wall of the Livingston house below the sandstone "cap." The surface of this second floor showed evidence of burning, similar to the charring noted above the cobble floor excavated within the main portion of the building. However, unlike the situation above the cobble floor, 19th century ceramic sherds were found in the thin (two to four inch) layer of reddish brown sand which underlay this second floor. A deposit of rubble-filled soil was deposited between the two brick floors.

The landfill deposits were encountered immediately beneath the red sand which underlay the lower floor. The topmost fill deposit consisted of a gray/green silty soil


FIG 35-36
TEST CUT L


Figures 35-36. Test Cut L

1. red sand
2. brown silty sand with rubble
3. gray silty sand with mortar
4. mottled brown sandy silt
5. red sand
6. gray-green silt

6a. mixed red sand and gray-green silt
7. light gray sandy silt with orange and brown mottling
8. dark gray sandy silt
9. dark gray sandy silt
10. mixed orange and gray silty sand
similar to that encountered north of the rear Livingston wall. The top of the west wall of the Livingston house extension was revealed in the extreme western portion TC $L$ at a depth of approximately 50 inches. The top of this wall was about 20 inches lower at this location than the other portions of the Livingston extension wall. The base of the extension wall was at the same depth as the base of the rear wall of the main portion of the Livingston house.

A stratum of red sand was encountered at a depth of 54/56 inches. This deposit extended to the base of the rear wall of the main portion of the Livingston house, which was exposed in the north portion of TC L. The deposit ended at a slightly lower depth in the southern portion of the test cut. Additional gray/green silt underlay the red sand followed by a deposit of orange/gray mottled silty sand.

Excavation of TC L terminated at about 67/68 inches. The stratigraphy was tested for 14 inches below this depth using a post hole digger. The orange/gray mottled sand continued and at the bottom of the post hole test a deposit of dark brown silt containing decayed vegetation and large cobbles was encountered.

The stratigraphy at the base of the rear wall of the Livingston house suggests the possibility that the land surface was filled to the approximately level of the base of the wall prior to its construction. The red sand at the base of this wall may have been deposited during construction of
the wall and the remainder of the green silt landfill then laid down.

Ceramics and Pipe Dating--Test cut L
The soil between the two brick floors in TC L yielded only three ceramic sherds, one creamware, one pearlware and one yelloware. This latter sherd supports a 19 th century deposition for the uppermost brick floor. As noted previously, the recovery of an 1845 coin from TC AA indicates this as the earliest date of construction for this floor.

The soil immediately beneath the second brick floor yielded 12 datable sherds among which were three whiteware sherds, indicating that this floor also was constructed during the 19th century. In addition, one transfer printed whiteware sherd was probably manufactured after 1830. Therefore, this second brick floor was apparently built shortly before the upper floor was laid down over the entire extent of Lot 9. The other sherds in this deposit indicate that the soil immediately underlying the lower brick floor may consist of redeposited earlier landfill.

The green silt landfill deposit in TC L yielded 44 sherds with a mean ceramic date of 1691.5 and 56 measurable pipe bores with a Binford date of 1689.3. A 17th-century glass prunt was also recovered. The deposits beneath the green silt yielded 21 dated sherds. The mean ceramic date for these sherds (1683.0) is also consistent with landfill deposits. This deposit included one sherd of British brown stoneware,
usually found in 18th-century contexts. However, the initial date of manufacture for this type (1690) suggests that it could be present in small quantities in landfill deposits. The Binford date for 23 measurable bores is compatible with the landfill dates.

TEST CUT $\mathbf{x}$
The second brick floor encountered in $T C L$ was not present at the location of TC X. However, a layer of wood was encountered in TC X approximately $15 / 19$ inches below the surface of the upper brick floor (Figures 37, 38). This is slightly above the elevation of the lower brick floor encountered in TC L. A rubble deposit was excavated between the brick floor and the wood. The wooden floor appeared to be several inches thicker in the middle of the test cut than on the east and west sides. At approximately the same level as the top of the wooden floor we encountered the top of a stone block in the north wall of the test cut. The block rested on a second stone slab.

The soil beneath the wooden floor in the eastern portion of the test cut consisted mainly of a brown silty sand with rubble, while the west side consisted of a dark gray/black siltier soil. The presence of whiteware sherds in these subfloor deposits indicates a 19th-century construction date for the wooden floor.

At a depth of $34 / 35$ inches below the surface of the test cut, excavation reached the level of the western stone wall


Figures 37-38. Test Cut X

1. light red-brown silty sand
2. light brown silty sand
3. rust sand
4. light brown silty sand with rubble
5. dark brown silty sand
6. decayed wood (?)
7. brown silty sand with mortar and brick
8. brown silty sand with rubble
9. gray-brown sand

10, dark grayish-brown silty sand with charcoal
11. brick
12. gray silty sand
13. orange silt
14. tan medium-coarse sand
15. mottled gray silty sand
16. reddish-brown sand
17. gray silty sand with charcoal
18. yellowish-tan and gray silt
19. reddish-brown sand
20. grayish-brown sandy silt with shell
21. brown and rust silty sand
of the Livingston house extension, which had been exposed prior to the excavation of TC X. Beneath this depth, the boundaries of TC X were enlarged to expose the stone wall and to sample the landfill deposits, which began just below the top of the wall.

The landfill deposits consisted of reddish brown sand, yellowish tan and gray silt, a second reddish brown sand layer, a layer of grayish brown sandy silt with shell and a stratum of brown and rust colored silty sand. These deposits were tested to the depth of the base of the west wall of the Livingston extension.

It should be noted that a lens of brown silty sand with a heavy concentration of charcoal, brick, and mortar was found immediately above the landfill deposits in the western portion of the test cut. The ceramics from this deposit differ from those excavated from the other deposits at and above this level, and consist of delftware (13 sherds), slipware and 17th-century earthenware (two sherds each), with no later types. It also contained a fragment of 17 th -century bottle glass. The other deposits overlying the landfill contained mostly whiteware with a few creamware, pearlware and earlier sherds. Six pieces of bottle glass datable to the 19th century were also recovered from these deposits. The brown silty sand lens may represent the remains of an early postlandfill deposit which was distributed by later construction activities.

The available evidence permits only a tentative reconstruction of the events occurring within the boundaries of the Livingston house extension.

The stone slabs excavated in TC X may be pier supports for the same structure as the supports excavated north of the rear wall of the Livingston house. However, the TC X support is not aligned with the others, being approximately six feet further to the east. The wooden floor in TC $X$ may be the basement floor of the structure associated with the pier supports. And the brick floor in TC L may be associated with the same structure, with the stone wall north of $T C X$ serving as an internal dividing wall. The deposits underlying the wooden floor may have been associated with the construction of this building while the deposits between the lower brick and wooden floors and the uppermost brick floor may have been deposited during the demolition of the earlier structure and construction of the building associated with the later brick floor. The indications of burning at the top of the earlier floors indicate that the first of these 19 th century buildings may have been destroyed by fire, perhaps the large fire of 1835.

There is no indication that any of the excavated levels were associated with the period of use of the Livingston house extension. Those deposits were probably removed or destroyed during the construction of the later structures on the site.

## Livingston House--Possible Domestic Midden (Lot 11)

During the exploratory phase of the project, Backhoe Trench 5 was excavated in Lot 11, approximately $51 \frac{1}{2}$ feet south of the Pearl Street baseline and two and a half feet north of the south face of the rear wall of the Livingston extension. This east-west trench encountered the eastern wall of the Livingston house extension. It also encountered the northern edge of a dark organic-appearing stratum which began slightly below the top of the Livingston extension wall. The deposit became thinner toward the north and ended at the north wall of the three and a half foot wide backhoe trench.

During the mitigation phase of the project, TC AF was excavated to sample this deposit (Figures 39, 40). The test cut extended four feet south of the south wall of Backhoe Trench 5. The south wall of TC AF was only two feet north of the brick wall which formed the northern boundary of the disturbed backyard area in which TCs B and C were placed (see discussion of Lot 12).

The topmost stratum in TC AF consisted of the concrete basement floor of the most recent building to stand on the lot and an underlying deposit of sandy soil containing brick and mortar rubble. This deposit was removed prior to excavation. The top of a circular brick feature was uncovered beneath this rubble in the southeastern portion of the test cut. This feature, discussed further below, extended beneath the most recent Lot $11 / 12$ boundary wall. The footing stones for this


Figure 39. Test Cut AF

1. loose reddish-brown sand

2, compact gray and yellow sandy silt mottled with rust
3. mixed pink sand, reddish-brown and yellow sandy silt with
brick and mortar
4. pale yellow mortar
5. graymbrown sandy silt
6. mixed pink, gray, and tan sand
7. gray sandy silt with flecks of charcoal
8. black with charcoal, mortar, and shell and some tan sand
9. similar to stratum 8, but with more mortar and less charcoal

Figure 40. Test Cut AF: Plan view
$a=$ reddish-pink sand with rust stains
$b=b r o w n-t a n$ sand with some fragments of brick and mortar
elevations measured in inches below unit datum
wall directly overlay the feature.
A band of reddish brown sandy silt, representing the pit excavated in order to install the feature, immediately abutted it. A layer of rocks was uncovered at the same level as the top of the feature. However, the fact that the stones did not cover the band of soil representing this "pit" indicates that the stones were deposited before the feature was installed.

A five to eight inch thick deposit of decaying mortar and shell was encountered beneath the layer of stones. More than 220 kg . of oyster shell was recovered from the excavated area. The elevation of this deposit was above that of the top of the Livingston house extension wall. It may represent the remains of a shell mortar floor or pavement, or the base for a stone pavement which covered a portion of a backyard area. This pavement may have been subsequently disturbed, with the remnants of the pavement represented by the stones excavated immediately above the mortar layer.

The midden deposit began directly beneath the shell mortar layer. It was approximately one foot thick in the southern portion of the test cut and ten inches thick in the northern portion. As noted above, the top of this deposit tapered downward and ended within the area exposed by Backhoe Trench 5. The topmost portion of this deposit consisted of gray silty soil with patches of charcoal. The base of the deposit consisted of darker black and gray silty soil, the darker color probably resulting from a higher charcoal
content. The base of the midden deposit was fairly level and was at the approximate elevation of the top of the Livingston extension wall.

Immediately below the midden was what appeared to be a thin transitional layer between the midden deposit and the underlying reddish brown sand. The latter soil probably represents the 17 th-century landfill deposits in this area. The landfill was not tested at this location.

The ceramics recovered from the midden could represent deposition during the occupation of the Livingston house. Twenty nine of the 35 dated sherds were delftware, with four being 17th-century earthenware and two slipware. The mean ceramic date for these sherds is 1694.4 . However, two bottle glass fragments from this deposit were dated to the period 1730-1760. The early portion of this period may have overlapped with the end of the period of occupation of the Livingston house. Of the 34 measurable pipe bores recovered, 23 had \#6 bores: seven, \#5 bores; and four \#7 and \#8 bores, the calculated Binford date is 1704.5 . The smoking pipe fragments had no recognizable makers' marks.

Other artifacts attesting to the domestic origin of this deposit include four gunflints and two clothing buckles in addition to 18 bottle glass and four table glass fragments. The deposit also contained high densities of bone and shell, as well as comparatively heavy concentrations of slag and charcoal. However, in addition to the domestic debris, the
deposit also contained architectural debris including window glass, nails and two delft tile and 19 pantile fragments. The NA/A ratio of 1.1 for this deposit is not particularly high, nor is the density of brick and mortar (1055 grams/cu. ft.) very high compared to other deposits. This deposit probably represents an accumulation of domestic refuse which includes debris from building repairs, rather than representing demolition debris.

The transitional stratum below the midden deposit yielded three dated sherds, two Rhenish and one Hohr type stoneware. The latter has dates of manufacture between 1690 and 1710, consistent with both the period of landfilling and occupation of the Livingston house. The deposit of mortar and overlying stones which immediately overlay the midden contained few artifacts which could permit dating. Only one ceramic sherd, slipware, was recovered.

Evidence of several intrusive events is present in the southeastern portion of TC AF. The first such event is represented by a pit, a portion of which intruded into the southeastern portion of TC AF. This pit (or trench) extended approximately two feet west of the eastern wall of TC AF and one foot north of the southern wall. It was filled with semisterile sandy soil. This pit was dug part way through the midden deposit and was partly overlain by the mortar deposit, indicating that it was dug between the end of the period of midden deposition and the deposition of the mortar layer. The
top of the pit is also partially beneath the feature and its position indicates that it was not associated with the construction of this feature.

The southern portion of TC AF also appears to contain two superimposed trenches which were dug after the deposition of the shell/mortar layer. The first trench extends approximately four inches below the lowest of the three courses of brick which constituted the wall of the feature. It was filled with sand and yellow silty soil which abutted an east-west running, one course-thick brick "wall" four inches south of TC AF, possibly associated with an outbuilding which may have stood on the lot. This first trench may have been associated with the construction of this wall. The second "trench" or pit was apparently circular and was dug to the level at which the bottom of the feature wall was encountered. This later pit was the one referred to above which was apparently dug to install the feature.

The function of the feature is uncertain. It may have represented a small (approximately three ft. diameter) cistern. However this feature did not have a floor although it is possible that the floor existed at a higher level than that which was disturbed by the construction of the Lot 11/12 boundary wall. If the feature had functioned as a privy, it would have to have been thoroughly cleaned out prior to its demolition, as the deposits within the feature were not the organic soils often associated with privy deposits, but
contained mostly brick and mortar.
The fact that only three courses of brick remained suggests that the feature was built in an earlier backyard area, the elevation of which would have been substantially higher than that at which the excavation of TC AF commenced.

This would have been the backyard area associated with a structure whose rear wall would have been located north of Backhoe Trench 5. The backyard surface would have been cut down when the larger building associated with the Lot $11 / 12$ boundary wall was constructed. The position of the feature directly below the Lot $11 / 12$ boundary wall suggests that it may have been shared by the occupants of Lot 11 and 12. It is possible, therefore, that one of the structures associated with this feature is the late 18 th-century building whose rear wall was uncovered in TC $F$ (Lot 12). We did not locate the rear wall of a possible contemporary building on Lot 11. However, we did not test the portion of this lot which was aligned with TC F, and it is likely such a wall, if present, would have been located in this untested area.

BACKHOE TRENCH 5 (LOT 11)
Backhoe Trench 5 exposed the east wall of the Livingston house extension to its base. The deposit of red sand which was encountered beneath the midden deposit in TC AF continued to this depth.

A photograph of the south wall of BH trench shows a thin "line" of darker soil immediately adjacent to the stone
extension wall. This line was not noted in the field notes or profile drawings and may be caused by increased moisture next to the wall or by the photographic process. However, it may also indicate that a trench had been dug through the fill to install the wall. The major portion of such a trench would have been located west of the wall. It should be noted that the east wall of the main area of the Livingston house also appeared to have been built after the land had been filled. It would be consistent for the eastern portion of the extension also to have been constructed after the land filling. This is supported by the fact that the base of the extension wall appeared to be at approximately the same elevation as the base of the eastern wall of the main portion of the house. As noted previously this was approximately two feet above the bottom of the rear wall of the main portion of the house and the western wall of the extension which were excavated in Lot 10*.

## Stone Ring--Lot 10*

During preliminary clearing operations we encountered the upper portion of a small circular dry laid stone construction located approximately 10 feet south of the rear wall of the Livingston house extension and 2 feet west of the eastern wall of the extension. The outer diameter of the ring was approximately three feet while the circular opening in the center of the ring was only one and one third feet in diameter. One of the stones was missing from the top course
on the southwestern site of the feature and one of the stones comprising this top course showed traces of adhering metal.

During the mitigation phase of the project, ST 20 was excavated to expose the southern half of the outer surface of the feature and to provide a profile of the surrounding stratigraphy. The only soil which was screened was that removed from the lower portion of the interior of the feature and an approximately two square foot area on the west side of the feature which extended southward from the north profile of ST 20.

The soil within the feature and surrounding it consisted of reddish brown sandy soil with lenses of darker sandy and silty soil. There was no evidence that a pit or trench had been excavated to install this feature, unless this pit extended beyond the boundary of ST 20. Thus it is likely that, in common with most of the early building foundation walls, the feature was constructed in the late l7th century and the landfill deposited around it.

The total height of the feature was approximately 32 inches. The elevation of the top of the feature was approximately the same as that of the west wall of the Livingston house extension which was exposed in TC $X$. It should be kept in mind, however, that both this wall and the feature were probably truncated by later construction events. The soil below the base of the feature was gray clayey silt, with lenses of coarse orange-red sand.

The stratigraphy of the north wall of ST 20 shows evidence of two 18 th and/or 19 th-century events. A creamware sherd, dating to this period, was noted in the profile in a stratum deposited above the level of the top of the feature. An intrusive pit was dug down into this stratum and what appears to have been a wooden pail was placed in the pit. It is also possible that this wooden feature represented the cross section of a drainage trough rather than a pail. However, no indication of such a trough was noted south or north of the ST 20 profile. The excavator noted that most of the late $18 t h-19$ th century ceramics recovered from ST 20 appeared to come from the area of this intrusive event.

The function of the stone feature excavated in ST 20 is unclear. It appears to be too small to have functioned as a cistern or privy. It may have served to support a metal or wooden pole which was subsequently removed, although the similarity of the soil within and without the feature does not support this interpretation. The most likely explanation is that the feature served as a drainage sump.

## CHAPTER FOUR

## EXCAVATION--LOT 12

## Documentary Research--Lots 12 and 24

Lots 12 and 24 fall within an area created by two successive Water Lot Grants, the first, granted to Engell Burgers in 1687, measured $2(2)^{\prime \prime} X 95^{\prime}$ and contained all of Lot 12 (23'1" X $70^{\prime \prime} 5^{\prime \prime} / 9^{\prime \prime}$ ) and the northern end of Lot 24 within its bounds (Liber A p42). This original parcel then passed to Abraham Lackerman, who in 1697 obtained a grant to fill an additional $22^{\prime \prime} \mathrm{X} 45^{\prime} 4^{\prime \prime} / 6^{\prime \prime}$ beyond Burgers 1687 grant (Liber A p209; L21 p155). Tax assessment records from 1703 to 1709 list Lackerman's house also appears in the 1717 Burgis view (Stokes I:247). He subdivided the lot ca 1727 (L203 p123) and at this time the two new parcels (Lots 12 and 24) assumed dimensions approximating those of the 19 th and 20 th centuries.

LOT 12
Simeon Soumaine is the first of the post subdivision owners to appear in deeds describing (although not conveying) Lot 12 (L33 p252,254; L203 p123). Deeds from 1739 to 1748 place Soumaine in Lot 112 and earlier, from 1721-24, he had lived on Lot 14 (tax assessment records). By 1789, Lot 12 was owned by and served as the residence of Julian Verplanck (NYD). Verplanck also owned Lot 13 at some point prior to 1796 (L51 p394,401; L53 p123). In 1795 he sold Lot 12 to Ezra L'Hommidieli (L53 p1234), who in 1802 sold it to John

Swartwout, Marshal of the NY District and owner of Lots 13 (L60 p38) and 15 (L61 p337; L20 p258; NYD). Swartwout sold Lot 12 to David Dunham in 1809 (the Lot 15 stable owner), who converted the building into a boarding house (NYD, L84 p249). After 1816 the building housed a series of "merchants" and "dry goods" stores. The 1860 tax assessment records describe a four story building measuring 23' X 66' with a backyard area 4'9" in depth.

There have been a minimum of two building episodes in Lot 12. The four story building described in the 1860 tax records is clearly not the original 17th century structure. It is also possible that an additional undocumented structure replaced the 17 th century structure prior to the building described in 1860.

## LOT 24

Abraham Lackerman subdivided his original parcel (22' X approximately $140^{\prime}$ ) in 1727 and sold Lot 24 (23' X 70') to John Van Devanter, a shipwright (L203 p123). However, tax records from 1727 to 1734 indicate that the structure (presumably a residence) was occupied by Archibald Fisher. In 1740, Van Devanter sold his property to Abraham Huisman, a merchant (L32 p160) who in turn sold the lot to Humphrey Jones in 1748 (L33 p252,254). Tax records place cutler John Bailey here from at least 1789 to 1797 and by 1793 Bailey had purchased the lot (L48 p484). Bailey was replaced by grocers and wine merchants George Bement and John Gale who appear in
tax records and directories from 1797 to 1816. Deeds place them here from 1807 until Bement's widow sold the property in 1845 (L461 p40). Gale also conducted business next door in Lot 25 from 1810 to 1816 (tax assessment records).

The lot was vacant by 1831 (tax assessment records). However, an 1832 party wall agreement between Bement and his Lot 25 neighbors suggests that a building is under construction at this date (L287 p543). A merchant, Edward L. Mathews, moved in only to be forced out by the 1835 fire (NYD, tax assessment records). When the building was either repaired or rebuilt in 1836 , its occupants were the merchants Oakford and Kip (NYD and tax records). Grocers H. and R. Yelverton occupied the lot from 1841 to 1844 (NYD and tax records). The 1860 tax records for Lot 24 describe a four story building measuring $24^{\prime} 4^{\prime \prime} \mathrm{X}$ 65' with a backyard area measuring 6' across the breadth of the lot.

There have been a minimum of three building episodes in this lot. It is unknown if Lackerman constructed a building on the Water Street side of his $22^{\prime} \mathrm{X}$ 140' lot prior to its subdivision in 1727 after which a structure fronting Water Street is clearly documented in the city directories. The 1706 tax assessment records list Water street structures and place Lackerman at this address. However, it is unclear whether the building assessed is Lackerman's Pearl Street House or an additional building in the rear of his lot. In 1832 a new building replaced an earlier structure and this ca

1832 building was then destroyed by the fire which swept the Water street side of the block in 1835. The building which was built here in 1836 seems to be the one described in the 1860 tax assessment records.
test CUT B
Test Cut B was, like TC C, a two by five foot test cut placed in an approximately five foot wide strip which, according to the documentary research might contain undisturbed deposits associated with the backyards of earlier buildings on Lots 11 and 12. Test cut $B$ encountered brick and mortar rubble to a depth of some 20 inches. As noted in the discussion of TC $C$ (Lot 11) backhoe clearing subsequently established that this area had been largely disturbed by construction of the rear wall of a 20th century building (on Lots 19, 24 and 25) fronting on Water Street. However, some four feet east of TC B the wall was set back to the south, leaving a portion of this "backyard strip" undisturbed. Test cut $G$ tested the intact portion of a brick/stone feature encountered in this area.

TEST CUT G
Test Cut $G$ was placed in the backyard area of Lot 12 just described. As noted above, after TCs C and B indicated that this backyard area had been disturbed, the area was probed further using the backhoe to determine the extent of disturbance, revealing that the disturbance ended six to eight feet west of the Lot $12 / 13$ boundary wall.

The undisturbed area generally coincided with the part of the backyard strip which was slightly wider. While shovelling away the loose surface soil disturbed by the backhoe, we uncovered the topmost three courses of what appeared to be a curving brick wall, with the concave portion of the arc facing west. There was only a space of two to four inches between the outside of this brick arc and the Lot 1213 brick boundary wall. Test cut $G$ was placed to explore this feature. The test cut extended three feet west from the Lot $12 / 13$ boundary wall and four feet along the wall (Figures 41 , 42).

The backyard area in the vicinity of TC G had apparently been covered by a number of cut sandstone slabs. One of the remaining slabs covered the area between $T C G$ and the brick rear wall of the most recent Lot 12 building, located approximately 16 inches north of TC G. The top of this slab was used as the datum elevation for TC G measurements. Another cut stone slab was present in the northeast corner of TC G, some two and a half to five inches below the reference elevation. This was removed before work began in the test unit.

It should be noted that some of the soil in the backyard area was removed by backhoe and shovel prior to archaeological excavation. Thus excavation in the portion of TC G lying outside of the feature began at four to nine and a half inches below the reference elevation. The top of the brick feature wall in the east part of the test cut occurred at



FIG 43-44
TEST CUTG
PLANS



Figures 41-46. Test Cut G,'

1. coarse brown sandy silt mixed with construction rubble 2. blackish-brown sandy silt mixed with construction rubble 3. dark brown sandy silt
2. reddish-brown sand
3. mixed ash, mortar, and rubble
4. dark brown sandy silt mixed with ash, mortar, and rubble
5. coarse brown sandy silt mixed with construction rubble
6. dark brown silty sand mixed with blackish-gray clayey silt
7. mixed coarse brown sandy silt and blackish-gray sandy silt with construction rubble
8. mixed blackish-gray clayey silt and coarse brown sandy silt
9. blackish-gray clayey silt
10. blackish-gray clayey silt mixed with light brown sand
11. blackish-gray clayey silt mixed with light brown sand and gray-white ash
12. mixed black, bbrown, and gray sands
13. reddish-brown sand mixed with gray sandy silt and construction rubble
14. gray sandy silt with construction rubble
15. gray sandy silt with construction rubble and gray-white ash
16. gray-brown sandy silt with construction rubble
17. gray-brown sandy with brick rubble
18. gray-brown sandy silt mixed with tan sand and brick
19. dark brown silty sand
20. dark gray-brown silty sand
21. wood
22. gray silt
seven to seven and a half inches below the reference elevation, and the soil directly west of this part of the brick wall (within the feature) began at $17 \frac{1}{2}-24 \frac{1}{2}$ inches.

As we excavated TC G, more of the brick arc was exposed with increasing depth and the entire top of the brick structure was exposed at 21-26 inches (Figure 43). It should be noted that the destruction of the top of this feature was not caused by our backhoe operations, as undisturbed soil was excavated above a portion of the brick arc, as discussed below.

Our excavations revealed that the southern portion of the feature had been removed to a depth of $73-75$ inches by the construction of the brick rear wall of the 20 th century structure fronting on Water Street (Figure 44). The "trench" from the construction of this wall extended approximately 614 inches into the southern part of TC G, with a deposit of mortar at the bottom of the trench. The archaeological deposits inside the feature extended to the south beneath the trench. This material was not excavated.

At the point where the brick arc at the top of the feature was fully exposed, the shape of the feature was that of a somewhat flattened ellipse, measuring approximately 36 inches east-west, and 20-28 inches from the northern rim to the point at which the feature was destroyed by the southern wall trench. At a depth of some 44 inches, the side walls of the feature widened, revealing a "bell-like" shape for the structure. At the base of the structure its greatest
east/west extent measured about 43 inches. At approximately 70 inches below the reference elevation, the brick wall of the feature ended and from this point the feature was constructed of stone which had apparently been laid in mortar, much of which had decayed. The base of this stone wall occurred at approximately 97 inches. At this depth, logs and pieces of wood protruded from the south wall of the test cut into the excavated area and logs were also found beneath the feature walls on the east and west side. The structure was apparently supported on these logs, presumably to prevent it from settling into the underlying river bottom deposits. The excavation of this feature did not encounter a floor. However, at a depth of approximately 96 inches, the same level as the base of the stone wall, a number of broken sandstone slabs were encountered with a large quantity of brick beneath these slabs. Some of the bricks appeared to have been purposefully laid, with indications of two courses in some area. It is possible that this represents the original feature floor, disturbed after the feature's period of use. The feature in TC G extended beyond the boundaries of the test cut by an additional eight inches to the west at the top and 12-13 inches at the bottom. The west wall of TC $G$ therefore provided us with a profile of the deposits within the feature. After the interior of the feature was fully excavated, this profile was drawn and the remaining soil within the feature was removed so that the details of
construction could be recorded (Figures 45, 46). Because of time constraints this soil was not screened, although large artifacts encountered during excavation were saved.

Time limitations also meant that the soil outside the feature but within the boundaries of TC G, could only be excavated to a depth of some 38 inches. The soil north of the feature to about 17 inches in depth consisted of a dark brown sandy silt and reddish brown sand. According to the profile drawings, the soil outside the feature between 17 and 33 inches was similar to that inside the feature to a depth of 39 inches. However, differences in soil were noted during excavation, and the soil outside the feature between 17 and 30 inches had a high density of artifacts and bone. Very high densities of brick were noted from most of the soil excavated outside the feature.

East of the feature, a space of approximately two to six inches between the feature and the Lot $12 / 13$ wall was disturbed when the latter wall was constructed. This "trench" contained a large quantity of gravel. The Lot $12 / 13$ wall was apparently constructed after the feature but did not disturb it because the depth at which the feature widens is below the bottom of the wall trench.

The soil within the feature consisted of several strata. To a depth of 39 inches the soil was a brown sandy silt (stratum VII) which contained high artifact, building material and faunal densities but less brick than the soil outside the
feature.
Between 39 and $55 / 57$ inches the soil was a blackish gray clayey silt (strata XII-XIV) which had lower artifact, building material, and faunal densities than the overlying soil. From $55 / 57$ inches to $65 / 70$ inches the soil became much sandier (strata XV-XVI) with generally lower densities of artifacts and faunal material. Between $65 / 70$ inches and approximately 96 inches the soil consisted of a grey brown sandy silt (strata XVII and XVIII). The major difference between the contents of the overlying sand and these strata was the presence of much higher brick and mortar densities and lower bone densities in the latter. At the base of stratum XVIII (level $C$ ), the feature wall ended and the sandstone slabs and brick noted above were encountered.

The material above the sandstone slabs yielded a number of clothing and personal items. These include 11 buttons, six straight pins and several pieces of fabric. only 38 smoking pipe fragments were recovered from these deposits, a small number compared to earlier deposits excavated elsewhere on the site.

The soil in stratum XIXa, immediately below the slabs, was similar to that overlying them but had a higher artifact density than stratum XVIII, probably due to the inclusion of some material from the underlying stratum, which was excavated as levels XIXb and c.

The soil between approximately 100 and 108 inches (strata

XIXb and XIXc) consisted of a dark brown silty sand. This deposit had an extremely high density of crockery ( 477 sherds) and bottle glass (approximately 2,800 pieces). Much of the glass (about 1,200 pieces) was melted and fused by high heat, and some of the crockery also showed evidence of burning. This deposit contained very few architectural artifacts (NA/A $=36.4$ ) . However, it did contain a high density of brick. Since the lowest level of the deposit (XIXC) had a much lower density of brick than XIXa or $b$, it is possible that the brick originated in the overlying deposit. While a moderate density of bone and fish scale was recovered from this stratum, higher densities occurred in the overlying strata VII, XII, XV and XVI. In addition to the burned ceramics and glass, this deposit also yielded a glass bottle ownership seal (discussed below). Only three smoking pipe fragments were recovered. In addition to the burned artifacts, the stratum yielded an unusually high amount of charcoal and other burned material. Between 108 and 111 inches, the soil consisted of a darker brown sandy silt (stratum XX ) with a lower density of artifacts but a higher bone density. The deposit also yielded a fragment of a brush handle. Underlying this soil was a gray silt (stratum XXI), which probably represents the river bottom deposit. The presence of the logs which supported the feature walls prevented any extensive excavation of this stratum. A small area ( $13 \times 16$ inches) between the logs was excavated to a maximum depth of 118 inches. However, much of this small
area could only be excavated to 115 inches because of the presence of two sizeable rocks at this depth. Only a few artifacts and faunal remains were recovered from the excavated soil.

It should be noted that the elevation at which stratum XXI began is only some two inches below the elevation of the river bottom silt deposit encountered in TC F, located in Lot 12 approximately $22^{\frac{1}{2}}$ feet north of TC G.

Ceramics recovered from strata excavated outside of the feature gave mean dates ranging from 1791.4 years to 1796.7 years. The lowest excavated stratum outside the feature yielded an earlier date, 1779.8 years. However this material contained only nine datable sherds, one of which was delftware. Because of its long period of manufacture, the presence of this ceramic type has an inordinate effect on the mean ceramic date. Without this delftware sherd the mean ceramic date for the stratum would be 1789.9 years.

The mean date for all sherds outside of the feature is 1795.2 based on 410 dateable sherds. However, the actual date of deposition may be slightly later than this since 40 of these sherds are transfer printed pearlware and four are underglaze polychrome pearlware, types which were not manufactured until 1795. The percentage of total sherds recovered represented by these types becomes lower with increasing depth, suggesting that the soil outside the feature may have been deposited over a period of time.

As shown in Table 1, the sherds excavated from strata VII and XII-XVI within the feature yield consistent mean ceramic dates, with an overall mean ceramic date of 1795.3 for these strata, based on 527 dated sherds. However, 51 of these sherds (9.8\%) were of the two pearlware types, transfer printed and underglaze polychrome, not manufactured before 1795. This suggests that the actual date of deposition may have been slightly later than the mean ceramic date. As shown in Table 1, the percentage of these two later types of ceramic decreases with increasing depth, which suggests that deposition inside the feature may have occurred over a period of time. Only three sherds from these strata (including two identified as whiteware) have initial dates of manufacture of 1800 or later. These sherds could have been deposited after the disturbance of the feature.

It is possible that deposition of this material may have continued into the first decade of the 19th century. However, more whiteware sherds would be expected if deposition had continued past approximately 1810. Only six of the sherds from strata VII and XII-XVI had final dates of manufacture prior to 1790. All of these sherds were recovered from stratum VII. The presence of these sherds suggests the possibility that deposition may have begun slightly before the mean ceramic date. Dated bottle glass from the above deposits includes two fragments dated to 1740-1790, one to 1750-1780, and one to the post-1800 period.

Table 1
Summary of Ceramic Dates From Upper Strata of Feature

| Stratum |  | Mean Ceramic Date | \%Tra Und N | ted \& arlwa \% |
| :---: | :---: | :---: | :---: | :---: |
| VII | 312 | 1795.5 | 36 | 11.5 |
| XII | 13 | 1791.9 | 1 | 7.6 |
| XIII \& XIV | 109 | 1796.1 | 9 | 8.2 |
| XV \& XVI | 93 | 1794.4 | 6 | 6.4 |
| Total | 527 | 1795.3 | 52 | 9.8 |

The mean ceramic date for strata XVII and XVIIIa and $b$, which immediately overlay the sandstone and brick, is 1783.6 years, based on 31 dated sherds. However, three of these are delftware, and excluding these sherds the mean date is 1792.6. One of these sherds is transfer printed pearlware, not manufactured until 1795 while two sherds, one polychrome delftware and the other Whieldon-type yellow ware, had final manufacture dates of 1780 and 1770 respectively. Two bottle glass fragments were dated to 1780-1810/30.

All of the feature deposits among and below the sandstone slabs (strata XVIIIc, XIX, and XX) yielded a total of only 16 dated sherds. The six dated sherds recovered from the soil among and immediately below the slabs and brick (strata XVIIIc and XIXa) were creamware (two sherds) and pearlware (four sherds). The latter level yielded two pieces of bottle glass dated to 1780-1820/30. Strata XIXb and c yielded 477 ceramic
sherds. However, only two of these, both creamware, were dated. Another burned sherd from the deposits was coded as whiteware. However reexamination suggests it was more probably creamware. Since identification of this sherd was uncertain, it was not considered as a diagnostic sherd. The other sherds from this deposit were non-diagnostic stoneware. Many of these sherds were mended to form a large jug-type vessel.

The soil underlying the above material (stratum $X X$ ) yielded eight diagnostic sherds with a mean ceramic date of 1755.6. These sherds include two creamware, two white salt glaze stoneware, one British brown stoneware and three slipware.

The combined mean ceramic date from strata XIX $b$ and $c$ and $X X$ is 1762.7 . Stratum $X I X$ b yielded 20 pieces of bottle glass dated to 1780-1810/30 and eight pieces dated to 17401790. Thus there is some evidence that the material beneath the stone slabs was deposited somewhat earlier than the overlying strata. A glass bottle ownership seal recovered from stratum XIXb contained the embossed name "H. V(an) Vleck ..78." If this date is in fact 1778, it would be consistent with the ceramic evidence.

## Summary and Interpretation

The material within the feature above the sandstone slabs accumulated after its period of use. The ceramic evidence indicates that deposition took place during the last decade
of the 18th century and/or the beginning of the following decade.

Although the ceramic data suggest that the filling of the feature took place over a short period of time, the presence of distinct strata, the variations in the excavated material among these strata and some of the ceramic data suggest that several loads of fill were deposited at different times.

It should be noted that the mean ceramic date for the deposits within the feature and outside the feature are similar. It is possible that the destruction of the top part of the feature caused material from inside it to be spread over a wider area. Alternatively, the ground level outside the feature could have been raised by filling during the same period that the feature was filled.

The earlier dates for the material below stratum XIXa, although based on a small sample, could have several explanations (if not due solely to sampling error). If the brick and sandstone located at the base of stratum XVIII and in stratum XIX represents the original floor of the feature, the material below this floor could be associated with the construction of the feature rather than its filling. The feature would have been constructed by excavating through all of the earlier landfill to the original river bottom deposits, the supporting logs laid down and the burned glass, ceramics and other refuse deposited to level off the surface prior to the construction of the brick and sandstone floor.

Strata XVII-XIXa could be associated with the destruction of the feature floor and immediate filling. The overlying strata may have been deposited later. This would account for the fact that mean ceramic dates for strata XVIII-XIX fall between the dates for the overlying and underlying material. Alternatively, all of the material within the feature could have accumulated gradually after its period of use had ended.

The feature probably functioned as a cistern. This interpretation requires the identification of the brick and sandstone at the base of stratum XVIII as the feature floor, since a cistern would need to have such a floor. The alternate explanation, that the feature functioned as a privy would imply that no floor was required and that all of the material within the feature was deposited after the period of use. While this is a possible explanation, it would imply that the privy was cleaned out thoroughly before filling, since we did not encounter the highly organic deposits associated with privies.

Outside of the large concentration of brick and mortar in the deeper strata, much of which may have been associated with the disturbance of the floor, most of the feature fill appears to consist of domestic refuse. Densities of nonarchitectural artifacts, bone and fish scale, were moderate to high while those of architectural artifacts were low. Also, there were rather low densities of shell recovered from the feature fill. Artifacts included a number of buttons and
fabric pieces, suggesting that clothing may have been discarded along with the more prevalent bottle and drinking glass and ceramics. A musket ball and an eight pound cannon ball were also recovered from the material in the western part of the feature which was excavated as a single unit. It is also notable that relatively few smoking pipe fragments were recovered.

The material from below the floor consisted mostly of burned bottle glass and stoneware jug fragments. This could be the residue from a commercial, rather than a domestic context, although moderate densities of bone and fish scale were also recovered from this deposit. Some vegetal remains were recovered from strata XIXc and XX as well as stratum XIV in the feature fill.

Additional Documentary Research and Interpretation
Documentary research into the ownership of Lot 12 has provided additional data for the interpretation of the construction sequence.

The pre-excavation documentary research contains a gap in the chain of ownership of Lot 12 between 1734 and 1789, when the recorded owner is Julien Verplanck. The excavation of the glass van Vleck bottle ownership seal in stratum XIX, however, prompted further research on the van vleck family. A family history (Jane van Vleck 1955) provides important data pertaining to the ownership history and interpretation of TC G. The H. van Vleck whose name was embossed on the excavated
bottle seal was undoubtedly Henry van Vleck, a merchant who was born in 1722 and died in 1785. (One of his sons, born in 1753 was also named Henry.) Several sources quoted by Jane van Vleck indicate that the senior Henry van Vleck had both a residence and a store in Pearl street. The family had two other houses, in Broad and Wall streets. The reference to the Pearl Street residence came from a description of the street in 1767 contained in an 1861 account, while the reference to the store was contained in a 1772 newspaper advertisement (van Vleck_1955).--

Records of the Moravian Church cited by J. van Vleck note the fire in New York City on August 3, 1778, destroyed Henry van Vleck's 'best house.' J. van Fleck then goes on to state that

Apparently this was the house on Dock Street (Pearl
Street) just mentioned. Henry bought this property,
with its dwelling, kitchen, well, pumps and gardens in
January, 1759 from the executors of Abraham Lockerman's
estate for 600 pounds, and he sold it after the
Revolution, then minus its buildings [apparently because
of their destruction by the fire], to Gulian ver Planck
for 1,000 pounds 'in silver and gold
frontage of about the lot henty-three feet on Dock Street and
extended back about seventy feet.
The sale to verplanck, indicated by the pre-excavation documentary research to have been the owner of Lot 12 in 1789, indicates strongly that the lot owned by van Vleck was, in fact, our Lot 12. Several interesting facts about the ownership history of the lot emerge from the preceding. First, it is apparent that the lot may have remained in the Lockerman family (spelled Lacherman or Lakerman in the
documentary records) from the late 1690 s when it was bought by Abraham Lockerman until its sale to Henry van Vleck in 1759. If Lockerman had sold or leased the lot in the early 18th century, as suggested by the preliminary research, he would have reacquired it before 1759.

Secondly, the post-mortem transfer of ownership of the house of Tielman van Vleck, the mid-I7th century Dutch settler from whom the van Vleck family is descended, was witnessed by Gulian Verplanck, apparently the ancestor of the Gulian Verplanck who bought Henry's house in 1789. This suggests a long commercial and/or personal relationship between the two families.

If we assume that the bottle seal containing the data ". 78 " dates to the period of occupation of the house by Henry van Vleck then the seal must have been manufactured between January 1, 1778 and August 1778, when the house was destroyed by fire. It is possible that the cistern fell into disuse just before the fire, that debris had just begun to accumulate in it, and that there was a gap between this time and the time that the new owner, Verplank, deposited his trash in the unused cistern. However, the weight of evidence supports an interpretation of the lower strata as being associated with the construction of the cistern. If the construction were undertaken by van vleck, the cistern would have had to have been built just before the fire. Although this is possible, it should be noted that a large quantity of burnt glass,
ceramics and other materials was associated with the glass seal. The most likely interpretation, then, is that the cistern was constructed after the new owner, Verplank, built a new structure on the lot. The debris from the fire was probably still present on the lot, and was used as fill to support the floor of the cistern. The ceramic evidence then, would indicate that this cistern was in use for a period of only 10-15 years, since deposition of debris in the unused cistern apparently began in the 1790s.

It should be noted that $J$. van Vleck (1955) mentions the presence of a well on the van Vleck property. This is not likely to have been for drinking water because of the location of the property on landfill and the saline content of the water, but could have been a fire well. The firewell or cistern may have been rebuilt and/or relocated after the change of ownership.
test cut e
The location of TC E was chosen according to our random sampling plan for testing the landfill deposits. However, several inches below the surface rubble, we encountered a dense mass of melted and fused metal rivets. We removed a portion of this deposit using a backhoe. This mass extended approximately four feet below the surface of the test cut. Beneath the rivets we noted the presence of a black tarry material. Since it was apparent that 19 th-20th century industrial activity had disturbed the earlier deposits at this
location to a substantial depth, we decided to terminate the excavation at this location. Further testing on Lot 12 , discussed below, indicated that this disturbance affected much of the north portion of Lot 12 .

TEST CUT Ag
Our probing and backhoe excavations failed to locate the eastern wall of the early house which we knew had been built on this lot. We located the western wall which was apparently a party wall with the western wall of the Livingston house. The western portion of the rear extension of this house was also found. It is possible that the construction of the 19 thcentury Lot $12 / 13$ boundary wall resulted in the removal of the earlier eastern house wall and the eastern portion of the extension wall. In our attempt to locate the eastern wall of the early structure we excavated a trench just west of the Lot 12/13 boundary wall. The western profile of this trench indicated a line of mortar which we believed could represent the basement floor of an early structure. We therefore placed TC AG, which measured four by four feet, just north of wall \#1 (the common rear wall for several early structures, see map) and one foot west of the Lot $12 / 13$ boundary wall (Figure 47). It was dug so that the west wall of the trench became the east wall of the test cut. The east profile of the test cut was drawn before the test cut was excavated and represents the view looking westward towards the eventual location of the test cut.


FIG 47
TEST CUT AG

Figure 47. Test Cut AG

1. construction rubble
2. charred wood3. gray sand with ash, brick, and mortar
3. yellow-tan silty sand with mortar
4. light brown silty sand with brick and mortar
5. charred wood
6. mixed orange and brown sandy silt
7. brown silty sand

Beneath the surface rubble, approximately six to eight inches below the TC AG datum, we encountered what appeared to be a basement floor (Floor \#2) represented by a layer of plaster and mortar. This is likely to remain from the basement floor of the structure which stood on the lot before the most recent one, which was observed to have a wooden basement floor (Floor \#1). This wooden floor was encountered after the clearing of demolition rubble. The five ceramic sherds recovered immediately above the mortar floor consisted of three pearlware, one creamware and one whiteware sherd. This suggests the demolition of a building in the early 19th century, probably between 1810 and 1840 , prior to the construction of the last building to stand on this lot.

At a depth of approximately $13 / 19$ inches below the test cut datum, we encountered a third "floor." Most of the test cut was covered with charred wood at this elevation, with the northern portion of the "floor" being slightly lower. The demolition of the building which contained this floor can be dated by the deposit of rubble excavated between the first two floors, which represents the debris from the demolition of the building associated with Floor \#3. The mean ceramic date from this deposit ( 46 dated sherds) is 1785.7. The modal type was creamware ( 32 sherds), while only five sherds were pearlware. One sherd was Jackfield-type red earthenware, with a terminal manufacturing date of 1780. The ceramic evidence indicates that basement floor \#2, which had been burned, may have been
associated with a structure demolished in the late 1770 s or $1780 s$ (after the introduction of pearlware). This was most likely the structure owned by Henry van Vleck which was destroyed by the fire of 1778 (see discussion of TC G).

The relatively high density of architectural debris and the non-architectural/architectural artifact ratio of .96 supports the identification of this deposit as debris from structural demolition. The presence of 15 pieces of burned glass lends some support to the connection of this debris with the 1778 fire. Only three smoking pipe fragments with measurable bores and none with makers' marks were recovered from this deposit.

At a depth of approximately $30 / 31$ inches below the test cut datum we encountered a fourth (mortar) floor (Floor \#4). This was the mortar layer originally noted in the profile of the trench dug prior to TC AG. Five ceramic sherds, two delftware and three 17 th-century type earthenware, appeared to be lying on this floor. The material deposited between Floors 3 and 4 could represent material from the demolition of the early structure or fill which was purposely deposited to raise the level of the basement floor. The low density of architectural artifacts and building materials and the higher NA/A ratio (4.8) compared with the deposit above floor \#3 indicates that the latter explanation is more likely.

Most of the material between Floors \#3 and \#4 consisted of a light brown fine sand. It should be noted that the
material at the top of this stratum included pockets of what may be crumbling mortar, perhaps associated with floor \#3. The excavators also noted that the density of artifacts seemed to be greatest at the top of this stratum. This deposit included 10 dated sherds, nine delftware and one 17 th-century earthenware, we well as 23 un-dated sherds. One sherd was cataloged as "creamware." This sherd may have been intrusive from the overlying floor, or may have been incorrectly identified.

The material between floors \#3 and \#4 also included a lens of gray ashy silt with shell which contained a higher density of artifacts than the surrounding soil. The higher non-architectural/architectural artifact ratio for this deposit suggests a different source of the fill than that of the surrounding soil. The ashy deposit also contained 19 pieces of bottle glass dated to $1680-1730 / 40$. This supports an association of floor \#4 with the first structure built on the lot at the end of the 17th century. The 18 dated ceramic sherds consisted of 14 17th-century earthenware and four delftware sherds.

Only five measurable pipe stem bores were recovered from the material between floors \#3 and \#4. The evidence suggests that the period of occupation of the first structure built on this lot, associated with floor \#4, was relatively brief, lasting no later than the first portion of the 18 th century. Several inches of the mottled dark brown sandy silt
underlying floor number three were excavated. The artifacts recovered from this deposit are consistent with those generally present in the landfill. A mean ceramic date of 1690.5 was calculated from 75 dated sherds. A pipe fragment with an H.G. maker's mark (1668-1688) was also recovered. The deposit was characterized by a high density of bone (54.3 pcs/cu. ft) and marine shell $3223.7 \mathrm{gms} / \mathrm{cu} . \mathrm{ft})$. It should be noted that the western profile of the trench dug between TC AG and the Lot $12 / 13$ boundary wall indicated that the deposit of rivets representing the industrial period intrusion began approximately two feet north of TC AG. Field notes suggest that the bottom of this intrusive industrial deposit was slightly above the level of floor \#4.

SHOVEL TEST 18
The eastern profile of a backhoe trench dug east of the Lot $11 / 12$ boundary wall indicated the presence of a regular pattern of stones with burnt material overlying them. We excavated the soil above these stones to determine their nature and their relationship to the other Lot 12 deposits. However, be cause of a lack of time, we were not able to screen all the excavated material; therefore, only the larger artifacts were recovered.

ST 18 extended eastward $33^{\prime \prime}$ from the east side of the backhoe trench. This shovel test uncovered a dry laid flagstone floor which extended through the whole shovel test. The elevation of this floor was approximately one and a half
feet below that of the lowest floor (Floor \#4) excavated in TC AG. The flagstone floor was bordered to the south by a one course thick brick wall with an interior mortar facing. This wall was located approximately four feet north of the back wall of the early structure (wall \#1). A few courses of dry laid stones, possibly the remains of a wall, bordered the flagstone area on the west immediately north of the brick wall, but did not extend for the entire north-south extent of the shovel test.

Excavation of the shovel test began at an elevation approximately 18 inches below the opening elevation of TC AG due to prior removal of the uppermost material during clearing operations. The topmost 21 inches consisted of sandy soil containing a large amount of brick and rubble. From this depth to the flagstone floor at approximately $27-30$ inches, the rubble included a large amount of charred material, with what appeared to be several layers of planking overlying the flagstone floor. The interior of the brick wall also showed signs of charring.

The stratigraphy of this test appeared to be very different from that of TC AG. Our impression in the field was that the flagstone floor may have been part of the same construction phase that produced the industrial debris (melted rivets) in the front part of the lot. While we did not follow the extent of the brick wall at the southern boundary of the flagstone floor, it did not extend across the lot, as it would
have intersected TC AG if it had done so.
TEST CUT F
Test Cut $F$ was placed according to our sampling plan for the testing of the landfill deposits (see Chapter one). Subsequent exposure of the stone walls of the late $17 \mathrm{th}-$ century building on Lot 12 indicated that its location was west of the building's rear extension and therefore on the outside of the early structure built on the lot. TC F was located 40 feet south of the Pearl Street base line and $11 \frac{1}{2}$ feet east of the Lot $11 / 12$ boundary wall (Figures 48,49 ). Immediately below the surface rubble, the excavators encountered the remains of the wooden basement floor of the last building to stand on the lot prior to the recent demolition. Beneath this floor was an 8-14 inch thick stratum (stratum IV) of light brown sand containing a large amount of brick, including many large pieces. Excavation of this stratum exposed two large stones set on top of one another in the south part of the square. Profile drawings indicate a thin charcoal lens in the east wall of the test cut beneath stratum IV. At the same level, a thick gray line extended across the north wall of the test cut. Excavation of the next stratum (V), a medium brown silty sand with rubble, exposed the top of a stone wall in the south part of TC F beneath the two stones mentioned above. The wall consisted of three courses of stones set in mortar. It began approximately 14 inches below the surface of TC F and extended to a depth of

## SOUTH WALL



WEST WALL


FIG 8-9


## Figures 48-49. Test Cut F

1. red sandstone with mortar
2. reddish-brown sand
3. mustard colored silt
4. grayish-brown silty sand with charcoal, brick, and mortar
5. tan sand, stained orange in center of wall
6. gritty orange sand
7. ash
8. brown-gray sandy silt with charcoal
9. light brown sand with heavy concentrations of crushed shell
10. orange brown sand with shell, mortar, and brick
11. tan sand with heavy concentrations of charcoal
12. reddish-brown sand with shell and charcoal
13. mustard colored silt
14. brown sandy silt with crushed brick and clay
15. brown sandy silt with crushed brick and clay
16. tan to medium brown silty sand with flecks of yellow clay
17. reddish-brown sand with shell, charcoal, brick, and clay
18. brown silty sand with heavy concentrations of shell
19. fine reddish-brown silt
20. coarse reddish-brown sandy silt
21. fine reddish-brown silt
22. gray sandy silt with charcoal, shell, and brick
23. light brown coarse sand with shell flecks and orange staining
24. tannish-gray sandy silt
25. light brown coarse sand with shell
26. gray and tan sand with shell
27. gray silty sand with rust staining
28. dark gray clayey silt
29. gray and red silty sand with shell
30. reddish-gray silty sand
approximately $28 / 32$ inches. Stratum $V$ also contained a high density of brick, although not as high as stratum IV.

At the same level as stratum v, a dark grayish-brown sandy silt (stratum VII) appeared immediately adjacent to the stone wall and extending approximately 22 inches north of it. Dark staining from this deposit was visible on the stones of the wall. The deposit contained a high density of brick and mortar as well as moderate densities of both architectural and non-architectural artifacts. The deposit appeared to be a trench associated with construction of the stone wall. Although the profile drawings do not indicate the presence of this "trench" in the east wall of the test cut, photographs indicate an area of the east profile of TC $F$ which was probably disturbed by the construction of the stone wall.

Some dark staining is also visible in photographs of the east wall of the test cut at the base of stratum $v$, but this does not appear as dark as material in the "trench," which yielded 22 grams of charcoal. This "stained" soil was apparently excavated with stratum $V$.

The trench in the east wall of TC $F$ was also dug through a deposit of tan fine sand as well as through stratum V. The tan sand was approximately seven inches thick in the northwest corner of TC F and was excavated as stratum VI in this part of the test cut. This deposit yielded very low densities of cultural material in all categories. Although this deposit was only recognized in the northwest corner of the test cut
during excavation, profile drawings and photographs indicate that it was also present in thin lenses in the north and west walls of the test cut.

Thin lenses of reddish brown sand, mustard colored silt, and light brown sand with crushed shell were present beneath the tan fine sand, These strata (excavated as strata VIII and IX) yielded moderate densities of brick, mortar and shell, but few artifacts. Neither the tan fine sand nor the underlying lenses were present beneath the stone wall in the south part of the test cut. The 17th-century landfill deposits, which will be discussed below, were encountered beneath the thin lenses at a depth of $27 / 28$ inches.

Ten ceramic sherds were recovered from stratum IV. None of these, eight creamware and one pearlware, were dated. The sherds indicate a late 18th-early 19th century deposition of this stratum. stratum V yielded 25 dated sherds with a mean ceramic date of 1731.1. Five of the sherds were creamware, indicating a deposition after 1765. The other dated sherds were "earlier" types, delftware, slipware, white salt-glazed stoneware and 18 th century "midlands" type yelloware. No pearlware was present, indicating probable deposition before the 1780s. The "trench" deposit (stratum VII) yielded one buff slipware and eight creamware sherds, giving a mean ceramic date of l771.2. Since the trench was dug through stratum $V$, but began beneath stratum IV, the excavation of the trench and construction of the stone wall took place after
the deposition of the former stratum and before the latter. Although relatively few ceramic sherds were recovered from these deposits, the available evidence is consistent with the stratigraphic evidence. The tan sand (stratum VII) and the underlying lenses (strata VIII and IX) yielded no datable artifacts.

## Interpretation of Construction sequence

The ceramic data together with the stratigraphic considerations suggest the following interpretation. The lenses immediately above the landfill deposits were probably deposited in the early-mid 18th century. One of these lenses, the mustard colored silt, may have represented the basement floor of a house constructed in the mid-18th century (see below). This building was demolished, probably c. 1760-1780, leading to the deposition of stratum $V$. This deposit may contain debris from the burned van Vleck house (see TC G). Debris from this structure was also excavated from the base of the cistern in TC G. Domestic artifacts from stratum $V$ include a thimble and a fragment of a buckle, and several pieces of vitrified glass. Subsequent to the demolition of the structure, but during the same general time period, a trench was dug through the demolition rubble (stratum V) and the underlying tan sand (stratum VI) and other lenses (strata VII and IX) and the stone wall was constructed in this trench. This may have been part of the Verplank house, constructed after the Revolution (see discussion of TC G). The major part
of the trench may have been on the south side of the wall. The stones on top of the wall may have served as the base for a structural support for this building.

The charcoal lens in the east wall and gray stain in the north wall shown on the profile drawings occurred at approximately the same elevation as the top of the wall and may have accumulated in the basement of the structure during its occupation. At some later date, probably during the early years of the 19 th century, the building associated with the TC $F^{i}$ wall was demolished and the rubble from this building (stratum IV) covered the wall and the structural support base. The last building to stand on the lot was subsequently constructed and the wooden basement floor laid over the rubble of the preceding structure.

## Landfill Deposits

As noted above, the deposits beginning at approximately 27/28 inches below the surface of TC $F$ represent the $17 \mathrm{th}-$ century landfill. These deposits consist of numerous strata and lenses of various soil types which can be divided into several groups for purposes of discussion. Between approximately $27 / 28$ and $40 / 44$ inches below the surface of the test cut, the fill consisted of several strata of brown and reddish brown sand and silty sand which were excavated as strata $X$ and $X I$. This soil did not have a high artifact density but did contain a high shell density, most of which was concentrated in a lens in the north and west parts of the
square which was present toward the top of these deposits. Lenses of reddish brown silt occupied much of the southwest corner of the test cut.

The next group of strata consisted largely of a gray sandy silt containing shell, charcoal and brick. A lens of fine reddish brown silt occurred in the eastern part of the test cut with the gray silt occurring above and below this lens. The gray silt began at approximately 40 inches in the northeastern part of the square, where it was approximately 13 inches thick, and sloped downward to approximately 49 inches in the south and east, where it was only two to four inches thick. This material was excavated as strata XII-XIV. It was followed by a three to eight inch thick stratum (XV) of light brown coarse sand containing shell.

Between a depth of $54 / 59$ inches and 68 inches, the excavators encountered a series of four wood stains which covered most of the square with traces of additional wood stains in the south profile. The soil between the first two wood stains was described as a tan gray silty sand (stratum XVI) with the soil between the second and third, and third and fourth wood stains consisting of a light brown coarse sand with shell and orange staining (stratum XVII). Below the last of the four wood stains a number of large rocks were encountered in the east part of the square between 68 and 72/73 inches. These rocks were included in a stratum of gray and tan sand with shell which was excavated as stratum XVIII.

The profiles show a thin line of dark silt beneath the rocks which may represent another wood stain. Stratum XVIII had the highest artifact density of any of the strata in this test cut, especially in the "non-architectural" category. It also had a high density of shell and bone. This stratum also contained the highest density of coral in this test cut.

The stones in the eastern part of the square extended approximately 18 inches into the square from the east wall and were only one course thick. Although these stones gave the appearance of being purposefully laid, there is no stratigraphic indication that they were part of the base of a wall which was later removed. It is possible that the stones were deposited during the filling process. It should be noted however that subsequent to the excavation of $T C$, a stone wall which was the west wall of the extension of the early house on Lot 12 was exposed just to the east of $T C$. The stones in TC $F$ could have been deposited in connection with the construction of the base of this wall. It should be noted also that in Lot 14 the excavations encountered a low stone wall at the bottom of the landfill. These walls could represent initial attempts to construct foundation walls (or temporary landfill retaining walls) which were abandoned before the landfilling process was completed.

The same soil type excavated as stratum XVIII (gray and tan sand with shell) continued below the rocks and the underlying wood stain to a depth of $72 / 80$ inches, with a lens
of gray silty sand occurring in the northwest corner of the test cut between 72-78 inches. This material was excavated as strata $X I X$ and $X X$. In common with stratum XVIII it contained substantial quantities of coral, shell and bone, although artifact densities were lower.

A two to six inch thick layer of dark gray clayey silt (stratum XXIa) underlay the gray and tan sand beginning at approximately 80 inches. This stratum yielded substantial densities of coral, high densities of bone, and a moderate density of vegetal remains.

The clayey silt was followed by a two to four inch transitional layer of gray and red silty sand and a layer of reddish gray silty sand which was excavated to a depth of 91/92 inches (strata XXIb and XXII). This material contained a decreasing density of artifacts, bone, shell and coral, although substantial density of vegetal remains were recovered from the last excavated level of the reddish sand.

The gray clayey silt (XXX stratum XXIa) most probably marks the beginning of the river bottom deposits in TC F. The artifacts and vegetal material in the underlying sand probably penetrated into the sand from the overlying river bottom silt. The filling process in Lot 12 probably involved the use of boards between successive layers of fill. The boards may have been placed so that cartloads of fill could be dumped away from the original shoreline without sinking into the loose fill material which had already been deposited.

It should be noted that the only substantial recorded quantities of yellow brick in TC F ( 800 grams) originated in the gray clayey silt and underlying deposits which represent the pre-landfilling river bottom, a pattern which appears to characterize the basal deposits in many of the test cuts excavated to river bottom depths. There were no other salient differences between the artifacts recovered from the river bottom and the landfill deposits.

The mean ceramic date calculated for all TC F landfill and river bottom deposits ( 237 dated sherds) is 1685.4 while the pipe stem date (182 measurable bores) is 1674.3).

SHOVEL TEST 11
Shovel Test 11 was placed east of TC $F$ and it was probably located within the boundaries of the extension to the late 17 th-century house which was built on Lot 12. Comparison of the ST 11 and TC F profiles suggests that the TC F strata represented by the narrow bands immediately above the landfill strata may continue to the east and appear in ST 11. These strata yielded no dateable artifacts in TC F. However, in ST 11, a band of yellow brown sandy silt with mortar which underlay what appeared to be a band of decayed mortar yielded two dated sherds: molded white salt glazed stoneware (17401805) and Nottingham stoneware (1700-1810). This suggests that these lenses were probably not associated with the extension to the earliest structure built on Lot 12. They may have been deposited within a later and larger structure and
may have represented a basement floor. Since the wall trench excavated in TC F cut through this layer, it was deposited before the construction of the building associated with this wall. The artifactual evidence suggests that this floor may have been associated with the same building as floor \#3 excavated in TC AG. This would have been the van vleck house. However, the TC AG floor was wooden, and there was no indication of charred wood associated with the mortar floor in TC F or ST 11. The mortar floor, however, could have been associated with an extension to the van vleck house, with the wooden floor confined to the main portion of the structure. Summary of Construction Sequence--Lot 12

An early structure was constructed on this lot contemporaneously with the land filling, either by the water lot grantee, Engell Bergers or by Abraham Lackerman, who owned the lot by 1697. Lackerman is known to have had a house on this lot by 1717. Floor \#4 (TC AG) may represent the basement floor of the main portion of this structure. Sometime prior to the mid-18th century this structure was demolished. This may have occurred in 1727 , when Lots $12 / 24$ were subdivided.

The next structure to be constructed was probably the one occupied by the van Vleck family. Floor \#3 (TC AG) and the mortar band in TC F and ST 11 probably represent the basement floor of this structure, which was destroyed by fire in 1778.

After the Revolution, a new structure was built by Julian Verplack. The rear wall of this structure was uncovered in

TC F, and the TC G cistern was associated with it. Two brick walls oriented in a north-south direction and located south of the east-west wall uncovered in TC $F$ also may have been associated with an extension or outbuilding of this structure. The Verplank house was probably razed at the end of the 18th century or the beginning of the 19 th . The brick wall immediately north of the cistern was probably the rear wall of the next structure to be built on the lot. A succeeding structure was the most recent one to stand on Lot 12. One of the 19 th century structures was apparently used for some type of industrial activity.

## CHAPTER FIVE

## Documentary Research--Lot 13

Lot 13 originated in the western section of Lucan Van Theinhoven's 1687 Water Lot Grant. By 1697 the original 32' X 95' lot (Liber A p53) had been subdivided and a 20'6" X 95' parcel now belonged to Lawrence Wessels, a mariner. Wessels residence is mentioned in the 1703 tax records and depicted in the 1717 Burgis View. A residence occupied by Francis Garrabrandts is noted in the tax records from 1721 to 1724. A series of $1796 / 8$ indicate that Lot 13 had belonged to Julian Verplanck at some earlier date (L51 p394,401,409; L53 p123; L70 p258). Verplanck maintained a residence immediately next door in Lot 12 which he sold in 1795 (L53 p123). There are no tax records available between 1789 and 1795 , when the lot belonged to Garret Ketteltas. Ketteltas sold Lot 13 in 1801 to John Swaztwait and Peter Dumaut, the owners of Lots 12 and 14 (L60 p380).

Lot 13 was vacant between 1807 and 1817 (tax assessment records). There is no indication in the documents whether or not the building which was destroyed at this point was the original 17th century building. The lot belonged to Thomas Snell, Peter Stagg and Thomas Stagg and in 1814 it was sold to John Johnson, William Halstead, George Sharp and James Tuttle (L106 p446; L107 p110). This latter group were also the owner/occupants of Lot 14 and 15 (L105 p426,428; L115
p149P. A new building was erected in 1817 (tax assessment records).

Lot 13 measured $20^{\prime} \mathrm{X} 140^{\prime}$ at this time and in 1818 when the lot was sold to John Oothout it was also subdivided so that the parcel conveyed measured 19' X 70' (L126 pll6). The Oothout family owned the lot until 1882 (L1640 p165) and the building remained in commercial use from 1817 onwards. The New York Directories show a progression of merchants and dry goods stores between 1817 and 1844.

The 1860 tax assessment records describe a four story building measuring 19' $\mathrm{X} 70^{\prime}$. Prior to this time there were two documented building episodes on the lot. The first structures were built in the late 17 th or early 18 th centuries and there is no record that they were destroyed prior to 1807 when the lot became vacant. A new structure was put on the lot in 1817. This building is probably the same one which is described in the 1860 tax assessment records.

## Excavation--Lot 13

During the exploratory phase of the project, and after the common stone near wall (wall \#1) of the 17 th century houses fronting on Pearl street had been uncovered, we placed several probes to determine whether there was a common early house wall separating Lots 13 and 14. ST \#6 was placed at the intersection of wall \#1 and the later Lot $13 / 14$ boundary wall. Since the results of this test were inconclusive, Backhoe

Trench \#9 was dug alongside the Lot $13 / 14$ boundary wall, extending approximately 18 feet south of the Pearl Street base line.

Although these tests did not encounter an early dividing wall, for reasons which will be discussed below, they did suggest the presence of a mortar floor at an elevation of approximately two feet below the top of wall \#1. The results of ST \#12, placed in the west wall of Backhoe Trench \#9 suggested that this floor dated to an early period, perhaps the late 17th century, and thus may have been associated with the first building to be constructed on Lot 13. We therefore excavated TC V (Figures $50,51,52,53$ ), abutting the north side of wall \#l and just west of $S T$ 6. The results of this test cut suggested that artifacts were present on this early floor. Therefore, during the mitigation phase, five additional test cuts, AI (Figure 54), AM (Figure 55), AE (Figure 56), AJ (Figures 57, 58) and AK (Figures 59, 60) were excavated in the front part of Lot 13. Since the primary objective of these test cuts was to expose the early floor and record the patterning of artifacts on it, excavation terminated immediately below the floor. The underlying fill deposits were sampled only in TC V and the shovel tests noted above. The deposits overlying the floor were completely screened only in $T C V$ and TC AE.

In TC AI, AM, $A J$, and $A K$ the deposits were not screened and only the larger artifacts were saved. Nevertheless,

NORTH WALL


PG50-51
TEST CUT V


Figures 50-51. Test Cut V

1. overburden
2. mottled sand with brick
3. beige sand with charcoal
4. light brown sandy silt mottled with black
5. light brown clayey silt mottled with green and orange
6. white sand
7. mortar
8. red sand
9. light brown medium sand with shell
10. green-yellow clayey silt
11. gray sand with silt
12. light brown sand
13. pinkish-tan sand


Figure 54. Test Cut AI

1. brown sandy overburden
2. red clay
3. crushed brick
4. reddish-brown silty sand
5. gray-black sand mottled with orange
6. green clay
7. crushed shell with mortar
8. light brown sand
9. red sand
10. white mortar
11. brown silty sand with charcoal and green silt

Figure 55. Test Cut AM

1. overburden
2. charcoal
3. brick and rubble
4. brown silt mottled with tan and green
5. red gritty sand
6. white mortar
7. brown sand mottled with yellow

Figure 56. Test Cut AE

1. rubble overburden
2. medium brown silty sand with heavy brick rubble
3. light brown sand with mortar and charcoal
4. medium brown mottled silt
5. shell and mortar with light brown sand
6. hard-packed mortar shell floor
7. medium brown sand with chunks of tan and green silt and charcoal


FIG 57-58

TEST CUT AJ

## Figure 57-58. Test Cut AJ

1. tan sand
2. brown sandy silt with stone and brick
3. light tan sand with crushed mortar
4. brick, mortar, and charcoal
5. greenish-brown silt mottled with orange
6. greenish-brown sand mottled with orange silt
7. thin line of fine sand
8. golden-tan fine sandy silt
9. brown sand mottled with golden-tan fine sandy silt
10. grayish-brown sandy silt mottled with charcoal, brick, and green silt
11. greenish-brown silt mixed with coarse brown sand


Figure 59-60. Test Cut AK

1. hard-packed brown sandy silt with brick, mortar, and charcoal
2. tar
3. hard-packed gray sandy silt with pockets of yellow silt, charcoal, brick, and mortar
4. red-brown sand
5. burned area
6. brown silt mottled with yellow silt
7. intrusive area of medium brown sandy silt with patches of yellow clay and rust stains
8. yellow-gray sandy silt with pockets of reddish-brown sand
9. white sand
10. gray-brown sandy silt
11. red silt with patches of gray silt
12. yellow silt with mortar
13. dark gray sandy silt mottled with charcoal, shell, and mortar
14. dark brown silt
stratigraphic data and the provenienced artifacts recovered from TC V and TC AE enabled us to reconstruct the history of the lot subsequent to the construction of the early floor, referred to below as floor \#1. A total of 139 square feet of this floor was excavated, approximately $30 \%$ of its estimated extent.

Excavations in the Northern portion of Lot 13
For purposes of discussion, the stratigraphy in the northern front part of Lot 13 can be divided into three parts, the early mortar floor, the underlying landfill deposits and the overlying deposits. The floor itself appeared to be composed of one or more layers of decaying mortar. According to the excavators' descriptions of the deposit and the profile drawings, a layer of white mortar was overlain in some places by a thin layer of reddish gritty sand or golden tan sand. This could represent decayed brick or mortar. In other places, the hard packed white mortar was overlain or replaced by a layer of crushed shell mixed with mortar. This occurred most noticeably in the eastern portion of TC AE, the southwest corner of TC AI and the northeast corner of TC AK. The presence of these various thin bands may represent attempts to repair the floor. It is also possible that some of the lenses represent the differential process of decay of a single mortar floor.

Seventeen of the 79 ceramic sherds recovered from the floor were dated. Nine green/yellow glazed buff earthenware
and three redware sherds are typical 17 th-century ceramics. The other five sherds are delftware, with three being polychrome decorated. The ceramic data suggest the deposition of artifacts on the mortar floor shortly after landfilling. None of the nine pipe fragments from the floor contained maker's marks. Seven measurable bores include five 5/64 inch and two $7 / 64$ inch bores. One dated bottle glass fragment was manufactured between 1680 and 1730/40.

In TCs $V$ and $A K$, a thin layer of red sand was noted immediately beneath the lowest layer of the mortar floor. In TC AJ a similar layer was described as brown sand and in TC $A M$ and $A I$ lenses of red sand were noted beneath the floor. This sand may have been deposited as a bedding for the floor at the time of its construction.

Twenty three of the 35 ceramic sherds recovered from this sub-floor deposit were dated and yielded a mean ceramic date of 1692.0. The ceramics recovered include 17th-century earthenwares, delftwares, German stonewares and two combed slipware sherds. One sherd of Oriental Export Porcelain with an underglaze painted brown line on the rim had an initial date of manufacture of about 1700 , which supports the above conclusion that the floor dates to immediately after the landfilling. The preceding figures exclude the ceramics from TC V, stratum XIIa, which included artifacts from the surface of the floor as well as beneath it. A Binford date of 1680.2 was calculated from 27 measured pipe bores from this deposit.

None of the pipe fragments had maker's marks. This deposit had a low (9.3/cu.ft.) artifact density.

The slope of the mortar floor is worth nothing. The stone rear wall of the early structure (wall \#1) stepped outward about one foot below its top to protrude some six inches northward into TC V. From a point some 22 inches north of the wall, at which point the floor was approximately 24 inches below the elevation of the top of the stone rear wall of the house, the floor sloped sharply upward to the south so as to cover the top of the inward stepped portion of the stone wall. North of this point (22 inches north of the stone wall) the floor remained approximately level in TC AM and $A E$, some 14 feet north of the stone wall \#1. However, in the southern portion of TC AJ, the elevation of the floor had risen two inches above this level and it continued to rise so that it was six inches above this level in the southern portion of $T C$ $A K$ and 10 inches in the northern portion of $T C A K$, with an additional three inch increase in elevation occurring in the northernmost six inches of $T C A K$. This suggests that the front wall of a building associated with the floor was located immediately north of the north wall of TC AK, with the sharp rise in the floor elevation being similar to that noted next to the rear stone wall.

It should be noted that our original excavation plan called for TC AK to be placed beneath the Pearl Street base line (beneath the southern edge of the pre-construction Pearl

Street sidewalk). However, the presence of a steeply sloping pile of unexcavated rubble beneath and immediately south of the baseline made excavation in that location extremely hazardous.

Deposits Above the Floor
Immediately above the floor (Floor \#1) was a stratum of fill. This deposit consisted mainly of a yellowish brown silt mottled with green and orange silt. In TC $A J$ there was a lens of sandier fill between the silty fill and the floor. The thickness of the fill stratum was greater in the southern part of the excavated area than the northern, decreasing from twelve inches in TC $V$ to four inches in TC AK. As noted above, floor \#1 sloped upward from south to north. Therefore, the effect of the fill was to make the top of the fill more nearly level than the underlying floor. The difference between the elevation of the floor in $T C V$ and $T C A K$ was approximately 10 inches while the difference at the top of the fill stratum was approximately two inches.

Because of time constraints this fill deposit was screened only in TC V and TC AE. Only 22 ceramic sherds were recovered, 10 of which were dated. Eight of these were delftware and two were 17 th-century ceramic types. The mean ceramic date was 1692. Fifteen smoking pipe fragments were recovered, none of which had maker's marks. The bore diameters (2-\#8, 3-\#7, 3-\#6) were consistent with those of the pipe fragments recovered from the landfill deposits. This
silty fill contained a low density of artifacts and faunal materials. The admittedly scanty evidence supports the inference that the mortar floor underlying the fill was exposed for a relatively short period.

In the east wall of $T C A J$ we noted what appeared to be two post impressions approximately 22 inches apart. Both had a rectangular cross-section and ended just below the level of the mortar floor. In neither case did the posts appear to have rotted away in situ. Rather, they were apparently removed and the resulting holes filled-in. The southernmost of the two impressions measured 12 inches across. It was not seen above the level of the mortar floor and appeared to be filled with the same silty fill which immediately overlay the floor. Therefore this post would have been removed after the period of use of the mortar floor and before the deposition of the overlying fill.

The northernmost post impression measured eight inches across. Unlike the other impression, this one began at the top of the silty fill deposit overlying the floor and continued through the mortar floor. It contained a mixture of the silty fill and brown sand. This post probably remained in situ after the filling episode and was removed prior to the next construction episode, discussed below.

A possible third post impression was noted in the west wall of $T C$ AK, approximately 54 inches north of the northernmost of the two impressions in TC AJ. The west wall
of TC AK was located on a line one and a half feet west of the east wall of TC AJ, in which the first two impressions were noted. Like the northernmost of the two AC AJ impressions, this one began at the top of the fill stratum and penetrated the mortar floor. However, unlike the former impressions, which were rectangular in cross-section, the TC AK "impression" tapered from about nine inches at the top to seven inches at the bottom of this disturbance and determine its basal profile. It is likely that this intrusion was the result of rodent activity, rather than being a post impression. It should be noted that the northern profile of TC AI also indicates the presence of animal burrowing.

A stratum of light brown sand containing a very heavy concentration of brick and mortar immediately overlay the silty fill deposit. In some of the test cuts there were indications that a second floor (floor \#2) was present at the base of this brick and rubble deposit and immediately on top of the silty fill. A thin line of burnt material was clearly visible in this position in TC V. In TC AE this "floor" was present as a thin lens of light brown sand containing mortar and charcoal. The profiles of TC AK also show a thin line of burnt material in some locations and at one place a thicker piece of burnt wood was noted between the silty fill and the rubble.

The rubble stratum was screened only in TC $V$ and TC AE. This material yielded 382 ceramic sherds, 288 of which were
dated: $56.6 \%$ of the dated sherds were creamware and $21.7 \%$ delftware. The mean ceramic date was calculated at 1766.8 . The cumulative frequency curve indicates that only some four percent of the ceramics were of types manufactured after the introduction of pearlware. Of these, the latest initial date of manufacture, 1795, is associated with one sherd of underglaze polychrome painted pearlware. The only "19th century" ceramic type present was "Rockingham"-type yelloware (two sherds). However, manufacture of this ceramic type actually began in approximately 1780.

The presence of the large quantity of construction rubble in this deposit suggests that it was the result of demolition of a structure which stood on the lot. The tax records (see documentary research section) suggest that a structure was demolished on Lot 13 shortly before 1807. The ceramic evidence is not inconsistent with an association of the excavated rubble with this depositional event, although somewhat more pearlware could be expected to be present, given this association.

The date of construction of this building is more uncertain. Except for two sherds of 17 th-century type red earthenwares and one bellarmine type sherd, all of the ceramic types represented in the rubble deposit were still being manufactured at the time of the introduction of creamware in the 1760 s . Thus the structure represented by the rubble deposit could have been constructed as late as c. 1770, after
the introduction of creamware. If the structure were constructed at this time, however, it is likely that there would not be a large number of artifacts in the deposit associated with the occupation of the lot during the early 18th century. But $35 \%$ of the ceramic sherds in the rubble deposit could have been manufactured before the introduction of creamware, suggesting the possibility of an earlier construction date.

The data suggest two possibilities. First, there may have been only one structure built on this lot between the early 18th and early 19 th centuries, with the ceramic types in the deposit representing this entire time period. Alternatively, there may have been two structures built during this period, one standing until the mid 18 th century and the other constructed later. If this were the situation, there would have been two separate depositions of rubble, each associated with one of the structures. In this case, the demolition of the later of the two structures would have had to result in the removal of the basement floor of the earlier structure, since no such floor was noted in the rubble deposit. Only one possible floor associated with this deposit (floor \#2, noted above) was encountered immediately overlying the silty fill. It should be noted that the shape of the ceramic cumulative frequency curve tends to support the "two structure" interpretation.

In contrast with the large quantity of ceramics, only 43
smoking pipe fragments were recovered from the rubble deposit. This paucity of smoking pipe fragments was noted in other late 18th century deposits on the site. Only 25 of these 43 fragments had measurable bores, yielding a Binford date of 1743.6. However, 32 of the bores were \#4, indicating a late 18th-century primary deposition for at least a portion of the deposit. Two pipe fragments, from TC $V$, had identifiable maker's marks: TD and IW. The latter mark dates to the 17th century. The dating of the former mark is uncertain.

A George II coin, dating from 1744-1757, was recovered from the rubble deposit in TC AE. This could suggest a date of construction earlier than the introduction of creamware. On the other hand, it is not unusual for coins to be lost well after their date of manufacture. Four glass vial fragments dating to 1800-1880 were also recovered from the rubble deposit in TC V. This date would not be inconsistent with the 1807 date of structural demolition noted above.

Another mortar floor (floor \#3) is visible above the rubble stratum in photographs and/or profile drawings for TC V, AM and AE. It is possible that disturbance by the backhoe removed this floor in the other test cuts prior to excavation. This mortar floor was excavated separately only in TC V. of the six dated ceramic sherds recovered, five were 19thcentury European-American hard paste porcelain, the sixth was white salt glazed stoneware. No measurable pipe stem bores or fragments with maker's marks were recovered. The ceramic
evidence would be consistent with the documentary research, which indicates that demolition of the preceding structure took place in 1807, as indicated above, with the building associated with floor \#3 being constructed in 1817. The mortar floor (floor \#3) was probably the basement floor of this structure.

The concrete basement floor (floor \#4) of the latest building to stand on Lot 13 was removed by the backhoe prior to excavation, but was still present in the north wall of TC AK. Approximately five inches of gravel bedding and tar underlay this floor.

## Landfill Deposits

The landfill deposits which underlay the early mortar floor (floor \#1) were exposed and sampled by TC V, ST 6 and 12, and Backhoe Trench 12. The fill deposit below the floor was described as a brown to grayish brown silty sand containing light to moderate concentrations of shell with some inclusions of a green/yellow silt. This fill deposit was eight to 16 inches thick, and was thinner in the southern portion of the lot, corresponding with the lower floor elevation.

The base of wall \#l was exposed to its full depth in TC $V$ and was found to end approximately at the base of this landfill deposit. The total height of the wall was 32 inches, with an additional narrower "cap," approximately six inches thick set on top of this. The mortar floor was approximately

18 inches below the top of this cap.
The ceramics recovered from the four excavated landfill levels consisted mainly of 17th-century earthenware types and delftwares. Eight to fourteen percent of the sherds were slipwares and northern European stonewares. The four excavated levels yielded mean ceramic dates of 1696.5 (48 dated sherds from five test cuts), 1693.4 (eight dated sherds from three test cuts, 1684.5 ( 70 dated sherds from TC V) and 1678.1 ( 57 dated sherds from TC V). The increasingly earlier dates are due to an increasing proportion of 17 th century earthenwares. The decrease in mean dates with depth are not significant, however, due to the relatively small number of sherds, especially from the second level, and the fact that the two lower levels were only sampled in one test cut.

It should be noted that the first excavated landfill level contained one creamware sherd and one sherd of soft paste porcelain, which are almost certainly intrusive. These sherds were recovered from TC J, in which the post impressions (discussed above) were noted. These intrusive sherds could have been associated with these post impressions.

No pipe fragments bearing maker's marks were recovered from the landfill strata. The Binford dates calculated for the 112 total measurable pipe bores recovered from the four landfill levels (1677.4, 1686.6, 1683.1) do not exhibit the same pattern of decreasing dates as do the ceramic sherds. This tends to support the conclusion that the results of the
ceramic date calculations are not significant in terms of indicating temporally distinct land-filling episodes.

Below the landfill deposits, we encountered a stratum of tan/brown sand which became redder with increasing depth. At the top of this deposit there was a substantial number of rocks with some large boulders. The top of this rock and boulder deposit was exposed in TC V, ST 6 and Backhoe Trench 9. About 12 feet south of the Pearl Street base line, at the approximate location of ST 12, the deposit of rocks appeared to terminate in a clearly defined east-west line. There were relatively few rocks for a distance of some four feet north of this line. However, at this point, two very large boulders were uncovered in Backhoe Trench 9. The largest of these measured more than three by four feet and was more than a foot thick. One of these boulders had what at first appeared to be a man-made beveled cut approximately four inches in length along one of its top edges. However, in the opinion of our geological consultant, Dr. Steven Selwyn (see Appendix C) this was probably produced by natural fracturing of the rock.

Considerations of stratigraphy both within this lot and for the site as a whole (see Chapter Nine) indicate that the rocks and boulders and the associated sand, were most likely deposited by natural processes and probably represent a "beach type" environment which was covered by the East River only during a portion of the tidal cycle.

The deposit of tan/brown sand was sampled in TC V. Only
nine dated sherds were recovered. Seven of these were delftware and two seventeenth century earthenware types. only four measurable pipe stems were recovered, one of which had a \#9 bore. The landfill deposits contained no stems with this size bore, supposedly manufactured only between 1620 and 1650 . One pipe fragment had the partial maker's mark "W..." on the heel. This deposit yielded an artifact density of only 4.1 artifacts per cubic foot and also had very low densities of bone, shell and building materials. This is consistent with the interpretation of this deposit as a pre-landfill deposit. Unlike pre-landfill deposits from elsewhere on the site, however, the red/yellow brick ratio was greater than one (1.0).

Lot 13 East Stone Wall
Test Cut AM was extended eastward to intersect the Lot 13/14 boundary wall, which represented the east wall of the most recent building to have stood on Lot 13. The builder's trench for this cut stone wall appears to have cut through mortar floor \#3, indicating that the construction of the wall belongs to a later building phase than the floor. This firmly associates the Lot $13 / 14$ boundary wall with the latest basement floor (floor \#4). The wall trench penetrated into both the rubble deposit which underlay floor \#3 and the lower green silt deposit. However, it did not reach the bottom of the latter deposit. The base of the builder's trench and of the cut stone wall was reached at a depth of 20 inches below
the northwest corner elevation of TC M. The elevation of the base of this wall is just below that of the "cap" which overlay the early fieldstone wall exposed in TC V and TC AI.

At the base of the cut stone wall, we encountered larger footing stones for the wall. The silty fill which overlay the early mortar floor (floor \#1) was immediately beneath these footing stones. At this point, we extended TC AM further to the east, undercutting the cut stone Lot $13 / 14$ boundary wall. Ten inches to the east we encountered the west side of an earlier wall. This was apparently the east wall of the structure associated with the stone rear wall (wall \#1) and the mortar floor \#1. There appeared to have been some disturbance of mortar floor \#1 adjacent to this east wall. This disturbance may have occurred at the time that the silty fill was deposited over floor \#1, an event which was probably associated with the construction of the second building on Lot 13.

Lot 13 West Stone Wall
The Lot $12 / 13$ boundary wall, which represented the west wall of the most recent structure to have stood on Lot 13, was encountered in TC AJ. This cut stone wall was of similar construction to that of the Lot $13 / 14$ boundary wall. The builder's trench for this wall began at approximately the same elevation as the trench for the east wall and also penetrated the rubble and silty fill strata. The footing stones for the west wall were encountered at about the same elevation as
those of the east wall. However, because of the higher elevation of mortar floor \#1 at the location of TC AJ than at the location of TC AM, the installation of the wall and footing stones appears to have disturbed mortar floor \#1 at the former location.

Due to a lack of time we were not able to undercut the later wall in TC AJ to determine whether an earlier wall was present beneath the later wall, as was the case in TC AM. Summary of Lot 13 Construction Sequence

The fieldstone foundation walls laid in Lot 13 preceded the late 17 th century landfill which was deposited around these walls, as was true in other lots with early stone walls. Floor \#l was constructed above the landfill deposits. The presence of this floor over the entire portion of Lot 12 within the early house walls, and the presence of artifacts on this floor suggests that this was probably the basement floor of an early structure rather than an exposed surface related to the landfilling or wall construction process.

At a time not too much later than the construction of floor \#1 the level of the basement was raised by the deposition of the silty fill, and another floor, perhaps wooden, was laid over this fill. The deposition of fill may have been an attempt to correct the downward slope in the earlier floor. This filling and floor construction may have been associated with the reconstruction of the early building, apparently built of brick. It is possible that this structure
was demolished and another brick building constructed c. 1770, and whichever building was standing at that time (the first or a possible second one) was torn down in 1807. The demolition of this structure or structures led to the deposition of the rubble stratum. Artifacts associated with the period of occupation of the structure or structures were incorporated in the deposit. A new structure was built on the lot in 1817, and mortar floor \#3 was apparently the basement floor of this building. Later, the most recent building to stand on the lot was constructed. The concrete basement floor of this structure represents floor \#4.

Analysis of Floor \#1
A total of 50 artifacts were recovered from the early mortar floor (floor \#1). These mostly represent domestic refuse, with the deposit having an NA/A ration of 9.0. The non-architectural artifacts include 29 ceramic sherds, two bottle glass fragments, nine smoking pipe fragments, and four pieces of thin hollow curved tubing (which fit together) manufactured from an alloy of copper. These could conceivably represent a portion of a handle, or some sort of ornament. One lithic fragment was also recovered, probably associated with gunflint manufacture. The architectural artifacts consisted of one piece of window glass, one nail, and one fragment each of delft tile and pantile. A total of 40 bone fragments, 2,858 grams of oyster shell, and 12 grams of clam shell, 12,954 grams of red brick, 268 grams of yellow brick,

601 grams of mortar, and 152 grams of miscellaneous metal were also recovered from floor \#1.

Analysis of the patterning of artifacts recovered from the floor suggests that the heaviest concentration occurred in the southeast corner of the basement area. This area yielded major portions of a yellow glazed/buff paste earthenware vessel (TC V and AI) and a red earthenware pipkin (TC AI). Fifteen of the 29 ceramic sherds (51.7\%) and the copper "tubing" were recovered from TC AI. The artifacts from TC $V$ which were not on the floor are not included in this analysis unless otherwise stated. The artifact density appears to have been fairly consistently low in the other test cuts. However, 31 of the 40 bone fragments ( $77.5 \%$ ) were recovered from TC AK, in the northeast portion of the lot.

The floor in TC AM was covered with a large number of brick fragments and stones. The patterning of brick and mortar debris in the other test cuts indicates a greater concentration on the east side of the floor, especially in the southeast corner. $67.3 \%$ of the red brick fragments were recovered from TC AM, and 98.3 \% originated in TC AM, AE or AI. All of the yellow brick was recovered from TC AE.

The concentration of artifacts is probably related to refuse disposal practices, while the deposition of the brick and mortar debris probably occurred during repair or demolition work prior to the deposition of the silty fill deposit over floor \#1. Despite the presence of artifacts and
faunal remains on the floor, the density of the deposit does not suggest that the basement of this structure served as a major locus of waste disposal. At least some of the artifacts recovered may represent primary deposition, especially the earthenware vessel sherds mentioned above, which were found adjacent to one another.

## Excavations in the Southern Portion of Lot 13

Two test cuts, $D$ and $W$, were placed in the portion of Lot 13 south of the rear wall (wall \#1) of the main portion of the early house to stand on the lot. TC D was placed according to our random sampling plan for testing the landfill deposits. As it happened, this test cut encountered the western stone wall of the extension of the early house and a wooden feature located just west of the southwest corner of this extension. TC W was subsequently placed immediately south of TC D to more fully excavate this feature.

TEST CUT D
TC D was located $46 \frac{1}{2}$ feet south of the Pearl Street base line and eight and a half feet east of the Lot $12 / 13$ boundary wall (Figures 61, 62). The first excavated stratum, two to six inches thick, consisted of sandy soil containing the crumbling remains of the cement basement floor of the most recent Lot 13 structure. This floor had been removed by backhoe prior to the excavation of TC D.

At approximately 55 inches below the surface of TC D a series of strata were encountered which covered the entire


## Figures 61-62. Test Cut D

1. light brown sandy silt with mortar and rubble
2. dark gray sandy silt with charcoal and rubble
3. mottled brown and green sandy silt
4. mottled brown and red-brown sandy silt with rubble and clay lenses
5. tan sand
6. yellow-brown sandy silt
7. red silt
8. dark brown and black sandy silt
9. gray silty sand
area of the cut and, as discussed below, probably represent the pre-landfilling bottom of the East River. Between stratum I and this depth the test cut revealed a complex series of strata associated with the stone wall and the wooden feature which were partially contained within this excavation unit. The stone wall was encountered in the eastern part of the cut, and it extended 18 inches west of the east wall of TC D. The top of the stone wall was encountered at a depth of 13 inches in the northern part of the test cut and 29-30 inches in the southern portion. The slope of the top of the wall is of significance in the interpretation of TC D as discussed below.

The wooden feature was a rectangular "box" a portion of which extended into the southwest corner of TC D. The northern portion of the box protruded 20-22 inches from the south wall of $T C D$ and 26-27 inches from the west wall. The top of the wooden sides of the box were encountered at a depth of 28-32 inches, the same depth at which the stone wall was encountered in the southeast corner of the test cut. The wooden floor of the box was encountered at a depth of 50-51 inches with the wooden sides ending slightly below the floor. Wooden wales which provided structural support were encountered on the north and east sides of the feature at a depth of 37 inches. A more extensive description of the feature, and of TC which more fully exposed it, is given below.

For the most part, the landfill deposits in TC D were confined to the northern portion of the square. These
deposits had been disturbed by the installation of the wooden feature in the remainder of the test cut. The landfill began at a depth of 18 inches. It extended across TC D from east to west, but only extended some 14 inches south of the north wall of the test cut at the top of the deposit. It extended 20 inches south of the north wall at the base of the deposit at a depth of $52-56$ inches. The landfill deposit was also present beneath the stone wall on the east side of the test cut: the lowest course of the wall ended at $40-42$ inches. Thus, the disturbance associated with the installation of the wooden box did not extend beneath the stone wall. This indicates that the wall was constructed before the wooden feature, and this interpretation is supported by the artifacts recovered from these deposits, as discussed below.

The landfill deposits in TC D, excavated as stratum VIbe, consisted of a red sandy silt containing a low density of cultural materials. Only seven dated ceramic sherds and four pipe stem fragments were recovered. The sherds recovered are consistent with the content of the landfill strata excavated in other test cuts.

Immediately above the landfill deposit in the northern portion of $T C D$ was a very thin (one to two inch thick) deposit of brown and orange mottled sandy silt containing charcoal (stratum VIII). The fourteen datable ceramic sherds recovered from this deposit were all delftware. These include five blue-glazed delft sherds, not introduced until c. 1690.

Although this is a small sample, the ratio of blue to white glazed delft, higher than that encountered in the landfill strata in this and other test cuts, suggests a deposition shortly after the landfill. The calculated mean ceramic date is 1712.5. The date calculated from the 17 measurable pipe bores from this stratum is 1691.7. A total of 41 ceramic and smoking pipe fragments were recovered from stratum VIII. The only architectural artifact recovered was one window glass fragment. The number of artifacts is not great, but the artifact density from this thin deposit is high (420 artifacts/cu.ft.). Although 1000 grams of red brick fragments were also recovered, the high NA/A ratio (41) and the fact that a total of 151 pieces of bone (a density of 1,510 pieces/cu.ft.) were recovered, suggests that this deposit may represent the remains of a domestic midden. Stratum VIII was located above the elevation of the top of the stone foundation wall exposed in the eastern portion of TC D. The stratigraphy and the ceramic data suggest that this stratum dates to the period of occupation of the structure associated with the stone wall, accumulating outside of the house extension.

In the northwest corner of $T C D$, a layer of tan sand (stratum VII) was excavated immediately overlying the possible domestic midden (stratum VIII). Profile drawings indicate that this stratum was nine inches thick in the extreme northwest corner and only one to four inches thick in the center of the north wall. Only the lower two inches of this
deposit was excavated separately. The upper portion was included in stratum IVb. This stratum may have originally been thicker, with a later disturbance removing the upper portion in the middle of the north wall of TC D. This deposit contained a very low density of cultural material and only one ceramic sherd (polychrome delftware). The stratigraphy indicates that this stratum was deposited before the installation of the wooden feature.

The wooden feature was installed by means of a "pit" which was dug through the earlier tan sand, brown silt/charcoal, and red sand landfill strata which were discussed above. Since the east wall of TC D was formed by the earlier stone wall, the profile of the pit is shown only on the west wall profile.

The intrusive pit began six to eight inches below the test cut surface. However, it is likely that the ground surface at the time the pit was dug was at a higher elevation and was lowered by subsequent construction episodes. A number of soil strata were excavated within the pit, with the two major strata being differentiated horizontally rather than vertically. These two strata were recognized by the excavators at a depth of 20-25 inches although they actually began above this depth. At the 20-25 inch depth the two strata located at the same depth extended approximately 0-10 inches and 10-26 inches, respectively north of the wooden feature. The outer (northernmost) stratum consisted of a
mottled brown and green sandy silt. The inner stratum consisted of a red silty clay. The same silty clay was packed between the wooden feature and the stone wall on the eastern side of the test cut.

The base of the clay and silt deposits was reached at the same elevation as the base of the wooden feature. Both of these deposits extended above the top of the wooden sides of the feature, which suggests that the top of the feature may have once been higher than at the time of excavation.

In addition to the above two strata, a third, thin layer of mottled gray and brown silt was present at the bottom of the pit, underlying both the clay and the green silt. The morphology of the clay and green silt strata within the pit and the relatively narrow width of the clay stratum suggests that these soil deposits represent two types of fill placed within the pit after the construction of the wooden feature, rather than superimposed pits. The most likely explanation was that the pit was dug through the landfill and early postlandfill deposits and the wooden feature installed. The gray/brown silt layer probably accumulated at the base of the pit during the installation process. Then the clay was packed around the feature for some reason probably related to its function. The remainder of the pit was then backfilled with the mottled green sandy silt.

Since, as noted above, the material at the top of the pit was not excavated separately, the number of artifacts
available for dating these events was reduced. However, the artifacts recovered from the gray/brown silt at the base of the pit (stratum $X I$ ) and green silty fill (stratum IVc-e) suggest that the wooden feature was installed in the early part of the eighteenth century, which is in accord with the stratigraphic evidence. In addition to the delftware, slipware, and buff, salmon, and red bodied earthenwares which characterize the earlier landfill deposits, the silt deposits within the pit yielded one sherd of white salt glazed stone ware (stratum IVC), two sherds of mottled glaze, "Midlands"type yelloware (strata IVe and XI) and one sherd of Nottingham-like stoneware (stratum XI). In addition stratum VIa, which contained material from both the mottled green silt and the landfill deposits, yielded three additional sherds of mottled glaze yelloware and one sherd of white salt glazed stoneware. These predominately 18th century ceramics most likely originated in the earlier deposit (stratum IV). The mottled glaze yelloware has manufacturing dates between 16601750: the Nottingham stoneware, 1700-1810; and the white salt glazed stoneware, 1720-1805. Creamware and pearlware, ceramic types characteristic of the latter half of the 18 th century are absent from these deposits. The mean ceramic date calculated for the 24 dated sherds recovered from strata IVce and XI is 1711.5. The pipe stem date for these strata (20 measurable bores) is 1707.1. A pipe bowl fragment recovered from stratum IVd had the maker's mark "CH," attributed to

Charles Hickes, who manufactured pipes between 1700 and 1740. The artifacts from these strata suggest that the wooden feature was installed after 1700 and before the introduction of creamware in the 1760s. Few datable artifacts were recovered from the clay deposit (stratum $V$ ), the only ceramics being two delfware sherds.

The deposits inside the wooden feature were excavated as stratum IXd-g. This deposit was characterized by a high density of red brick and mortar and a low density of other types of cultural material. While the soil immediately overlying the feature also contained a high brick and mortar density, the TC D profile drawings and photographs indicate that the deposit below the top of the wooden sides of the feature was different than that which overlay the feature.

Few ceramic sherds were recovered from the feature deposit in TC D. Level IXd yielded one creamware and one soft paste porcelain sherd, suggesting deposition in the latter part of the 18 th century. This level, however, probably was a mixed deposit containing material both from within the feature and from the deposit immediately above it. Only two datable sherds were recovered from levels IXe-g. One was Astbury stoneware, dating to the second quarter of the 18 th century and the other sherd was 17th century Bellarmine-type stoneware. Thus, the scanty artifactual evidence supports the conclusion based on stratigraphic analysis that the material within the feature is a separate and earlier deposit than the
overlying strata.
A number of strata were present in the southern part of TC $D$ above the wooden feature. Stratigraphic analysis indicates that these were deposited subsequent to the removal of the uppermost portion of the feature. The fact that the clay which is packed around the feature extends above the present height of the wooden sides of the feature suggests that the sides originally were higher than when excavated. The absence of wood stains in the south and west profiles indicates that the topmost portion of the wooden sides did not decay naturally but were deliberately removed.

The west wall profile suggests that a pit was dug downward beginning about two feet south of the north wall of TC D, cutting through the silt and clay fill of the earlier pit associated with the installation of the feature. The top of this later intrusion sloped downward gradually and then appears to have been dug down more steeply over the feature itself. The profile of the east wall of TC $D$ shows that the stone foundation wall was removed to a greater depth in the southern part of TC D than in the northern part. This suggests that the stone foundation wall was demolished at the same time that the topmost portion of the feature was removed, with the wall being demolished to a greater depth in the south part of TC D in order to permit the demolition of the feature. Another possible interpretation of the above events is that there were two separate disturbances. The first would
have been dug straight down to remove the feature, with the second more gradually sloping disturbance removing the stone wall in the northern part of the test cut and erasing the indications of the earlier disturbance. This interpretation is less plausible than the above, however, because it would require the southern part of the wall to have been demolished by the digging of an almost vertical trench while the northern part of the stone wall remained intact. The most likely explanation is that the wall and the feature were removed at the same time.

Reconstruction of the events which occurred subsequent to the demolition of the stone wall and removal of the upper portion of the feature is more difficult. The excavators encountered the remains of a number of wooden boards, oriented east-west, at a depth of 21-22 inches. A dark brown stain of decayed wood was noted beneath the boards. These boards were present in the south wall of the test cut and extended only a foot further to the north, not as far as the northern extent of the wooden feature. The boards extended across the test cut from east to west. This suggests that there was no structural relationship between the feature and the boards. The soil below the wood and above the deposits within the feature was excavated as strata IXb-c. The soil immediately above the wood was excavated as stratum IXa. All three levels were described as consisting of brown and reddish brown mottled sandy silt. However, the soil above the wood was
described as having clay inclusions, while the soil below contained more rubble. Both deposits had a high density of brick and mortar, with the deposit beneath the wood having the highest density. It is possible that the material within the feature which was removed with the top portion of the feature was mixed with other soil and backfilled into the trench which removed the top of the stone wall and the feature prior to the installation of the wooden boards.

The mean ceramic date calculated for strata IXb-c, beneath the boards, was 1771.2 based on 18 dated sherds. The date from stratum IXa, based on 12 dated sherds, is 1762.6. This difference is probably not significant, and there may have been little or no time lag between the deposition of the material above and below the boards. The presence of a large percentage of creamware sherds in both deposits suggests that they derive from the second half of the 18 th century after the introduction of this ceramic type in the 1760s. Each deposit also yielded two pearlware sherds, one of which was annular decorated. This further narrows the probable date of deposition to approximately the last decade of the 18 th century. Stratum IXa yielded a fragment of a Tippet pipe manufactured prior to 1720. It is likely that this pipe fragment was redeposited when the pit which removed the top part of the feature was backfilled.

In the southern part of $T C D, a$ deposit of dark gray sandy silt with charcoal and rubble overlay the brown and
reddish brown mottled sandy silt deposits. This stratum appeared to be limited to the area which was excavated to remove the tops of the stone wall and wooden feature and which was subsequently backfilled. Stratum III contained this material. However, it should be noted that above stratum IXa, the excavated strata contain material from more than one deposit. This mixing occurred because the excavators were not able to distinguish among the sloping strata and lenses and the square was consequently excavated as a single unit with a resultant mixing of artifacts from the various strata. Stratum III yielded creamware and pearlware ceramic sherds in proportions which suggest deposition in the latter decades of the 18th century, the same period as the underlying strata
 was probably additional fill deposited to level the ground surface, rather than being an accretional deposit. Although the fact that this material was excavated as part of a mixed stratum makes further analysis difficult, artifacts recovered from stratum III suggest that this soil may contain material from a domestic midden which was redeposited as fill. These artifacts include four buttons and an unusual lead bale seal. It should also be noted that this material contains a significant proportion of clam shell. This contrasts with the shell from the 17 th-century landfill and earlier 18 th-century deposits which yielded nearly all oyster shell. Additional mottled rubbly soil was deposited between the
dark gray silt and the remains of the cement floor of the most recent building on Lot 13. This material probably overlay most of TC D, although there was a disturbance in the northern part of the square as indicated by photographs of the north wall. The mottled rubbly soil contained 150 burned EuropeanAmerican soft paste porcelain sherds which could date to the latter part of the 18th or the 19th century. Additional sherds of this type were excavated with the overlying and underlying material. The presence of creamware and Nottingham-like stoneware in this soil suggests deposition within the same general period as the deposits discussed above.

## Sub-landfill Deposits

The base of the red sand which probably represented the late 17 th century landfill ended at a depth of $52 / 56$ inches, approximately the same depth as the base of the pit dug to install the wooden feature. Between 52/56 inches and 88/90 inches a number of strata described as gray, light gray and dark gray sandy silt were excavated. The strata varied in the amounts of silt and clay components in the soil matrix. Some of these strata yielded a large amount of wood and a high density of vegetal remains. Most of the latter consisted of peach pits, hickory huts, acorns or hazelnuts, and cherry pits. Squash and watermelon seeds, chestnuts, walnuts, and beach plum seeds were also recovered, with some seaweed also present. Some coconut fragments were also recovered as well
as a small amount of coral. Moderate densities of shell, bone and artifacts were present in these strata.

At $88 / 90$ inches red sand was encountered. The topmost two to four inches of this sand was excavated and proved to be culturally sterile. The water table was encountered at the bottom of this excavated level, at approximately 93/94 inches.

The mean ceramic date calculated from the 47 dated sherds from the silt deposits is 1675.5. The pipe stem date, based on 119 measurable bores is 1691.4. Two "WE" maker's marks and one "HG" were present on smoking pipe fragments. Both marks date to the second half of the 17 th century.

The gray silt deposits were most likely the result of river bottom silting. It is also possible that the area was once marshy, accounting for the build-up of two and a half feet of deposits and their high organic content. By the 17 th century the marsh was probably covered by the river and the cultural materials in it were most likely thrown into the river from the shore or boats and settled into the silt.

TEST CUT D
The excavation unit designated as TC $D^{\prime}$ was placed just to the east of $T C D$, on the east side of the stone wall uncovered in TC D. TC D' extended four feet from east to west and three feet from north to south, with the north wall aligned with the north wall of TC D. The major purpose of this test cut was to examine the stratigraphy inside the extension of the early post-landfill house built on Lot 13 in
order to determine if any floors of basement deposits remained intact. An additional objective was to determine whether there was a wall trench associated with the stone west wall of the extension, uncovered in TC D. Since the objective was to examine the stratigraphy, the soil removed was not screened. However, the larger artifacts encountered during excavation were saved for diagnostic purposes.

The west wall profile of TC D' was located just east of the stone wall. The red sandy silt landfill deposit which was noted in the northern part of TC $D$ and beneath the stone wall was also present in TC D'. This deposit started at approximately 10-12 inches below the surface in the north part of $T C D^{\prime}$ and at $16 / 20$ inches in the south part. It was excavated to a depth of $26 / 28$ inches.

The west wall profile of $T C$ D' above the landfill deposit shows two strata of gray black clayey silt with orange mottling separated by lenses of tan/brown sand and reddish silt. These strata began at higher elevations in the northwest corner of TC D' and sloped downward to the east and south. These strata were present in the south wall of TC $D^{\prime}$ but were not present in the east wall. The base of the lowest of these strata as seen in the west wall of the test cut generally followed the elevation of the top of the stone wall as recorded in TC $D$.

The TC D' east wall profile drawing shows two lenses of dark gray sandy silt which do not extend across the entire
profile. Examination of photographs, however, suggest that the two lenses did, in fact extend across most of the profile and were separated horizontally by an area of reddish soil. This lens may have represented the eastern edge of the gray black silt present elsewhere in TC $\mathrm{D}^{\prime}$.

The above stratigraphy suggests that the excavation which removed the top of the stone wall and the wooden feature began at the location of the north wall of TC D and sloped downward both to the southwest, to remove the wooden feature, and to the southeast, to remove the rear stone wall of the building extension, which was located approximately six and a half feet south of the north wall of TC D and TC D'. Several large rocks were present in the south part of TC D' at a depth of approximately 14 inches. These may have been removed from the stone wall and incorporated into the excavation backfill.

It appears that a thin layer of gray black clayey silt extended across the north wall of TC D'. This may represent the same material incorporated into the backfill of the excavation which removed the stone wall and the wooden feature which was spread across a wider area than that directly affected by the excavation during the backfilling process.

A thin (two to three inch) stratum of mottled sandy silt with some rocks and cobbles was present below the rubble associated with the cement floor of the latest building to stand on Lot 13, and immediately above the topmost gray black silt stratum. This material accumulated or was deposited at
some time after the removal of the feature and stone wall. It is not certain if this is the same stratum shown beneath the topmost rubble in the east wall of $T C D$.

The TC $D^{\prime}$ excavation did not detect $a$ wall trench associated with the stone wall, indicating that the wall was constructed on the pre-existing river bottom silt, and the landfill deposited around it.

It should be noted that a very thin lens of gray silt was recorded on the north and west wall profiles of TC $D^{\prime}$ at $a$ depth of $16^{\prime \prime}$, and was also noted by the excavator on the floor of the test cut. The lens was not present in the south portion of the test cut due to the intrusive event which removed the top of the stone wall and the feature. The red sandy silt landfill deposits were present above and below this thin silt lens.

The north wall profile shows this lens ending approximately six inches east of the west wall of TC D'. This lens was very compacted and peeled away from the underlying red sandy silt rather easily during excavation. One possible interpretation of the presence of this lens is that there was a pause in the landfilling process during which a surface was walked on, and created this lens. This may have occurred during the construction of the stone wall, accounting for the absence of the lens immediately adjacent to it. Additional fill was subsequently deposited above the lens.

## TEST CUT W

TC $W$ was located so as to further expose the wooden feature encountered in TC D (Figure 63). Initially it extended three feet south of TC D and slightly more than four feet west of the fieldstone wall encountered in the latter test cut. After TC W had been excavated to a depth sufficient to expose the sides of the wooden feature, it became apparent that the feature extended still further to the west. Therefore, $T C W$ was extended in this direction. The soil above the feature in this extension was not screened.

The western end of the wooden feature turned out to be located beneath the Lot $12 / 13$ boundary wall. By slightly undercutting this wall, we were able to expose the entire southwest corner of the feature. However, the portion of the Lot $12 / 13$ boundary wall overlying the northwest corner of the feature was wider than the remainder of the boundary wall. Therefore, it was not possible to excavate the northwest corner of the feature. The results of the TC $W$ excavation enable us to expand upon the conclusions reached as a result of our analysis of TC D. Thirteen dated ceramic sherds were recovered from the deposits within the wooden feature in TC W, compared with only two sherds from TC D. The calculated mean ceramic date for these 13 sherds is 1719.6. However, the presence of a scratch blue white salt glaze stoneware sherd, with an initial date of manufacture of 1744, suggests deposition of material after the mean date. Eight of the


## Figure 63. Test Cut W

1. overburden
2. mottled brown sandy silt
3. mortar
4. dark gray sandy silt with charcoal and rubble

4a. mottled medium brown and orange brown sandy silt with mortar
5. mottled reddish-brown and dark brown silt with charcoal
6. brown silty sand with rubble
7. wood with gray-brown silt
8. medium brown silt mottled with red silt and brick
other 12 dated sherds were delftware, three slipware, and one plain white salt glazed stoneware. A pipe bowl with a "CH" maker's mark was also recovered from the feature deposit. This mark dates to $c$. 1700-1740 (Charles Hicks--Bristol). It should be recalled that the same mark was present on a pipe fragment recovered in TC D from the backfill of the pit dug during the installation of the feature. Ten measurable pipe bores recovered from the $T C W$ deposit yielded a Binford date of 1732.9. In addition to ceramics and smoking pipe fragments, several other domestic and personal artifacts were recovered, including five bottle and drinking glass fragments, a (pewter?) teaspoon and a coin. Unfortunately, preservation of the coin was not good enough to permit dating. In addition, an artifact which appears to be a lead weight, weighing almost exactly one ounce, was recovered. since one of the bottle glass fragments was from a medicine vial, the artifactual evidence, although admittedly scanty, suggests the possibility of an apothecary being located on this lot. The artifact density from the feature deposit in TC $W$, while still low (9.5/cu.ft.) was greater than in TC D (1.2/cu.ft.). The deposit in TC W yielded 64 pieces of bone (8.1/cu.ft.) and 1007 grams of marine shell (127/cu.ft.). The deposit also yielded 32 architectural artifacts ( $N A / A=1.3$ ). It should be noted that the brick and mortar density from TC W (308 gms/cu.ft.) was much lower than for the feature deposit excavated in TC D.

The evidence suggests that the feature was installed during the early 18th century and its period of use did not extend much beyond the first half of that century. The material within the feature probably was deposited after its period of use. It consists of both domestic refuse and architectural debris, probably deposited during structural demolition or repair on Lot 13.

The red clayey silt which was packed around the box was excavated in the area immediately east of the box and a portion of the area to the west. The topmost portion of the excavated red clay yielded one pearlware and one annular decorated whiteware sherd and two sherds of burned refined earthenware. If these sherds had actually originated in the clay deposit, a reinterpretation of the sequence of events previously discussed would be required since these ceramics would indicate that the installation of the feature could not have occurred before the late 18th-early 19th century. However, it is likely that these sherds were intrusive. The excavators noted that there was a two inch-thick intrusion of brown sand near the top of the red clayey silt stratum. This could have been caused by burrowing animals. In addition, the shape of the cumulative frequency curve indicates that the red clay stratum contains intrusive ceramics. The bottom portion of the clay deposit yielded only one dated sherd, which was mottled brown yelloware (1660-1750). Another sherd of this type was recovered from the soil immediately below the wooden
floor of the feature, a mottled brown, gray and orange sand, which was probably deposited during the installation of the feature. Two additional mottled brown yelloware sherds were recovered in TC D from the bottom of the pit dug to install the feature and seven additional sherds of this type originated in mixed strata which included a portion of the pit fill. The soil beneath the feature floor in TC W also yielded a complete smoking pipe with a maker's mark ( $\mathrm{RC} / \mathrm{PW}$ ) dated to 1690-1710. The clay deposit around the feature yielded a pipe fragment with the mark IR/Tip/et and RT marks on the bowl. The evidence from TC $W$ is not inconsistent with that from TC D which suggests that the feature was installed and used during the early-mid 18th century.

The layer of wood which overlay the feature in the extreme southern portion of TC D continued across TC W. The deposit of rubble which was excavated in TC D between the top of the feature and this wood layer also continued into TC W. As discussed previously, this material was probably deposited in connection with the excavation which removed the stone extension wall and the top of the feature. The portion of this deposit excavated in TC $W$ yielded creamware and pearlware, as did the portion excavated in TC D. The TC $W$ excavations also yielded one sherd of white ironstone from the top of the deposit (stratum XVIIa). It is likely that this sherd is intrusive. The mean ceramic date for the 57 dated sherds excavated from this deposit in TC W is 1768.7, compared
with a mean date of 1771.2 from the 18 dated sherds from $T C$ D. The mean date for both deposits is 1769.3. The presence of pearlware indicates a somewhat later deposition date, however.

The wooden floor, which was partially decayed, was approximately $\frac{1}{4}$ inch thick and was encountered at approximately 23-25 inches below the surface of TC W. A wooden plank, about nine and a half inches wide and three and three fourths inches thick and oriented north-south immediately overlay the floor one and a half to two and a half feet west of the stone wall which marked the eastern boundary of TC W. (This stone wall was the west wall of the early building extension on Lot 13.) This plank protruded into TC D.

Also overlying the wooden floor was what appeared to be a wooden "trough" which was oriented east-west and located approximately half way between the north and south walls of TC W. In the eastern part of TC $W$ this trough had a clearly rounded profile and was burnt. In the western portion of the test cut, the trough appeared to be more in the form of a plank with a slight indentation. It appears that the northsouth oriented plank, referred to above, separated the two halves of the trough.

The western profile of TC W does not show the trough. However, it does show a pit in the shape of a trough, which is aligned with, and has the same basal profile as, the wooden
trough shown in the eastern profile. The sandy soil within this pit appeared to be similar to the soil within the trough in the eastern portion of $T C W$. The most likely explanation is that the wood constituting the sides of the trough had decayed in the western portion of TC W. The trough was probably installed at the same time as the wooden floor, with fill deposited on either side of it. It should be noted that similar wooden floors and overlying trough-like construction were present in Lots 14 and 15 (see discussion of TC $U$ and TC S). These appear to have had a common alignment and may have served to provide drainage in those lots. The soil within the trough probably accumulated after its period of use had ended. It should be noted that 13 of the 20 ceramic sherds recovered from the trough fill (65\%) were European-American soft paste porcelain. As noted below, a high proportion of this ceramic type was characteristic of the overlying deposits, probably associated with early 19 th century mortar floor. This suggests the possibility that the trough was filled during this early 19th century construction episode. Construction of the Wooden Feature

The overall size of the wooden feature exposed in TC D and $W$, measuring from the inside of the wooden sides, was 43 inches north-south and 65 inches east-west. The wooden floor boards, oriented east-west, were attached by iron bolts to rectangular floor joists which ran in a north-south direction under the floor. Two such joists were exposed when the
eastern portion of the floor was removed. The patterning of bolts in the floor suggests that two others underlay the western part of the floor. The vertically aligned boards constituting the sides of the feature extended approximately four inches below the floor boards. The edges of the floor boards were set in grooves cut in the side boards. The side boards were attached to each other by a tongue-in-groove technique. The wales which braced the side boards measured approximately four by four by four inches. The wales were connected at each corner of the box by means of a tongue and groove and attached by two wooden pegs. One peg was driven into a hole drilled through the grooved board and the interconnecting tongue. The other was inserted into a hole in the tongue beyond its intersection with the grooved board (see sketch, figure 64).

It should be noted that the northern side of the feature, exposed in TC D, showed what appeared to be a large "dowel" immediately underneath the feature. Excavation of $T C W$ indicated that this dowel was actually an irregularly shaped board with a narrowed end, placed in the bottom of the pit dug to install the feature, with bolts or nails apparently driven through this board. However, this piece of wood did not appear to have been attached to the feature itself.

## Extension to Early House

As noted above, TC D and TC W encountered the western wall of the extension to the early (late 17th century) house


0 inches 4
FIG 64
WOODEN BOX: T.C. D/W
constructed on Lot 13. This wall intersected the rear wall of the main portion of the house (wall \#1) approximately seven feet east of the Lot $12 / 13$ boundary wall. The rear wall of this extension was encountered approximately 19 feet south of wall \#1. The rear wall of the extension ended approximately $10 \frac{1}{2}$ feet east of the west wall of the extension. As noted in the discussion of $T C D$ and $W$, the same event which resulted in the removal of the top of the wooden feature also removed the top of the west wall of the extension. It is possible that further to the east, the portion of the rear extension wall was completely removed by this event. Unfortunately, a lack of time prevented us from completely probing for the remains of the eastern part of the rear extension wall.

It should be noted that the wooden feature exposed in TC D and TC W was located at the southwest corner of the early house extension. This location may have served to provide ready access from the house extension. If it functioned as a privy, this would have been convenient but atypical, since the latter were mostly placed as far from the house as the lot allowed.

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## CHAPTER SIX

## Documentary Research--Lot 14

This lot (18'7" $\times$ 70'7"/10') falls within the bounds of Lucas Van Tienhoven's 1687 Water Lot Grant measuring 32' X $95^{\prime}$ (Liber A p53). Lot 13 originated in the western section of this same water lot. However, the measurements for all the water lot grants and the present day lot lines total in such a waythat a section of Lot 14 , measuring approximately $10^{\prime} \mathrm{X}$ 70', falls within Evert Duyckinck's 1687 Water Lot Grant. This discrepancy is no longer apparent by the late 18 th century, at which point a clear chain of title emerges (L52 p157,300).

The minutes of the Common Council place Van Tienhoven here in 1693 (see entry for July 11, 1693) but by 1697 the original parcel had been subdivided into two sections along its north/south axis. The eastern section (corresponding roughly to Lot 14) measured approximately $16^{\prime} \mathrm{X} 95^{\prime}$ and belonged to John Varick, a baker. In 1697 he obtained a Water
 p239). Varick's "house" is listed in the tax assessment records from 1703 to 1709. The assessments are unavailable after this date and when they resume in 1721 simeon Soumaine is listed as an occupant until 1724. The structure is persumably a private residence. Tax assessment records are unavailable from 1724 until 1790. The 1791-1795 city
directories list the shoemakers Matthew and Richard Larner at this address. In 1808-09 the property is described in the tax assessment records as a vacant lot and in 1810 a new structure was erected. Lot 14 housed a series of merchants and dry goods stores throughout the 19 th century.

The Varick family owned the lot until 1814. The property then passed to the merchants James Tuttle, George Sharp, John Johnson and William Halstead (L105 p426,428). The same group owned Lot 13 (L107 p110), Lot 15 (L115 p149) and Tuttle owned Lot 11 (L105 pl452). Lot 14 belonged to them until 1818 (L107 p112, L126 p128) and they also appear as occupants in the directories and tax assessments. The lot passed through a series of owners during the 19th century as follows: John Aspinall 1818-21 (1151 p172), Marcellus Van Geisen 1821-42 (L316 p335), Harvey Weed 1842-1881 (L1576 p440) and Mary Augustus Benedict 1881-1889 (L2248 p306).

The 1860 tax assessment records describe a four story building measuring 18'7" X 66'. The backyard would have been 3'2" across the breadth of the lot. Although there are only two documented building episodes in Lot 14 (before 1860) it is possible that an additional undocumented structure replaced Varick's original l7th century residence prior to the ca. 1810 building described in the tax assessment records. It should also be noted that the lot line discrepancy mentioned above might reflect surveyors' errors, problems in interpretingthe title history or else actual boundary reallignments that would
result in more recent buildings crosscutting the foundation walls of the earliest 17 th century buildings.

## Excavation - Lot 14

## North Portion

Early in the project a shovel test (ST 3) was placed in the northern portion of Lot 14 . The stratigraphy revealed by this test suggested the presence of occupational deposits and/or an early floor at this location. Therefore a five by four foot test cut (TC O) was placed in Lot 14 north of wall \#1 during the exploratory phase of the project. The deposits encountered were of sufficient interest that this lot became one of the major foci of activity during the mitigation phase.

The portion of Lot 14 discussed in this section was within the walls of an early structure built on this lot. The east and west walls of this structure underlay the later Lots $13 / 14$ and $14 / 15$ boundary walls. A total of 520 square feet were enclosed within the area bounded by these lot walls, wall \#1 (the rear wall of the main portion of the early house), and the Pearl street base line. One hundred and seventy nine square feet of this area (34.4\%) were excavated. During the mitigation phase, TC $O$ was extended so that the southeast corner of the foundation walls of the early structure were exposed (Figures $65,66,67,68$ ). Four additional excavation units TC Y (Figures 69, 70), AD (Figures 71, 72), Z (Figure 73), and AH (Figure 74) were placed north of TC $O$ in a


FIG 65


FIG 66

TEST CUT O


FIG 67

## Figure 65. Test Cut O; East Wall

1. brown sandy overburden
2. red silt
3. brown sandy silt with rubble
4. grayish-brown sandy silt with rubble
5. ash and charcoal
6. red sand
7. yellow decomposed mortar
8. red sand
9. black silt
10. yellow sandy silt with mortar, brick, and charcoal
11. yellowish-brown sandy silt with mortar, brick, and charcoal
12. dark brown sandy silt with charcoal
13. white sand

Figure 66. Test Cut O, Extension; North Wall

1. brown sandy overburden
2. hard-packed red-brown silty sand with rubble

2a. hard-packed red-brown silty sand with rubble and charcoal
3. gray sandy silt with charcoal and shell
4. red sand with pockets of mortar
5. black silt
6. ash and charcoal
7. brown sand with charcoal
8. black sandy silt with mortar
9. mixed red sand and mortar
10. red sand
11. yellow-brown silt with brick rubble
12. decomposing mortar
13. mixed red and brown sand with charcoal
14. white sand
15. gray-blue clay
16. red sand with mortar
17. red sand mottled with yellow silt, mortar, and charcoal
18. gray sand

Figure 67. Test Cut O, Extension; North Wall

1. brown sandy overburden
2. hard-packed red-brown silty sand with rubble 2a. hard-packed red-brown silty sand with rubble and charcoal
3. gray sandy silt with charcoal and shell
4. red sand with pockets of mortar
5. black silt
6. ash and charcoal
7. hard-packed yellow sand
8. gray sand with charcoal and brick 9. red sand
9. decomposing mortar
10. gray clay
11. brown sand
12. red sand
13. gray-brown sand with shell
14. black organic material


Figures 69-70. Test Cut $Y$

1. brown sandy overburden with construction debris
2. pink sand with construction debris
3. pink sand mottled with brown and with brick and mortar
4. hard-packed yellow-brown sand
5. dark red-brown sandy silt with decomposed brick

5a, red-brown sandy silt
5b. red-brown sandy silt with black-brown mottling
6. blackish-brown sandy silt
7. yellow-brown sandy silt with mortar and charcoal
8. mixed brown sand and gray ash with charcoal

8a. gray ash with charcoal
8b. gray ash with charcoal and shell
8c. charcoal
9. red-brown sand with ash
10. yellow-brown sand mottled with red and with concentrations of charcoal
11. red sand mottled with yellow-brown silt and charcoal
12. gray-beige sandy ash with mortar
13. gray ash with burned plaster
14. charcoal and light gray ash with shell
15. light gray silty ash with charcoal
16. gray silty ash with charcoal and mortar
17. mixed red sand and yellow silt with ash and charcoal
18. red sand

19-21. blue-gray clay
22. tan sand with red sand lenses
23. red sand
24. gray sandy silt with shell
25. brown sandy silt
26. grayish-brown silt with shell
27. greenish-brown silt with lenses of tan gravelly sand and red sand

## SOUTH WALL



FIG 71-72
TEST CUT AD

Figures 71-72. Test Cut AD

1. brown sandy overburden with construction debris
2. brown sandy silt with charcoal
3. pink sand

3a. pink sand with mortar
4. reddish-brown sandy silt with brick
5. red-brown silt
6. dark brown sand mottled with charcoal and red silt
7. brownish-gray sand with charcoal
8. brown sandy silt with charcoal and brick
9. black ash and brown sand
10. mixed yellow silt and gray sand
11. gray sand mottled with yellow silt
12. mixed yellow silt and gray sand with rocks
13. charcoal and white sand lenses
14. mixed yellow-brown silt, gray ash, and charcoal
15. red sand
16. gray silty sand
17. gray silty sand with yellow mortar
18. blue-gray clay
19. yellow mortar with brick
20. gray sandy silt with shell
21. yellow sand
22. gray silt with shell
23. tan gravelly sand with lenses of red and gray sands
24. orange sand
25. dark gray clay
26. gray silt with shell
27. grayish-yellow sand
28. red-brown silt with rocks
29. light gray sandy ash
30. tan sand
31. light gray silty ash
32. gray sand with mortar and shell
33. brownish-gray silty sand with shell

33a. brownish-gray silt with shell


Figure 73. Test Cut $Z$

1. fill: hard-packed brick, mortar, and stone
2. brick and red silty sand
3. black ash
4. gray clayey silt and ash
5. red sand
6. brown clayey sand with shell
7. red sand mottled with yellow-green fine sand
8. dark brown clayey silt
9. light brown sand
10. light brown sand with streaks of orange 11. light brown sand with rocks and green clayey silt

## Figure 74. Test Cut AH

1. rubble
2. concrete
3. gravel bed
4. yellow sand with whole and crushed brick
5. black silt with ash
6. brown silt with charcoal
7. crushed brick and burned mortar
8. brown silt
9. gray silt with ash, charcoal, and shell
10. red sand
11. light brown silty sand
12. light brown sand
13. light brown sandy silt with shell
14. yellow brown silt with charcoal
15. lenses of clay and silt
16. medium brown clayey silt
17. yellow brown sand
18. brown silt
19. yellow brown sand
20. clayey silt
21. red sand
22. clay-silt lens


Figure 75. Composite profile: Lot 14

1. sand with rubble
2. mortar/brick (floor \#2)
3. brownish-gray/black sandy silt ("transitional layer")
4. reddish-brown sandy silt
5. gray and black silt with ash ("midden")
6. yellow-brown silt and gray ash (floor \#1)
7. red sand
8. bluish-gray clay
9. brown sand with rocks
10. red sand
11. red sand with rocks
12. gray-brown sandy silt with shell
13. grayish-yellow sand
14. bands of sand and silt
15. grayish-yellow/ light brown sand with rocks
16. light brown/ reddish-brown sand
17. greenish-brown silt
```
Figure 76. Test Cut AL
1. rubble
2. pink sand with brick
3. pink sand
4. mortar
5. collapsed area
6. red sand
7. reddish-brown sand with brick and mortar
8. mortar
9. yellow silty sand with yellow silt
10. yellow-brown silty sand with charcoal
11. light brown sandy silt
12. brown silty sand with charcoal
13. gray silt with ash and charcoal
14. charcoal
15. tan sand with mortar
16. red sand
1.7. green with light gray clay
18. gray clay
19. light brown sand
20. light brown silty sand
```

"checkerboard" pattern so as to provide a continuous north/south profile along a line located approximately half way between the east and west foundation walls. A simplified composite profile along this axis is included as Figure 75*. $\therefore$ An additional excavation unit (TC AL) was placed so as to extend TC Y westward to the Lot $13 / 14$ boundary wall.

Prior to excavation, the concrete basement floor of the latest structure to stand on Lot 14 (floor \#3) and the underlying gravel bedding had been removed by power equipment. The excavations encountered a second mortar floor (floor \#2), some 4-14 inches below the level of the later concrete floor. clearing operations prior to excavation had disturbed most of the deposits between these two floors.

Beneath the second mortar floor, the excavations encountered an 8-12 inch thick layer which consisted primarily of a black silty soil containing burnt wood and charcoal with inclusions of a grayer ashy soil. It is likely that this deposit represents a midden deposited in the basement of a structure which stood on this lot. This deposit did not immediately underlie mortar floor \#2 in most of the test cuts. A layer of brown sandy silt was located between the mortar floor and the deposit of black silt and gray ash. This layer was thinner in the north part of the excavated area, becoming thicker toward the south with a maximum thickness of approximately four to five inches. In the northernmost test cut (TC AH) this brown silt layer was not present, with the
black silt beginning immediately beneath the mortar floor.
A thin yellowish line was noted in the profiles of most of the test cuts. This may represent the decaying remains of an earlier mortar floor (floor \#I). This floor probably represented the basement floor of the structure which stood on Lot 14 during the deposition of the midden. At this time, wall \#1 probably still marked the rear wall of this structure. Excavation by both manual methods and power equipment south of wall \#1 indicated that the midden deposit did not extend south of this point. Mortar floor \#2 was laid down after the deposition of the midden had ended. At this time, the rear wall of the structure standing on Lot 13 may have been located further to the south than wall \#1. This rear wall may have been the one observed in the walls of $\mathrm{BT} \# 2$, approximately 5560 feet south of the Pearl Street baseline (see below).

A layer of red sand was encountered beneath floor \#1 and the midden deposit. This layer was only two to four inches thick in the northern part of the excavated area, becoming gradually thicker to a point $17 \frac{1}{3}$ feet south of the Pearl Street baseline ( $15 \frac{1}{2}$ feet north of wall \#1). From this point south to wall \#l the red sand stratum increased in thickness to 14-18 inches.

South of the point noted above where the red sand layer thickened, the latter layer was underlain by a stratum of mortar or clay. In the eastern portion of the lot, this stratum consisted of hard packed yellow mortar with imbedded
brick. This deposit was $8-10$ inches thick toward the east, narrowing to only two inches in the middle of the lot. Just east of the north-south line in the middle of the lot along which our composite profile is drawn, the deposit of mortar ended but at the same elevation a layer of clay, some two to three inches thick, was present. Numerous cobbles were imbedded in the underlying sand and covered by the clay. These cobbles also underlay the mortar in the eastern portion. The clay/mortar stratum ended just north of the south wall of TC AD. As noted above, the overlying red sand stratum was substantially thinner north of this line.

A deposit of red/brown sand containing large quantities of rock underlay the mortar/clay layer. The base of the former stratum sloped downward from north to south in TC Y but was fairly level in TC 0 .

In the northern portion of the excavated area, a stratum of gray sandy silt containing substantial quantities of oyster shell underlay the red sand stratum (which in turn underlay mortar floor \#1). In the southern portion of the area, this same gray silt stratum was encountered beneath the red brown sand with rocks. Thus the stratigraphic sequence in the northern portion of the area was: mortar floor \#1--red sand (thin)--gray silt with shell, while in the southern portion the sequence was: mortar floor \#1--red sand (thicker)--clay/mortar-brown/red sand--gray silt. In $T C Y$ (in the southern portion of the area) a greenish brown silt layer was
noted beneath the gray silt with shell. The excavations in TC o did not reach a sufficient depth to encounter this layer.

In the northern portion of $T C Y$ we encountered what appeared to be a low stone wall near the bottom of the excavation unit. This wall consisted of two layers of dry laid stone running east-west. The base of the wall rested on the green brown silt encountered at the bottom of the exposed stratigraphic sequence. The gray silt with shell abutted this wall in TC $Y$ and a thin layer of this soil apparently overlay the wall. The west and south profiles of TC AD indicate the presence of a single layer of stones at about the same depth as the wall uncovered in TC Y. However, the sand stratum in which these stones were embedded contained many rocks throughout and the layer of stones was not part of the wall. Although we were not able to more thoroughly explore the extent of the wall, probes indicated that it ended just east of the east wall of TC Y and did not turn to the north or south at that point. It should be noted that the dividing line between the differing stratigraphic sequences noted above occurred just north of this wall.

North of the stone wall uncovered in TC Y a stratum of sandier soil underlay the gray sandy silt with shell. This stratum did not appear to be present south of the wall. The green/brown silty soil which underlay the gray silt south of the wall appears to underlie the sandy stratum north of the wall. In addition, the excavation records suggest that bands
of silt may have been present at the top of the sand stratum north of the wall.
(Figure 76)
TC AL extended TC Y to the west and exposed the Lot 13/14 boundary wall as well as the west wall of the early foundation. The east-west stone wall uncovered in TC $Y$ extended westward beneath the west wall of the early foundation. The base of the early foundation wall was at the level of the top of the east-west wall. This is not indicated on the TC AL profile since the stratigraphic excavation of this unit did not extend to the base of the wall. However, the top of the wall was exposed and photographs clearly show the relationship of the two walls.

The top of the west foundation wall of the early structure was approximately 30 inches below the surface of TC AL. The base of the cut stone wall of the later structure (the Lot 13/14 boundary wall) overlay the western part of the earlier wall and extended approximately 9-10 inches above it. A thin layer of soil was present between the base of the later wall and the top of the earlier one. The stratigraphy indicated that a trench had been dug through the midden deposit and the underlying red sand to install the later wall.

The earlier foundation wall extended to a depth of some 60 inches below the TC AL surface. It was intersected at a depth of approximately 50 inches by the layer of gray clay with stones discussed above. The excavators noted a layer of stones in TC AL at the base of the midden stratum at the same
level as the top of the early foundation wall.
The southern portion of an intrusive pit was excavated in TC $O$ and $O$ extension. The pit appears to have been dug after the deposition of the midden. It was dug through the midden, red sand and mortar layers into the brown/red sand beneath. The pit intersected the eastern foundation wall and extended westward a maximum distance of four feet from the wall. It also extended 24-28 inches southward from the north wall of TC $O$ and $O$ extension. The northernmost boundary of this pit apparently lay within the unexcavated area between TC $O$ and TC AD, as the pit was not present in the latter test cut. The internal stratigraphy of the pit suggests that it was not dug for garbage disposal but was probably excavated and then backfilled. It may have been dug to repair a portion of the eastern foundation wall, although this was not apparent from an examination of the wall. However, the repairs could have occurred in the portion of the wall adjoining the unexcavated part of the pit.

There were at least two additional areas of disturbance to the midden deposit which should be noted. The northeast corner of TC AD appears to have been disturbed, with a concentration of stones present in this area at the level of the midden. Photographs suggest a possible excavation in this area which disturbed the midden and deposited the stones.

Profile drawings also suggest that a disturbance in the form of an east-west trench which was dug starting beneath
floor \#2, runs through TC Y and the southwest corner of TC AL. It should further be noted that our ST \#3 was within the boundary of TC O. This shovel test had been backfilled prior to the excavation of the test cut. The excavators noted the soil difference in this area, however, and the disturbed material was excavated separately.

Summary of stratigraphy
The excavations in the northern part of Lot 14 suggest that there were several episodes of filling at this location. The east-west stone wall at the base of the stratigraphic sequence in TC AL and TC Y may have functioned as a bulkhead or retaining wall and marked the southernmost extent of the first filling episode. It is also possible that this wall was intended to be the rear wall of the early foundation but that it was decided to enlarge the house after the construction of the wall had begun. In any case additional fill was deposited before the construction of the early foundation walls began. Thus the foundation construction on Lot 14 began after the initial filling, and at a higher elevation than the earlier east-west retaining wall.

The base of the east-west retaining wall, which rested on the green/brown silt stratum, may mark the original river bottom surface at this location, although this surface may have been under water only at high tide. Since the water lot grants for Lots 13 and 14 were both obtained by the same individual (Lucas van Tienhoven) this early retaining wall may
have extended into Lot 13. However, the excavations in the latter lot did not reach the depth necessary to have uncovered this wall.

The first filling episode would have deposited the sand fill north of the retaining wall. The large boulder uncovered in TC AH was most likely of glacial origin (see Appendix X ), with the fill deposited around it. It should be noted that large boulders were also present near the Pearl street base line in Lot 13.

The surface of the land was raised by the deposition of the gray sandy silt with shell. It is possible that this deposition ended on a line defined by the early east-west retaining wall with the fill overflowing the wall and sloping downward from this point southward. A second episode of landfill (sandy) would then have been deposited south of the east-west wall and the foundation walls constructed. Additional fill was then deposited against the foundation walls, and at a level approximately two feet above the wall base, the mortar/clay level was deposited and additional clay packed against the wall. The function of the mortar and clay deposit may have been to seal out water and dampness from the structure. Additional red sand fill was then deposited to bring the surface approximately to the top of the foundation wall. A thinner layer of the red sand was also deposited above the gray silty fill in the north part of the lot, presumably to level off the surface prior to construction of
the house superstructure and the basement floor.
Another possible interpretation of the stratigraphy is that the gray silt landfill stratum originally continued at the same elevation south of the early east-west wall as north of it. At a later date the entire portion of the lot between the early east-west wall and the location of the rear foundation wall would have been dug out to a depth slightly below the base of the foundation wall. The red/brown sand would have been deposited, the foundation wall constructed, and the mortar/clay and red sand deposited as discussed above.

Although none of the test cuts placed north of the early east-west wall intersected the east or west foundation wall, field notes indicate that the portion of the eastern foundation wall near the Pearl street baseline ended at a higher elevation than the portion exposed by $T C O$ and $O$ extension. This suggests the possibility that the house was extended further to the north after the initial construction. This could also explain why the mortar/clay layer was only present in the southern portion.

Subsequent to the construction of mortar floor \#1, there was an accumulation of trash in the basement of the house. It should be noted that burned wood was found at the top of this deposit, suggesting that a later wooden basement floor (floor la) was laid down on top of the midden, and may subsequently have been burned. As discussed below, the artifactual evidence raises the possibility that this burning
was caused by the fire of 1778 which affected a large portion of lower Manhattan. After the fire, additional material was deposited which may have derived from the building burned in the fire. Mortar floor \#2 may have been associated with the next building to be constructed, which extended further to the south than the earlier structure. Concrete floor \#l with its gravel bedding would have been deposited later, probably in association with the final construction phase on Lot 14.

## Dating of the Deposits

## Mortar Floor \#2

Sixty two dated ceramic sherds were excavated immediately below mortar floor \#2. These yielded a mean ceramic date of 1790.26. However, this deposit contained 15 whiteware sherds (19\% of the diagnostic sherds). This might imply that the mortar floor was deposited after 1810, which is also supported by the presence of a fragment of a 19th century beer/ale bottle fragment in TC $Z$. However, it should also be noted that while there were 43 creamware sherds in this deposit, only two pearlware sherds were present. This suggests the possibility that the whiteware sherds originated in the material overlying the floor.
"Transitional" Deposit
We have referred to the brown soil between the midden and the overlying mortar floor \#2 as the "transitional" deposit. It was originally thought that this deposit represented the top of the midden. It is likely that the excavated material
contains some artifacts from the surface of the midden, but analysis of the artifacts suggests that this was a separate and later deposit. The 113 dated ceramic sherds recovered from this deposit yielded a mean ceramic date of 1745.3, approximately 35 years later than the date calculated for the midden. Unlike the underlying midden deposit, this material contains a high proportion of creamware (31.5\% of the diagnostic sherds). The deposit contained no pearlware sherds, and only two sherds of 19 th century ceramic types. The latter are most likely intrusive. The cumulative frequency curves for the ceramics from this assemblage are consistent with a deposition beginning after the termination of the underlying midden creation event and ending before the introduction of pearlware c. 1780. If this material was deposited much after 1780 we would expect a larger percentage of pearlware sherds to be present.

Thus, the ceramic evidence is consistent with the identification of this deposit as debris from the demolition of a building burned in the fire of 1778. The presence of the whiteware sherds noted above also suggests that the overlying mortar floor \#2 which sealed this deposit may have been constructed earlier than suggested. If mortar floor \#2 was, in fact, constructed in the 19 th century it is likely that its construction destroyed an earlier floor which had sealed the "transitional" deposit. Seven of the 51 measurable pipe bores from the latter deposit (13.7\%) were \#4, further reinforcing
the idea that this deposit is later than the underlying midden. Only $1.5 \%$ of the measurable bores from the latter deposit were \#4.

The sharp difference in artifact densities between the transitional deposit and the underlying first level of the midden deposit supports the ceramic and pipe evidence that these are separate deposits. The transitional deposit contained a much lower non-architectural; architectural ratio than the first midden level and a much higher building material density. This supports the inference made previously that this deposit represents building demolition debris which was present on the lot prior to the construction of a new building and the associated mortar floor \#2. The fact that $30 \%$ of the bone fragments and $15 \%$ of the bottle glass fragments from this deposit were burned (a much higher percentage than in the underlaying deposit) supports the inference that the demolition of the extant building took place during the fire of 1778. Among the artifacts from this deposit were 245 gunflints and 34 additional lithic fragments, perhaps associated with gunflint manufacture, all of which were recovered from TC $Z$. This is interesting in view of the hypothesized date of the burning of a structure at this location during the revolution. Only two gunflints were recovered from the underlying midden deposit. Also notable were the 96 buttons recovered from this deposit, found in TC Z. Except for two metal buttons all of these were made of
bone and appeared to have been burned.
Midden Deposit
The midden deposit yielded 408 dated ceramic sherds. Fourteen creamware sherds and one pearlware sherd were included among these ceramics. However, it is likely that these were intrusive into the deposit. All but one of the creamware sherds were recovered from the first of three levels excavated within the deposit. Seven of the 14 creamware sherds came from the first excavated level in a single test cut, TC Y. The profile drawings clearly show an intrusive event at the top of the midden in this test cut and other intrusive events are indicated in the records of the other test cut.

Because the first midden level of $T C Y$ was obviously contaminated by the intrusive event previously mentioned, the sherds from this level were excluded from the mean ceramic date calculation. The calculated date was 1708.8 years. This date may be somewhat skewed since approximately $31 \%$ of the dated sherds were delftware, which has a mean date of manufacture of 1700. However, a number of the decorated sherds could be identified as 18 th century types.

Analysis of the ceramic types present and the cumulative frequency curves suggest that accumulation of the midden deposit began in the early 18th century. Only $12.7 \%$ of the sherds consisted of 17 th century type red earthenwares. Accumulation of the deposits may have ended in the 2 nd quarter
of the l8th century. Fifty of the sherds recovered from the deposit were identified as mottled brown glaze yelloware, a ceramic type manufactured from 1660 to 1750 with the greatest popularity in the 18th century. Thirty five other sherds were British brown salt glazed stoneware, manufactured from 16901790. Only 12 white salt glazed stoneware sherds were present. Eight of these were slip-dipped white salt glazed stoneware, manufactured between 1715 and 1775 with the other white salt glaze sherds having manufacturing dates between 1720 and 1805. If deposition of the midden continued much beyond the $1730 s$ it is likely that more white salt glazed sherds would have been present.

Ninety one percent of the 203 measurable pipe stem bores from the midden deposit were either \#5 or \#6, which is consistent with an early l8th century deposition. Of the 14 identifiable maker's marks, only one belonged to a 17th century pipe maker (William Evans). Eleven of the marks are variations of the Tippet mark. Two pipe fragments have both the RT mark and an Evans cartouche. These are dated to 16981720 which is consistent with a beginning deposition date in the early 18 th century.

Eighty of the 84 dated bottle glass fragments are dated to 1690-1730/40, with four dating to $1730-1760$. This is also consistent with the dates of deposition discussed above. In addition, the first midden level excavated in test cut $A D$ yielded a glass bottle ownership seal with the embossed date

1715 and the initials TD. The date supports the inference that deposition of the midden began early in the 18 th century. The initials TD, however, do not accord with any of the identified owners of the lot.

Composition of the Deposit
The midden deposit contained a number of personal artifacts including two buttons, two straight pins, a buckle, probably from a shoe, four glass beads, five fragments from a bone comb, a sewing thimble, six marbles, and three slate pencils. The deposit is also characterized by the presence of 924 fragments from ceramic "crucibles." These are circular artifacts with a triangular hollow portion. The crucibles appear to be of several sizes. A whole one recovered from TC 0 was one and three fourths inches in height with a diameter at the top of one and three fourths inches. While several crucibles were recovered from excavations in Lot 13, these differed from those recovered from Lot 14 . Five hundred and seventy five of the 924 crucible fragments were recovered from the first excavated level of the midden deposit in TC AH. The presence of 28 crucible fragments from the transitional deposit overlying the midden lends support to the hypothesis noted above that some of the midden material was excavated with the overlaying deposit. It is also interesting to note that a number of egg shell fragments were recovered from TC $O$ and AH, with a major portion of one shell being recovered from the former test cut.

The ratio of non-architectural to architectural artifacts is much higher for the midden deposit (6.34) than for the artifacts recovered from the overlaying transitional deposit (2.6), the transitional deposit underlying the midden which is discussed below (3.5), or the average ratio for the landfill deposits excavated in this portion of Lot 14 (1.78). The midden deposit also contained bone and marine shell densities of 46.6 pieces/c.u. ft. and 807.7 gms./cu.ft., compared with 15.2 pieces/cu.ft. and 173 gms./cu.ft., respectively for the overlying transitional deposit. All but one of the landfill deposits had lower bone and marine shell densities than the midden deposit. One of the landfill strata had a slightly higher bone density (47.7 pieces/cu.ft.), and one had a higher marine shell density (2222.0 gms./cu.ft.) than those in the midden.

The above figures tend to support the identification of the midden as a deposit of domestic debris, rather than material deposited as a result of structural demolition. The lower density of building materials in the midden deposit (788.6 gms./cu.ft.) than in the overlying transitional deposit (143,322 gms./cu.ft.) also tends to support this conclusion. However, the density of building materials in the midden deposit is higher than for all but one of the landfill deposits, which had a density of 929 gms. of brick and mortar/cu.ft. The densities for the other landfill deposits ranged from 62 to 366 gms./cu.ft. The presence of the
moderate densities of brick and mortar in the domestic midden deposit could represent debris from the construction or repair of the house in which the midden accumulated. This material would have become mixed with the trash which accumulated during the occupation of the house. Some of this material could also have been deposited by the intrusive events mentioned previously.

## Analysis of Midden Deposition

Four of the seven test units placed in the north portion of Lot 14 involved the excavation of three separate levels within the midden deposit. Two midden levels were excavated in two of the other test cuts. These levels were analyzed separately in order to determine whether the deposit was accretional. The first excavated level, excluding the disturbed material from TC Y, yielded a mean ceramic date of 1706.5 (if the disturbed material from TC $Y$ is included, the date becomes 1712.7). The second and third levels yielded dates of 1711.6 and 1710.7 respectively. Analysis of the categories of ceramics present and the cumulative frequency curves also yield results which are inconsistent with those expected if the midden had accumulated gradually over a long period of time and was subsequently undisturbed. For example, 16.5\% of the diagnostic sherds from the first midden level are 17th century earthenware types with the percentage for the second and third levels being $6.9 \%$ and $2.6 \%$. This is the opposite of the pattern which would be expected if deposition
was vertically accretional.
It is possible that deposition of the midden was horizontally, rather than vertically, accretional. That is, some portions of the basement could have been used for the deposition of refuse before others. There appears to be more variation in ceramic types among the test cuts than among the various excavated levels. The mean ceramic dates for TC Y and $A D$ are somewhat later than for the other test cuts, with $T C$ $Z$ and 0 extension having the earliest mean dates. Test Cuts O, AL and AH yielded substantially fewer dated sherds than the other three test cuts. The later mean dates for $T C Y$ and $A D$ are in keeping with a very low percentage of 17 th century ceramic types in these test cuts, with a higher proportion of mottled brown yelloware and British brown stoneware. Test Cuts $Z$ and $O$ extension have higher percentages of 17 th century types and early 18th century types (mainly slipwares) and lower percentages of the mottled yelloware and British brown stoneware.

The lack of vertical variation in the ceramic composition of the midden could be interpreted as due to disturbance of the deposit and consequent mixing of material. However, the overall distribution of artifacts does not support this interpretation. The lowest of the three levels excavated in four of the test cuts had a much lower density of material in all categories, except for marine shell, than the two uppermost levels. The NA/A ratio is progressively lower with
depth, being 8.0 for the uppermost, 5.2 for the second and 4.3 for the lowest level. However, the density of building materials is highest for the second level (11617 gms./cu.ft.), with the first level having 645 gms./cu.ft. and the third, 354 gms./cu.ft. The bone density is also much higher for the second level, 87 pc./cu.ft., compared with 40.6 and 23.6 pcs./cu.ft. for the first and third levels respectively. If the uniformity in mean ceramic dates was due to postdepositional mixing of the deposit, the artifactual and faunal composition would also be expected to be more uniform than indicated by the above figures. (It should be noted that the first level excavated in the midden deposit in TC $Y$, which shows indications of containing intrusive material, was excluded from the above analysis.)

## Intrusive pit

Artifacts excavated from the pit which was dug through the midden deposit in TC $O$ and $O$ extension were analyzed separately from the midden deposit. Forty dated sherds yielded a mean ceramic date of 1761.1. Fifty-five percent of the diagnostic sherds were creamware, with no pearlware or 19th century type ceramic sherds present. The ceramic profile suggests that this pit was excavated from the transitional level above the midden. This in accord with the stratigraphic evidence.

## Transitional Deposits Below Midden

In $T C O$ extension, $Y, A D, Z$ and $A H$, some excavated
contexts apparently contained material from both the base of the midden and the top of the underlying red sand deposits. These contexts may also have contained the remains of a mortar floor which underlay the midden. These deposits yielded 81 sherds with a mean ceramic date of 1703.2 , intermediate between the dates for the midden and red sand deposits. The transitional deposits had a higher proportion of delftware sherds (78.6\%) than either the overlying midden or underlying sand. They are similar to the midden in having a small percentage of l7th century earthenwares and a similar percentage of slipware sherds. However, they yielded only three mottled yelloware sherds (3.6\% of the diagnostic sherds). The proportions of pipe stem bore diameters are also intermediate between those characterizing the midden and red sand deposits. The artifact data also suggest that these excavated contexts may contain material from both the overlying midden and the underlying sand.

## Red Sand and Clay/Mortar Deposit Beneath Midden

The red sand immediately underlying the midden yielded 47 ceramic sherds with a mean date of 1681.1 . No 18 th century ceramic types were recovered from this deposit, in contrast with the midden deposit which contained $42.7 \%$ 18th century type ceramics. The three slipware sherds (5.3\% of the diagnostic sherds) were consistent with the percentage of slipwares generally present in the late 17 th century landfill deposits. In addition, there were no \#5 pipe stems recovered
from the red sand, as opposed to the midden deposit in which 52.2\% of the pipe stems recovered were \#5. This red sand deposit had a very low artifact density, 2.9 per cu./ft. The bone and shell densities were also low.

The sixteen dated sherds recovered from the clay/mortar deposits which underlay the red sand in the south portion consisted of 17 th century earthenware and delftware sherds. While two of the 22 measurable pipe bores were \#5, $90.9 \%$ consisted of \#6, 7 and 8 bores. If the deposition of the clay and mortar was associated with the construction of the early building on Lot 14 , this must have occurred immediately after the landfilling. Deposition of the midden may have begun shortly after this and continued through the period of occupation of the structure.

Sand and silt Land-fill Deposits
The sand and silt deposits underlying the red sand and clay/mortar strata generally contain ceramic and smoking pipe assemblages with characteristics consistent with the landfill deposits from the site. Mean ceramic dates from the various strata range from 1679.4 to 1698.7. The overall mean ceramic date from the deposits of sandy and silty landfill (748 sherds) is 1683.6. The Binford pipe stem date (721 measurable bores) is 1661.7 years. The smoking pipe maker's marks from these deposits are also consistent with those recovered from the other land-fill deposits on the site and are attributable to 17th century manufacturers.

The gray silt deposit in the northern part of the lot was characterized by a very high shell density (2222 gms./cu.ft.). Analysis of the artifacts recovered from the landfill deposits in the southern portion of the area under discussion indicates that the sand immediately underlying the clay/mortar deposit can be divided into two separate deposits. The upper portion of the sand had a fairly low density of artifacts, bone and shell while the lower deposit had a fairly high artifact and bone density and a shell density higher than the overlying deposits.

It should be noted that the lowest deposit of sand in the northern portion of the lot (Test cuts $Z$ and $A H$ ) is the only deposit to have a greater quantity of yellow brick (356 gms.) than red brick (19 gms.). This pattern has been noted at the base of the fill and the top of the "river bottom" deposits elsewhere on the site.

In each of the landfill deposits underlying the clay/mortar stratum there is at least one ceramic sherd of an 18th century type. A total of 16 of the 748 sherds recovered from these deposits are in this category (2.1\%). It is likely that the presence of these sherds is due to intrusive events and/or excavation errors. Eight of these sherds were recovered from TC o extension. These may have been associated with the pit which was dug through the midden deposit in this excavation unit. Of the other 18th century sherds in the landfill deposits, five were recovered from TC $Z$, two from AH
and one from AD. It should also be noted that some fragments of the ceramic "crucibles" which characterized the midden deposit were found in the red sand underlying the midden, the clay/mortar layer and the fill strata beneath the clay/mortar layer. This provides further evidence that intrusive events occurred which were not recorded during the course of the excavations.

## South Portion of Lot 14

TEST CUT U
During the exploratory phase of the project, BT \#2 was placed in Lot 14 south of wall \#1. The trench exposed what appeared to be a wooden bulkhead, consisting of planks supported by a wooden post. The bulkhead ran in an east-west direction and was located approximately 52 feet south of the Pearl street baseline. Test Cut $U$ was subsequently placed adjacent to the east side of this backhoe trench in order to expose more of the bulkhead and to stratigraphically excavate the landfill deposits to the north and south.

Clearing operations using power equipment had deposited five to six inches of overburden at the location of $T C U$. This was removed prior to the excavation. It should be noted that mortar floor \#2, mentioned in the discussion of the excavations north of wall \#1, was not detected during the excavation of TC U. However, the elevation of this floor was approximately the same as the elevation of the base of the overburden at the location of $T C U$, and it is possible that
the clearing operations removed this floor in the vicinity of TC U. The elevations of the midden and transitional deposits excavated north of wall \#1 were below the elevation at which the excavation of TC $U$ began. Excavation of this test cut confirmed that these deposits did not extend to the southern part of Lot 14.

At approximately 21 inches below the opening depth of TC U, a layer of north-south oriented wood planking was encountered extending three feet outward from the south wall of the test cut (Figure 7\%). Another plank, oriented eastwest, overlay the north-south planking in an area which extended between 6 and 14 inches north of the south wall of TC U. This overlying plank was bordered by a row of stones on either side. The construction was almost identical with the planking excavated in $T C W$ in Lot 13. Examination of these locations on the site map indicates that the east-west planking in both test cuts is within a foot of being perfectly aligned and the north-south planking is within two to three inches of being at the same elevation. The differences in alignment and elevation would appear to be within the overall limits of mapping error. It thus appears likely that the wooden features in Test Cuts $U$ and $W$ are portions of the same construction. This construction may have also extended to the east into Lot 15 (see discussion of TC S).

The TC U east wall profile indicates the presence of a pit, filled with dark brown silty sand, immediately above the


FIG 77 TEST CUT U EAST WALL

FIG 77a U EXTENSION

SOUTH WALL


Figures 77-77a. Test Cut U, Extension

1. tan sand and silt with rubble
2. mottled medium brown and green sandy silt with brick fragments
3. brown silt mottled with black
4. green silt
5. dark gray clay
6. mottled medium gray-brown and green sandy silt with brick fragments
7. red sand
8. tan sand
9. gray clay
10. dark brown silty sand
east west planking (hereafter referred to as the "trough"). However, the west profile (actually the east profile of BT \#2 drawn prior to the excavation of TC U shows a layer of yellowbrown mottled silty sand between the bottom of the pit and the trough. It should be noted that a similar "pit" was also located above the trough-like planking noted in TC W in Lot 13 and TC S in Lot 15.

The most likely explanation for the presence of these features is that the north-south planking and trough were installed at the same time. As discussed below, their most likely function was to provide drainage. At a later time, additional soil was deposited to raise the elevation of the land. At this time a trench may have been dug above the trough through the new fill to maintain the drainage function. It is possible that at some points the wooden trough was not fully exposed by this trench, with a thin layer of the later fill remaining above the wood at the bottom of the trench. At a still later time the trench was filled in.

The stratigraphic interpretation of these features is complicated by the fact that photographs suggest that another, intrusive trench may have been dug to install the north-south planking and the overlying trough. Thus, there may have been two superimposed intrusive trenches, the first dug through the earlier landfill to install the planking and trough and the second to re-expose the wooden trough after it had been covered by a later landfilling episode. The fact that the
earlier trench extended almost the full north-south extent of TC U may have prevented the excavators from noting it. A thin layer of brown silt which underlay the north-south planking may have been associated with its installation.

The 17th century landfill deposits began beneath the brown silt at a depth of approximately 20-24 inches below the surface of the test cut. The uppermost landfill stratum consisted of approximately six to ten inches of greenish sandy silt. This was underlain by up to 12 inches of brown silty sand except in the northeast corner of the test cut, in which the greenish sandy silt continued downward. The top of the bulkhead planking was encountered 17 inches north of the south wall of TC $U$ at the base of the brown silty sand stratum. North of the bulkhead, additional greenish sandy silt continued downward beneath the deposit of brown silty sand. South of the bulkhead, however, the latter deposit was underlain by a lens of tan sand and a stratum of red sand. A small lens of the red sand was also present north of the bulkhead.

The soil beneath the bulkhead construction apparently represents the river bottom deposits. This soil consisted of a gray clayey silt with a thin layer of gray/green sandier silt overlying the clay in some areas.

The bulkhead consisted of one to two inch thick planks approximately one foot wide. The section exposed by TC $U$ and BT \#2 included the intersection of two of these planks, at
which point the two overlapped. Backhoe Trench \#2 exposed one of the vertical posts, approximately three inches in diameter, which supported the planks in an upright position. Additional posts were subsequently uncovered as described below.

Other planks lay flat on the clayey silt beneath the upright planks, extending about two feet to the north. A log, approximately eight inches in diameter, underlay this planking. Except for the boards directly under the upright planks, which appeared to have been purposely placed in this position, there was no apparent patterning to the boards and logs north of the bulkhead. The probable function of the bulkhead was to support the landfill during the filling process, perhaps to prevent its being washed away by tidal action.

The fact that the deposit of brown silty sand immediately above the bulkhead extended both north and south of it, while different deposits were encountered to the north and south beneath the level of the top of the bulkhead planking suggested the possibility that there were three episodes of land-filling. The first episode would have created the land to the north, with the bulkhead serving to support the fill. The second would have created a land surface south of the bulkhead at the same elevation as that to the north. A third filling episode or episodes represented by the brown silty sand and green silt would have raised the level of the land surface both north and south of the bulkhead.

While this may have been the actual filling sequence at the location of $T C U$, it is probable that no appreciable time elapsed between deposition of the various loads of fill. This is suggested by the fact that the same green silty soil was present both above and below the brown sand and at the top of the bulkhead in the northeast corner of the test cut. In addition, the stratigraphy shown in the west profile of BT \#2 is very different than that shown in the east profile of the trench and described in the excavation records of TC U . on the west side of the backhoe trench, layers of mottled medium brown sand and silt and light brownish red sand with rustcolored mottling replace the green silt and brown silty sand strata uncovered in TC U. In addition, the eastern profile shows no difference in the soil types north and south of the bulkhead. The most probable explanation for the presence of the different soil types is the deposition of separate loads of fill, taken from various sources, during the filling process.

## Dating of the Deposits

## North-South planking and Above

The mean ceramic date for the 14 dated sherds recovered from the thin layer of brown silt excavated below the northsouth planking is 1710.9 years, and the pipe stem date (based on ten measurable bores) is 1706.1. One piece of dated bottle glass was manufactured between 1680 and $1730 / 40$. The initial date of manufacture for six of the 14 dated sherds was later
then 1690. These include one sherd of blue glazed delft, one Westerwald stoneware sherd and four sherds of British Brown stoneware. These date suggest that the planking was installed in the early post-landfilling period probably during the early 18th century occupation of the structure whose foundation walls were exposed in the northern portion of Lot 14. This plank feature is also seen in Test Cuts $W$ and $S$ in Lots 13 and 15 where the material immediately overlying it seems to date to slightly later in the 18 th century.

The material excavated above the north-south planking (exclusive of the intrusive trench immediately above the eastwest trough) yielded mean ceramic dates between 1712 and 1721. However, these deposits also contained three creamware and four pearlware sherds, which represent $9.4 \%$ of the 74 dated sherds recovered. Analysis of the ceramic types present in this deposit and the cumulative frequency curves suggest that this material represents redeposited fill. The presence of pearlware and absence of later ceramic types suggests a deposition not too long after the end of the Revolution.

The intrusive trench above the trough contained one whiteware sherd, as well as earlier types. This lends some support to the inference that this trench was filled-in in the 19th century. The topmost excavated context, immediately beneath the shovelled out overburden, contained three sherds of 19 th century type ceramics. These may have originated in the overburden.

## Landfill Deposits

Of the two soil types which constituted the landfill deposits above the level of the wooden bulkhead, the browny silty sand contained a much greater artifact density (24.5 per cu.ft.) than the green silt ( 9.0 per cu.ft.) and also contained a much higher density of marine shell than the latter deposit. The mean ceramic date obtained from the 100 dated sherds recovered from the brown silty sand is 1687.4 and the Binford date from 68 measurable pipe bores is 1678.1. The green silt yielded only 10 dated sherds and 10 measurable bores. It is interesting to note that all of the 78 measurable pipe bores recovered from these two landfill deposits were larger than \#5 (5/64 inch). In contrast, 20.5\% of the 83 measurable pipe bores recovered only from the deposits above the landfill were \#5.

The landfill deposits below the level of the top of the bulkhead yielded only 18 datable ceramic sherds and 13 pipe bores. All of the artifacts are consistent with a late 17th century deposition. These artifacts present no convincing evidence that the fill north of the bulkhead was deposited significantly earlier than that to the south. The most significant difference in the assemblages excavated north and south of the bulkhead is the greater density of building material (largely brick) excavated to the south (7335 grams/cu.ft. as opposed to 132 gms./cu.ft. north of the bulkhead). Four of the five maker's marks on the pipe
fragments excavated from the landfill deposits are attributable to 17 th century pipe makers (HG, WE, EB, CB). The sixth mark (AIB) is of unknown date.

The gray silt and clay beneath the bulkhead was not screened. Therefore, there may have been bias in the selection of artifacts which were retained. The 80 measurable pipe bores yielded a Binford date of 1664. This early date is consistent with a pre-landfill deposition. The mean ceramic date, however, is 1692 :1 based on 33 dated sherds which is more comparable with the dates obtained from landfill deposits. It should be noted that $47.1 \%$ of these sherds are 17th century-type earthenwares, as opposed to $36.9 \%$ of the sherds from the overlying landfill deposits which are in this category. One sherd from the gray silt and clay deposits which was identified as pearlware was obviously intrusive into this deposit. Four pieces of bottle glass from the clay and silt were dated to $1680-1730 / 40$, consistent with both the late pre-landfill and the landfill periods. These deposits yielded, among other items, a lead weight, which may have functioned as a fishing sinker.

## Exposure of Bulkhead and Associated Construction

Our plan of excavation involved the exposure and recording of the full extend of the bulkhead, using power equipment, subsequent to the testing of the landfill on either side of the bulkhead in $T C U$. However, due to a severe thunderstorm on the last day available for excavation on the

Pearl street portion of the site, we were unable to carry out this exploration to the extent planned. We were able to expose the bulkhead construction from the location of TC U eastward to the Lot $14 / 15$ boundary.

The construction of the bulkhead in this area was similar to that uncovered in BT \#2 and TC U--planking supported by wooden posts. We encountered the easternmost vertical supporting post approximately four feet west of the Lot 14/15 boundary. This post was approximately five inches in diameter. We encountered another wooden feature abutting this post on the east side and extending to the north and south. This feature consisted of adjacent wooden boards, laid flat, some four to five feet in length, eight to ten inches wide and two inches thick, with the long dimension oriented east-west. These planks were supported by underlying north-south oriented wooden beams which measured nine by nine inches. We were unable to expose the full length of the beams although they extended at least one and a half feet south and seven feet north of the line of the bulkhead.

The top of the exposed planking appeared to overlay the gray clay and silt deposits which marked the original river bottom. Therefore it is likely that the construction predated the deposition of the landfill. It is possible that the deposits of gray clay mark the existence of a marshy area at this location. The wooden planking and underlying beams may represent the remains of a causeway or boardwalk which enabled
the inhabitants of the area to traverse the marsh for purposes of shellfish gathering, fishing etc.

We were only able to expose the bulkhead construction for a few feet west of BT \#2. We noted a quantity of both large dressed planks and logs in apparent association with the bulkhead in this area. During the subsequent excavations of the foundation for 7 Hanover Square, we noted that a number of large logs with sawn ends were concentrated in this general area of the site.

SHOVEL TEST 19
In order to determine the extent of the trough uncovered in TC U, we placed ST 19 to excavate the area from TC $U$ westward to the Lot $14 / 15$ boundary wall (Figure $77 \mathcal{F}_{\text {j }}$, leaving an 18 inch baulk bulk between $T C U$ and $S T$ 19. Although the north-south wooden planking which underlay the trough extended to the Lot $14 / 15$ boundary wall, the trough itself appeared to end approximately one and a half feet west of the boundary wall. Photographs of ST 19 show the trough-like shape of this feature, strengthening the interpretation that it functioned as a drain. It is possible that the construction of the Lot $14 / 15$ boundary wall removed the trough near the wall, since the excavation of $T C S$ in Lot 15 (see below) suggests that this feature did extend into Lot 15.

TEST COT T
Examination of the southern portion of BT \#2 indicated the presence of early-mid 18th century ceramics and lenses of
gray ashy soil. To examine these deposits we placed TC T at the southern terminus of the backhoe trench. This location was in the "backyard" area between the latest building to stand on Lot 14 and the early 20 th century structure which stood on Lot 19. Test cut $T$ measured seven feet by approximately three and a half feet (Figures 78, 79).

The southern portion of TC $T$ had apparently been disturbed by the construction of the early 20 th century building just mentioned. This disturbed area yielded a number of whole bricks which continued the embossed name of the manufacturer. These included "Beggs \& Co.," "Brooklyn Fire Brick Works," "Phoenix," and "Malden." De Noyelles (1974) identifies only the latter bricks which were manufactured by the Malden Brick Company and dated to 1905.

In the central portion of $T C T$ the area of disturbance extended further northward than in the eastern portion of the test cut, while the western portion was apparently undisturbed. Approximately three feet from the south wall of TC $T$ in the disturbed central portion, a vertical metal pipe was uncovered extending downward below the maximum depth of excavation of the test cut. The northward extension of the disturbed area may have been associated with the installation of this pipe, thought to have provided drainage.

The southwest corner of $T C T$ was not affected by the early 20 th century disturbance and at a depth of $8 / 10$ inches below the test cut datum the remains of what appeared to be


## Figures 78-79. Test Cut T

1. brown gray sandy silt mottled with brick, mortar, charcoal, and yellow silt
2. red sand
3. greenish-yellow sandy silt mottled with brick and charcoal
4. dark gray silt mottled with charcoal
5. intrusive pit
6. brown silty sand mottled with coarse brown sand
7. brown-gray sandy silt mottled with charcoal
8. dark gray silty sand mottled with charcoal and mortar
9. gray ash, sandy silt, charcoal, and shell
10. yellow silt with patches of gray
11. gray silty sand mottled with greenish silt
12. hard-packed red sand mottled with yellow silt
13. coarse black sand
14. coarse red sand
15. dark brown sandy silt
16. gray sandy silt with construction debris
17. greenish-yellow sandy silt
18. black sandy silt with patches of rusty sand and fragments of coal
19. black sandy silt mottled with yellow silt, charcoal, and brick
20. black sandy silt mottled with yellow silt, charcoal, and brick
21. yellow silt mottled with gray silt, brick, and mortar
22. hard-packed red sand mottled with yellow silt
23. yellow silt mottled with gray silt, brick, and mortar
24. light gray sandy silt with charcoal
25. yellow sandy silt mottled with black
26. hard-packed yellow silt
27. light gray sandy silt with charcoal
28. red sand mottled with black and yellow silt
29. grayish-brown sandy silt
30. hard-packed yellow-brown silt with mortar
31. grayish-brown sand
32. grayish-brown sandy silt
33. yellow-gray silt with mortar
34. dark gray silty sand
35. light gray silt with mortar, shell, and rust silt
36. light gray silt with mortar, charcoal, and shell
37. hard-packed gray-brown silt
38. yellow sandy silt
39. light gray silt with mortar, charcoal, and shell
40. greenish-yellow silt with pockets of gray
a cobble floor was uncovered in this area. The soil immediately overlying the cobbles consisted of a black sandy silt mottled with mortar and brick. Unlike the disturbed area, which contained a substantial proportion of 19 th century ceramics (11.4\% of 131 dated sherds) and bottle glass (121 of 123 pieces of dated bottle glass were assigned to the post1800 period), the later deposit contained no 19 th century ceramics of glass. Of the eight dated sherds from this black sandy silt, four were delftware; one, 17 th-century buff earthenware; one, buff slipware; one, white salt-glazed stoneware; one, overglaze painted creamware; and one, 18thcentury overglaze painted, famille rose porcelain.

A lens of red sand was excavated immediately beneath the cobble floor. This probably represents the bedding in which the cobble floor had been laid. This deposit yielded one creamware, and four white salt glazed stoneware sherds, one of which was debased scratch blue. This ceramic evidence suggests that the cobble floor was constructed in the latter part of the 18th century. The earliest possible date of construction would be the mid-1760s which is the approximate initial date of manufacture of the creamware and debased scratch blue stoneware. The mean ceramic date for the five sherds is 1771.

Beneath this cobble floor and its red sand bedding a deposit of gray and gray/brown silty sand with some pockets of gray ash and charcoal was excavated to a depth of $17 / 19$
inches. this deposit became mottled with yellow silt near its base. At $17 \frac{1}{2}$ inches the remains of a second cobble floor was detected in the extreme southwestern portion of the test cut. Cobbles were also found in the soil between the levels of the two cobble floors.

The deposit between the two floors was excavated in three levels. The entire deposit yielded 16 dated sherds with a mean ceramic date of 1719. One creamware sherd was recovered from the uppermost of the three levels. The other ceramics consisted of one white salt-glazed stoneware, one buff slipware, four delftware, one l7th-century buff earthenware, one Buckley ware (1740-1780), and one agate ware (1740-1810) sherd. It should also be noted that a lens of gray ash with charcoal below the level of the lower cobble floor and adjacent to it yielded three additional agate ware sherds and a pipe bowl fragment with the maker's mark wN, dating either to 1722-39 (William Naylor) or 1730-35 (William Nicholas).

A concrete block in the northwest corner of TC $T$ was removed during the course of our excavations. The underlying soil was similar to that excavated from the southwest corner of the test cut as discussed above. The 31 dated sherds consisted of delftware (19 sherds), buff slipware (five sherds), white salt-glazed stoneware (one sherd), "midlands" type yelloware (three sherds), "bellarmine" type stoneware (one sherd), and brown stoneware (two sherds). The latter two sherds were identified as 19th century brown stoneware bottle
sherds. No creamware sherds were recovered from this deposit. The calculated mean ceramic date is 1716.5. A fragment of an amber glass bottle recovered from the deposit was also coded as 19th century beer/ale bottle glass. The presence of the 19th century artifacts suggest that this deposit may have suffered some contamination from the adjacent early 20th century construction.

The northeast corner of the test cut was largely unaffected by the 20th century disturbance. Most of the soil in this area consisted of greenish yellow-brown sandy silty and light gray silty sand. The ceramics from these deposits are similar to these from the western portions of TC T which were discussed above. Fifty eight dated sherds were recovered. These include 43 delftware, six buff slipware, two 18th century British brown stoneware, six 18 th century "midlands" type yelloware, and one creamware sherd. The mean ceramic date is 1707.8 , but the ceramic assemblage may have been deposited as late as the third quarter of the 18 th century. It should be noted that the deposit also yielded four pieces of mold-made bottle glass dated to the post-1800 period which suggests that some contamination of these deposits by the early 20th century disturbance may have occurred.

The soil beneath the disturbed area in the center of the test cut yielded 44 dated sherds with a similar distribution of ceramic types as the other 18th century contexts discussed
above. Soil below this deposit and beneath the other deposits in the northern portion of TC T was excavated as one unit to a depth of $23 \frac{1}{2} / 30 \frac{1}{2}$ inches. The 69 dated sherds consisted of delftware (54 sherds), buff slipware (10 sherds) and "midlands" type yelloware (four sherds). The ceramics from these deposits suggest an 18th century deposition. However, both deposits contained bottle glass fragments dated to the 19th century, including one pharmaceutical bottle fragment containing the embossed word "Brooklyn," reinforcing the suggestion that this area of the test cut had been contaminated by the early 20 th century construction mentioned above.

A small lens of gray-brown sandy silt with gray clay and yellow silt mottling in the northeastern corner of the test cut was the only deposit not containing 18 th or 19 th century ceramics or glass. The 16 dated sherds consisted of 13 delftware and three buff slipware sherds. This deposit could represent the top of the 17 th century landfill deposits, but the absence of later ceramics could also be due to sampling error. Excavation of $T C T$ ended at this point, before the 17th century landfill deposits were encountered.

Summary
Test Cut $T$ sampled an area of the site which had undergone several episodes of disturbance. The southwestern portion of the test cut encountered the remains of what seem to have been two cobble floors. Because only a small portion
of these floors was undisturbed, they could not be accurately dated, but the uppermost of the two was probably constructed during the latter half of the 18th century. Later in this period an intrusive event resulted in the destruction of the floors and the deposition of soil containing 18th century artifacts. The nature of this intrusive event could not be determined from the excavated material. The construction of the early 20 th century building on Lot 19 resulted in the disturbance of the $18 t h$ century material, and the mixture of this material with overlying 19 th century material and artifacts deposited during the construction of the building.

## CHAPTER SEVEN

## Documentary Research -Lot 15

Lot 15 (18'9"/8" X 70'7"/10") falls within the bounds of Evert Duyckinck's 1687 Water Lot Grant, measuring 38'3" X 95' (Liber A p51). This original parcel was subdivided along its north/south axis. By 1697, the year an additional 19'1䒜" X 46'9" Water Lot was granted at the north of Lot 15, the western 19'1娄" X 95' parcel (Lot 15) belonged to the mariner Francis Goederus (or Goodhorn) (Liber A p377). The other half, a parcel not within the project area, belonged to Garret Duyckinck. Goedderus's widow Rebecca remained in Lot 15 until at least 1723-4 (tax assessment records). Josiah Miukin, Rebecca's son-in-law, became the owner of the parcel (then 18'9" X 146') in a deed recorded in 1737 (L32 p123) although a Water Lot Grant (LI3 p217) and the tax records place him here as early as 1734.

The parcel had passed back into the Duyckinck family by 1789. Gerardus Duyckinck, a glassmaker, is listed here in the tax records between 1789 and 1795. Stokes cites the following notice in his chronology:

Gerardus Duyckinck, living near the Old Slip Market in New York, continues to carry on the business of his late father, deceased, viz., limning, painting, varnishing, Japanning, gilding, glazing, and silvering of looking glasses, all done in the best manner... (N.Y. Post Boy 5/19/1746)

Gerardus is also mentioned in a later issue of the same paper. A passage dated December 10,1755 states that he is selling
imported goods "at his house on the dock next door to the sign of the Prince of Orange, near the old slip."

A gunsmith, Thomas Smith, appears in the city directory at the same time as Gerardus Duyckinck (1792-94). Gerardus's widow Ann conveyed the parcel to her son and daughter in 1797 (L52 p157, p300) and they in turn sold it to John Swartwout (City Marshall), Robert Swartwout and Peter Dumont in 1801 (L61 p337). The Swartwouts and Dumont purchased Lots 12 and 13 at the same time (L20 p258; L60 p380) and then sold all three lots by 1807-9 (L74 p407, L84 p249, L106 p446). Tax assessment records list David Dunham's stable here in 18089, followed by John Swartwouts shop between 1810 and 1813 although the latter seems to have sold the property in 1807 (L74 p407). By 1815 a new building had replaced Swartwout's "shop" (tax assessment records).

John Johnson and William Halstead (owners of Lots 13 and 14--L105 p426,428; L107 p110) owned the lot between 1818 and 1834 (L115 p149; L125 p339; L188 p266; L267 p543). They appear here in the Tax Records and city directories as "merchants" from 1815 to 1829. Subsequent directories and tax records list a series of "merchants" and "dry goods" stores at this address. The Astor Family owned the lot during the latter half of the 19th century (L1436 p271; L8 p293).

There was apparently at least three building episodes in Lot 15 prior to 1860. It is assumed that David Dunham's 1808 stable was housed in a structure other than that built as the

Duyckinck residence in the 17 th century. The stable, which also functioned as Swartwout's "shop" according to the 1813 tax assessment records, was replaced by a more highly assessed building in 1815. This latter building is probably described in the 1860 tax assessment.

## Excavation - Lot 15

## TEST CUT A

During the testing phase of the project, TC A was located according to our random sampling plan in the northern portion of Lot 12 , approximately 15 feet south of the Pearl Street base line and six feet west of the Lot $15 / 19$ boundary wall. Subsequently, stone foundation walls of the late 17 th -century house which stood on this lot were uncovered. The south wall of TC A was on a line with a point one foot south of the northern end of the early stone wall which underlay the more recent Lot $15 / 19$ boundary wall. Although TC A was located within the boundaries of the early house walls, no domestic deposits associated with this structure were encountered.

Prior to the excavation of TC A the concrete floor of the most recent building to stand on Lot 15 was removed by the backhoe. Several inches of gravel bedding underlay this floor. The remains of the concrete floor and the remaining bedding were cleared from the surface (Figures 80, 81). Below this was a thin layer of reddish/brown sand (stratum II). Beneath the reddish brown sand a thin layer of black sand


FGG 80-81
TEST CUT A

Figures 80-81. Test Cut A

1. sand with cinder and construction rubble
2. black-brown sand (burned level)
3. red sand with some yellow silt and charcoal
4. hard-packed yellow silt with mortar
5. red sand
6. red sand mottled with yellow silt and shell
7. brown sand mottled with clay
8. red sand
9. orange sand
10. greenish-yellow silty clay mottled with red sand
11. greenish-yellow silty clay
12. gray sand
13. gray sand with water-worn pebbles
(stratum V) appeared over approximately $40 \%$ of the square. In an additional $40 \%$ of the square the red sand continued downward to a depth of about five and a half inches. In the remaining $20 \%$ of the test cut, an irregularly shaped intrusive area (stratum IV) was recognized immediately under the topmost red/brown sand. This disturbance was apparently the result of the activity of a burrowing animal. The soil was excavated and screened separately. At a depth of three and a half to five and a half inches below the surface, a layer of yellow, hard packed silt containing mortar was encountered over most of the square, except for the area where it was cut through by the intrusive burrow. In most of the square, a very thin layer of red sand was interposed between the black sand and the yellow silt.

In summary, the stratigraphic sequence in part of the square was red sand/yellow silt, in other parts, red sand/black sand/yellow silt and in others red sand/black sand/red sand/yellow silt. To complicate matters, in still other parts of the test cut all but the uppermost red sand layer was disturbed by the burrow. Examination of profile drawings and photographs as well as the excavator's notes suggests that the black stratum represents the results of an episode of in situ burning rather than the deposition of burnt organic material. The black sand does not have a larger quantity of organic material than the over- and underlying red sand strata. Examination of photographs of the north wall

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1915-1922 The iconography of Manhattan Island, New York. 1498-1909. New York: Dodd, Mead \& Co.
suggest that the burning resulted in the staining of the yellow silt stratum in at least one location. Supporting the suggestion that the burning occurred in situ.

Analysis of ceramics indicates that the red sand and black sand strata (strata V, VI and VII) above the yellow silt layer were deposited during the 18th century. These strata contained 18 dated sherds, yielding a mean ceramic date of 1726.4. Three of these sherds were white salt glazed stoneware and three creamware, with the remaining sherds being delftware and buff slipware. The ceramics suggest deposition during the third quarter of the 18th century. If deposition was accretional, it could have begun after the filling of the land and continued until after the beginning of the manufacture of creamware in the 1760s. A pipe bowl from the burned layer had a "TW" maker's mark. This could date from approximately 1675-1717+ (Thomas Watts) or 1739-c1754+ (Thomas Wadham). The latter date is more consistent with the ceramic evidence.

The stratum of red/brown sand (stratum II) underlying the concrete floor yielded 15 dated sherds with a mean ceramic date of 1755.5. The inclusion of four pearlware sherds, in addition to the later mean ceramic date, suggests deposition of this material after the burning of the underlying material had occurred, and after the introduction of pearlware in the 1780s.

The evidence suggests that probably during the third
quarter of the 18 th century a layer of red sand was deposited at the location of TC A. Some of this soil became stained by burning. Subsequent to this, and at some time before the construction of the concrete basement floor, additional redbrown sand was deposited over the burned material. It is tempting to interpret the layer of hard packed yellow silt with mortar (stratum VIII) as a floor of an early building on this lot. The 10 ceramic sherds recovered from this stratum include no clear 18 th century types. However, the profiles indicate that a "tongue" of this silt layer extended downward in the southeast corner of the square to a depth of four inches below the main silt layer, . Red sand representing a portion of the landfill deposition, lay between the silt layer and the lower tongue. This stratigraphy suggests that the yellow silt may not represent a purposely laid floor. It is possible that mortar was mixed with the underlying fill stratum during an early episode of construction on this lot.

The material excavated below the yellow silt layer beginning at an average depth of six inches represents an early landfill deposit on the site. This fill consists predominately of a reddish sandy soil with lenses of gray and orange sand (stratum IX) to depths of between 40 and 50 inches below the surface. The red sand fill was fairly uniform in terms of artifact density. However, a depth of approximately 18-20 inches (except in the northeast corner of the test cut where it began at a depth of six to eight inches) the sand
contained a high density of oyster shell (approximately 2007 grams/cu.ft.). The excavators also noted that the soil containing the high shell density was mottled with yellow silt. This soil continued to a depth of 32-38 inches. Below this, red sand similar to that encountered above the shell concentration continued to a depth of 40-42 inches except in the south wall of the test cut where it reached a maximum depth of 52 inches.

At a depth of 42 inches, a pile of rocks was encountered in the northeast corner of the square. The soil adjacent to these rocks was a greenish yellow silt, most of which was mottled with red sand. Deposits of gray clayey soil were also noted between some of the rocks. Rocks were present in the southeast corner of the test cut to a depth of 54 inches. However the mottled silty soil which surrounded the rocks was also present in the south and west portions of the square beginning at 50-54 inches and extending as deep as 64 inches at the west wall.

In the west portion of the square a lens of brown sand mottled with clayey soil was present between the red sand fill and the underlying mottled silty soil. This brown sand was also present in the north portion of the square. Most of this soil was excavated in stratum IXi. The artifacts in this material suggest that the brown sand is a continuation of the fill deposits. The only substantial difference from the rest of stratum IX was the large number of window glass fragments
(640) recovered from stratum IXi. It is interesting to note that Evert Duyckinck, the water lot grantee for Lot 15, is listed in the documentary records as a glass maker.

At a depth of 52 inches, rocks were encountered in the south and east portions of the square. The soil matrix surrounding these rocks consisted of gray sand as contrasted with the silty soil present between the pile of rocks in the northeast corner. While the former did not extend to the northwest corner rock cluster of the square, the gray sand stratum did. The rock and sand stratum sloped downward slightly from east to west. Some of the rocks were removed and the surrounding soil (strata Xa and XIa) screened. Few artifacts were recovered. The patterning of the rocks and the associated stratigraphy did not suggest that they were placed as part of a structure. Subsequent further exploration of this area using the backhoe to expose a wider area also suggested a lack of patterning and that TC A had encountered the western end of a deposit containing many rocks.

Below a depth of 60 inches, only the northwest corner of TC A was excavated. In this portion of the test cut few rocks were present although the yellow silt and gray sand in which rocks were imbedded elsewhere in the test cut continued downward. Excavation of this area continued to a depth of 70/74 inches (strata XIb and XII). Below the gray sand, at a depth of $60 / 68$ inches, a stratum of coarser gray/brown sand containing water-worn pebbles was encountered, with a thin
lens of gray silty sand between this stratum and the overlying gray sand in the north and west part of the excavated area. Another thin lens of green silt was present several inches below the top of the gray/brown pebbly sand.

The soil between 60 and 70 inches was excavated as stratum XIc and XId. This soil contained a lower density of artifacts than the overlying strata. The presence of water worn pebbles in the coarse gray/brown sand indicates that this material was either completely submerged or subject to tidal action prior to the land-filling. In addition, many of the brick fragments and some bone fragments in this deposit were water worn, indicating that they were deposited prior to filling.

Pipe stem analysis also suggests that the artifacts recovered from the gray/brown coarse sand were deposited prior to filling. Of the stems recovered from the landfill deposits (strata IX, X, XIa, XIb and XII), most had \#7 or \#6 bores, with the former diameter being the most frequent. The mean pipe stem date calculated for the 111 measurable bores recovered from these strata was 1668.2 years. Eleven of the 19 measurable pipe bores (57.9\%) recovered from strata XIc and $d$ had \#8 bores, which contrasts with the landfill strata having $21.6 \%$ of its pipes of this size borea. The mean pipe stem date for strata XIc and $d$ is 1643.9 years. While conclusions based on such a small sample must be made with caution, the data are consistent with the assumption that the
artifacts recovered from strata XIc and d were deposited on the river bottom prior to the land-filling.

It is also interesting to note that the ratio of yellow to red brick in strata XIc and $d$ is approximately 3.4 to 1. In all other excavated levels, substantially more red than yellow brick was recovered (except for stratum XIb which had slightly more yellow. Yellow brick is thought to have been in use during the period of Dutch occupation.

The coarse gray/brown sand excavated below 70 inches (stratum XIII) was nearly sterile, and excavation was not continued further. However, the underlying soil was sampled to a depth of 93 inches using a post-hole digger and the coarse gray/brown sand continued to this depth, at which the water table was encountered.

The data for TC A suggest that artifacts were deposited on the river bottom, which was made up of coarse gray/brown sand at this location. This soil may have been covered by water only at certain times during the tidal cycle. It is likely that the finer gray sand which overlay the coarser sand was also a pre-filling river bottom or tidal deposit. If so, the larger rocks imbedded in this sand would also have been present prior to the filling. Unfortunately, few artifacts were recovered from the gray sand among the rocks in the eastern part of the square. The thin lens of gray sand in the western part of the square was excavated with the overlying yellow green silty soil or the underlying coarse gray/brown
sand, so that it was not possible to determine its artifact content separately.

It is possible that the greenish/yellow silty soil which overlay the gray sand also represents pre-fill river bottom deposits. However, the artifacts recovered from this deposit did not share the water worn appearance or other characteristics of those recovered from the coarse gray/brown sand. This soil probably represents the first deposit of land fill in Lot 15. The rocks in the northeast corner of the test cut which are surrounded by this silty soil could have been present prior to the filling and the silt deposited around the rocks, or as is more likely, these rocks could have been deposited with the silty soil during the filling process.

TEST CUT $s$
Backhoe Trench \#1, placed in the southern half of Lot 15 during the testing phase of the project, uncovered what turned out to be the western foundation wall of the extension to the late 17 th century structure which was constructed on the lot.

Examination of the backhoe trench profiles suggested that 18th or early 19th century deposits of archaeological interest might be present south of the rear wall of the extension. Therefore, TC S was excavated adjacent to the east wall of the backhoe trench. The test cut extended three feet east of the east wall of the backhoe trench and six feet south of the rear wall of the extension. It should be noted that the site map shows ST 15 "superimposed" on the location of TC S. Shovel

Test 15 was begun at this location, but after the surface rubble had been cleared away, we decided to place a test cut (TC S) rather than a shovel test at this location.

Excavation of TC $S$ (Figures 82,83 ) began after the concrete floor and underlying gravel and cinder bedding had been removed. Additional deposits of rubble in a brownish silty sand soil matrix were encountered beneath the floor and bedding.

On the south end of the excavated area, the remains of a wall, consisting of one course of stones, and wooden planking running in a north-south direction were encountered at a depth of approximately 20 inches below the surface of the test cut. Since the test cut datum was at the top of the overlying rubble, the planking was only about 10 inches below the top of the stone wall in the south portion of the square. It continued to the south beneath this wall. In the north portion of the square the north-south planking was deeper, approximately 27 inches below the surface datum.

The north-south planks were approximately 10-12 inches wide and one inch thick. There was a space of between three quarters and two and a half inches between each of the three individual planks which were uncovered within the boundaries of TC S. There was a gap of several inches between the planking in the north and south portion of the test cut.

Two additional planks, oriented in an east-west direction immediately overlay the north-south planks in the northern


Figures 82-83. Test Cut S

1. rubble
2. bright yellow-green sandy silt
3. wood planking
4. fine green silt

4a. fine green silt mottled with brown silt
5. mottled fine green silt and brown sand
6. red clay
7. fine grayish-brown silt
8. brown silt mottled with green silt and red clay
9. red sand
10. red clay
11. mortar rubble

11a. brick rubble
12. yellowish-brown sandy silt with mortar
13. brown sandy silt with mortar

13a. gray-brown clayey sandy silt with mortar and brick
14. brown silt
15. reddish-brown sandy silt with rubble
16. light red decayed mortar and brick
17. yellow-brown silt with mortar
18. dark brown silty sand with rubble
19. ashy red sand with shell and charcoal
portion of TC S. The first was located about six inches and the second approximately 16 inches south of the north wall of the test cut. The second plank was supported by a row of small stones to either side. This plank was a foot wide and had a concave "trough-like" shape. Thus, the planking and overlying trough are similar to the features uncovered in TC U (in Lot 14) and W/D (in Lot 13) and ST 19 (Lot 14). The difference in elevation of the trough-like planking in the three test cuts was only slightly more than an inch. The ST 19 measurement increases the range of variation to approximately five inches. However, there are reasons to consider this last measurement less reliable than the others. These trough-like features are aligned almost perfectly from east to west. Measurements indicate that the ST 19 and TC U trough planking was 52 feet and the TCW and TC S troughs were 53 and 53.5 feet, respectively, south of the Pearl Street baseline.

With the exception of the ST 19 elevation, the differences in elevation and distance would appear to be within the limits of error of the mapping procedures used. Thus this trough was probably a single feature which extended across Lots 13,14 and 15 , perhaps providing drainage.

The archaeological deposits associated with this feature, discussed below, and the fact that the Lot $14 / 15$ boundary wall apparently cut through it (see discussion of Lot 14) indicates that it predated the final construction phase on Lot 15. The
archaeological deposits also indicate that the feature was not associated with the 17 th century structure.

The profile of BT 1 indicated that a cut sandstone block wall had cut through the western wall of the early house extension approximately 43 feet south of the Pearl Street baseline. A builder's trench for this wall could also be seen in the backhoe trench profiles. This wall clearly post-dated the construction of the early house extension. Unfortunately, because of the limitations of time available for the project, we were unable to sample the builder's trench and more closely date the construction of this wall. However, it seems to be aligned with another cut stone wall encountered in Lot 12 which dates to the late 18 th century (see discussion of TC F). If we assume that the two walls were built according to a common building alignment it would indicate that the wall in Lot 15 dates to the same general period. It is likely that two wooden trough-like feature uncovered in TC $S$ was associated with this construction phase. If the sandstone wall represented the rear wall of a structure fronting on Pearl Street, the feature would have been located in the back yard of the house, rather than its basement.

A deposit of light green silty soil underlay the wooden floor in the southern portion of TC S. This deposit ended at approximately the same depth as the wooden floor in the northern portion of the test cut. A thin deposit of the light green silt also was excavated beneath the north planking. The
stratigraphy suggests that the higher, southern wooden floor was built before the wooden floor uncovered in the northern portion of the test cut. A trench was then dug and the northern floor and its overlying trough were installed. There was some stratigraphic evidence that still later, another narrow trench was dug just to the south of the trough planking. This may be represented by a deposit of darker brown silt excavated at this location (strata VIIa and b).

Beneath the planking and associated deposits, a deposit of reddish brown sand was encountered in the northeast corner of the test cut which probably represents the late 17th century landfill. However, the deposits in the remainder of the test cut were associated with a wooden box which was nearly identical with the one excavated in TC W and D although the wooden sides and supporting beams of this feature were more decayed than those of the TC D/W feature.

The remaining sides of the feature began at approximately $35 / 40$ inches below the test cut datum, the supporting side wales (see TC W for details of construction) at 12 inches, and the wooden floor of the box at $48 \frac{2}{2} / 50$ inches. It should be noted that the elevation of this floor is almost exactly the same as the floor of the box in $T C D / W$ (the measured difference being approximately one inch). As in TC D/W, a deposit of red clay was packed around the box. Some of this clay on the east and north sides of the feature was excavated and screened. Unfortunately, we did not have the time to
excavate a section across the feature which would have enabled us to determine the sequence of events associated with its construction. However, the excavators noted that the sand on the east side of the box immediately bordering the clay, appeared to differ from the sand excavated in the northeast corner of TC S, being slightly more orange. This band of sand may represent a trench dug to install the feature similar to that associated with the feature in TC D.

The east side of the feature was located some 10 inches west of the east wall of TC S and it continued to the west of BT 1. The material within the feature was excavated so that its full north-south extent was exposed. The feature extended 52 inches in this direction, with its north side approximately one and a half feet south of the rear wall of the 17 th century house extension. Only the easternmost 42 inches of the feature were excavated. However, backhoe clearing operations in Lot 14, undertaken on the last day of excavation on this portion of the site and discussed in the Lot 14 description, encountered the western edge of the feature. Its full eastwest extent was 72 inches. This box is thus slightly larger than that excavated in $T C D / W$.

As a result of the excavation of the eastern portion of the box in TC S, a stratigraphic profile was created 42 inches west of the east side of the feature. A photograph of this profile shows that a later, brick feature had been installed above the remaining portion of the wooden box. This brick
feature had been previously noted in the west profile of BT 1. It appears to have been oval in shape. Only two or three courses of brick remained of the wall of this feature. Thus, it is doubtful if any deposits related to the use of the feature remained within its boundaries. The feature appeared to have a brick floor of two or three courses which was above the level at which the wooden sides of the box began.

The photographs show that beneath this brick feature, a rubble filled pit had been excavated into the original deposits which filled the wooden box. The base of the pit appears to abut the floor of the box or to end slightly above it. The nature and extent of this pit remains undetermined.

Two events may have contaminated the original deposits within the wooden box. First, a portion of the box lay within the extent of $B T$ 1. The excavation of the trench and the subsequent passage of personnel and equipment disturbed a portion of the deposits in the northern part of the box area. This disturbed soil was looser than the other deposits and was excavated separately. This disturbance, however, only affected the uppermost five inches or so of the northernmost portion of the deposits within the box.

The second disturbance affected the remainder of the excavated portion of the feature except for the southeastern portion. The disturbance was probably associated with the pit below the brick feature noted above. This disturbance, consisting of deposits of mottled gray/yellow and red sandy
silt, extended to a depth of 40 inches. The soil beneath these deposits was excavated as a single unit because of time constraints.

The southeastern portion of the area within the feature excavated in TC S contained a deposit of gray/brown fine silty sand with charcoal which contained a high density of bone. This deposit was several inches in thickness except in the extreme southeast corner of the box, where it extended approximately 11 inches downward to $47 \frac{1}{2}$ inches, almost to the floor of the box.

The excavators of $T C S$ noted that a thin layer of blackish/gray clayey soil overlay the wooden floor of the box. This deposit may have been associated with the use of the feature, or may have been a result of the decay of the wood. No similar deposit was noted at the base of the feature deposits in TC D/W.

A portion of the floorboards in the northeast corner of the feature was sawn and the boards saved for later analysis. This also enabled us to ascertain the details of construction of the floor. A one to two inch deposit of silty gray sand with charcoal and shell immediately underlay the feature. Beneath this was the red sand which apparently represented the main portion of the fill deposits on this lot (see TC A).

The six floorboards of the feature ran east-west and ranged from 8-12 inches in width. Two north-south oriented beams were present beneath the excavated portion of the
feature and the floorboards were nailed to these beams. It is likely that additional north-south beams were present in the unexcavated portion of the feature. The upright boards which formed the sides of the box measured 8-16 inches in width. The wales adjoining the sides of the box had pulled away from these beams so that a space was present between the boards and the wales. However, the rusted remains of nails were noted in the boards behind the wales. These were apparently driven through the boards into the wales to hold the latter against the former. The nails had rusted through, allowing the wales to pull away from the boards. As in TC D/W, the side boards extended downwards approximately three and a half to four inches below the floor boards.

It should be noted that drawings and photographs show a board approximately two feet west of the east side of the box, about midway between the north and south sides standing upright on the floor of the feature. However, this wood was not attached to the feature, and was apparently part of the deposits which filled the box.

Dating of Deposits
The artifacts excavated from the green silt immediately beneath the wooden floor in the northern portion of the square suggest that the floor and the associated trough-like feature were probably installed as late as the last quarter of the 18th century. This would support the hypothesized association of this feature with the structure represented by the cut
sandstone wall as discussed above. This deposit yielded 23 dated sherds with a mean ceramic date of 1716.9. This date is misleading as the ceramics include three white salt glazed sherds, three creamware sherds, and one pearlware sherd, indicating deposition later in the 18th century. Twelve delftware and four 17 th-century earthenware sherds were also present suggesting that the later ceramics were mixed with redeposited landfill.

The soil excavated beneath the wooden floor in the southern portion of the square contained only 11 dated sherds, seven of which were 17 th-century red and buff earthenwares, and five delftware. Although a small sample, these ceramics do not contradict the stratigraphic evidence that the southern part of the floor pre-dates that in the northern portion of the square. A single perfume-bottle glass fragment recovered from this deposit, dated to the post-1800 period, raises the possibility, however, that the construction of the floor and trough may date to the early 19th century.

The 58 ceramic sherds recovered from above the wooden floor yielded a mean ceramic date of 1744.6 Fifteen of these sherds were creamware and four pearlware. These data suggest deposition in the same general time period as the construction of the floor although perhaps a bit later. While the deposits above the floor did contain one 19th century type ceramic sherd (whiteware), this sherd came from near the top of the deposits, and may have originated in the overlying rubble.

One glass patent medicine bottle fragment dated to after 1857 also originated in the same excavated context near the top of the deposits as the whiteware sherd. Three additional patent medicine bottle fragments were recovered from the deposits above the wooden floor, but these date to a wider range of time (from 1750-1870).

The ceramics excavated from the soil in the area overlying the wooden trough-like feature yielded a later mean ceramic date ( 1770.8 years) than the material overlying the wooden floor, based on 15 dated sherds. Nine of these sherds were creamware and one pearlware. Only one of these sherds (3.8\%) was delftware as opposed to 18 sherds (24.3\%) from the rest of the above-floor deposits. These data, although not conclusive, suggest that the trough was filled-in after the deposition of the other above-floor material. While the deposits above the floor appear to contain some re-deposited landfill material, the material in the trough may have accumulated after its period of use. Although this latter deposit contained one pearlware sherd the major difference between this and the other above-floor deposits is the fact that $60 \%$ percent of the diagnostic sherds in this deposit consisted of creamware, 18th-century refined earthenwares, and white salt glazed stoneware. Only $30 \%$ of the dated sherds in the other above-floor deposits contained these ceramic types, with a much greater proportion of delftware sherds. This suggests the possibility that the "intrusive" trench may have
been filled gradually during the period of use of creamware and pearlware, while the other deposits may represent redeposited fill. This would be in keeping with the stratigraphic interpretation presented elsewhere.

The red sand in the northeast portion of the test cut yielded 33 dated sherds which are compatible with the definition of this deposit as part of the 17 th century landfill. The mean ceramic date was calculated at 1683.2, and the Binford date obtained from 25 measurable bores was 1677.8 years. The maker's marks from this deposit (EB, WE) are also consistent with a 17 th century deposition. It should be noted that this deposit yielded a high density of architectural artifacts, most of which ( 230 of 320 ) were pieces of window glass. The association of window glass with the Duyckinck family, the water lot grantees and 17 th and 18 th century owners of Lot 15 , is noted in the discussion of TC $A$ and $Q$ (Lot 19), where some of the landfill deposits in these test cuts also yielded high densities of window glass. This suggests the possibility that one source of landfill for this water lot was other property owned by the Duyckinck family.

The deposits identified as the clay and fill within the intrusive trench built for the installation of the wooden box yielded mean ceramic dates slightly later than the landfill, 1691.7 (27 dated sherds) and 1697.3 (seven sherds) for the clay and trench deposits respectively. The latter date was skewed by the presence of a single creamware sherd. This
sherd came from the uppermost excavated context identified with the trench and may be intrusive. All of the other sherds from these deposits are either delftwares or 17 th centuryred and buff earthenwares. The pipe stems excavated yielded Binford dates of 1702.3 and 1687.9 respectively, although only nine measurable bores were excavated, eight from the trench. The deposit of gray/brown fine silty sand in the southeastern portion of the excavated area within the wooden box yielded 147 dated sherds, and a mean ceramic date of 1745.1. Ninety six of these sherds (65.3\%) are 18th-century refined stonewares, including 46 Nottingham-type stoneware (1700-1805), 42 plain (1720-1805) and seven molded (17401805) white salt-glazed stoneware, and one Elers-type stoneware (1690-1775). While 48 of the sherds were delftware, 27 of these were the later blue and polychrome decorated delftwares, with initial dates of manufacture of 1690 and 1675 respectively. Only one sherd of creamware was present in this deposit and this was an early type of creamware, with manufacturing dates of 1740-1770/80. This deposit had one of the highest percentages of oriental export porcelain (19.3\% of the total) among those excavated on the 7 Hanover Square site. One of these sherds had an exterior brown/glaze ((17201780). The above data, and the absence of other creamware or pearlware sherds, suggest a date of deposition between approximately 1740 and 1770. The Binford pipe stem date for this deposit, based on 20 measurable bores, is 1752, only
slightly later than the mean ceramic date. Sixteen fragments from a glass pocket flask were dated to the $1750-1790$ period, which is consistent with the ceramic and pipe dates.

During the period of deposition indicated by the above information, Lot 15 was probably occupied by Gerardus Duyckinck II, a great grandson of Evert Duyckinck, the water lot grantee. The difference between the ceramic assemblage in this deposit and that associated with the clay deposited when the feature was installed suggest that the deposit within the box accumulated after it was no longer used for its original purpose. It is possible that the feature served as a repository of domestic trash after its period of use. The undisturbed deposit contained 486 pieces of bone (112.2 pieces per cubic foot). However the deposit also included 103 architectural artifacts, mostly window glass and nails, yielding an NA/A ratio of 2.5. The deposit also contained high brick and mortar densities. This indicates that the feature may have been filled with a mixture of domestic and architectural debris during structural demolition or repair on Lot 15.

SHOVEL TEST 4
Shovel Test 4 was placed so as to abut the south side of the common wall (wall \#1) in Lot 15. This was the rear wall of the earliest structure built on this lot. The shovel test did not indicate the presence of a trench associated with this wall, indicating that it was built first and the landfill
deposited around it. The shovel test indicated that the soil strata sloped downward away from the wall, suggesting that the soil may have been tossed toward the wall during the filling process or dumped from the top of it. These results are consistent with tests in the other lots.

The west wall of the early house extension comprised only one course of stones. This was at the same approximate elevation as the top of the southern (rear) wall of the extension. However, the latter wall, exposed in TC S, consisted of six courses of stone, suggesting that the western wall was constructed after the rear wall. the latter must have been constructed during the land filling process, to hold the fill in place, with the former constructed after landfill had been deposited.

BACKHOE TRENCH \#IO
This trench was excavated north of wall \#1 and abutted the Lot $15 / 19$ boundary wall. It uncovered the remains of an early stone wall which was the east wall of an early structure built on the lot. This wall underlay the later, 19th century, lot boundary wall representing the wall of the last building to stand on Lot 15.

## CHAPTER EIGHT

## Excavation - Lot 19

Because documentary research had indicated that the basement of the modern building which stood on Lot 19 was deeper than most of the others, this lot was originally excluded from the area being tested. However, during the course of the project the Lot 19 basement floor was removed and the remains of stone walls were observed. One of these ran east-west, on a line with the common east-west wall (wall \#1) which had been uncovered in Lots 12-15. There was a gap in this wall extending from the Lot $15 / 19$ boundary wall to a point 14 feet east of the boundary wall, at which point a second stone wall extended northward. It was apparent that the common wall originally extended through this gap. A concrete wall, possibly a portion of a "vault" in the basement of the most recent building to stand on the lot, was uncovered in the area of this gap. The installation of the vault apparently resulted in the removal of the common wall at this location. The rear wall of the early building extension which was uncovered in Lot 15 extended eastward to the Lot 19 side of the Lot $15 / 19$ boundary wall. This wall was cut off by a later disturbance approximately nine feet east of the boundary wall. The east-west stone wall (wall \#1) in Lot 19 extended eastward 12 feet from its point of intersection with the north-south wall. At this point it was cut off by later
disturbances. The north-south stone wall extended 15 feet northward from its intersection with the east-west wall. This seemed to represent the full extent of this wall as a small portion (approximately three feet) of what was apparently the front wall of the house intersected by the north-south wall (the west wall of the house) at this point.

This Lot 19 structure apparently represented the house of Martin and Albertus clock, who obtained the water lot grant for this property in 1686. Lot 15 and the westernmost portion of Lot 19 (between the Lot 15/19 boundary wall and the western wall of the clock house) were within the lot which was granted to Evert Duyckinck in 1689. The rear wall of the extension to Duyckinck's house was present on both sides of the Lot 15/19 boundary wall. However, the fact that an early wall was present beneath the boundary wall in the front part of the lot (see Lot 15) suggests that two structures were built on this lot with what was probably a common exterior wall separating them.

SHOVEL TESTS 9 AND 10
During the testing phase of the project two shovel tests were placed in Lot 19. Shovel Test 9 was located within the front portion of the clock house, approximately one and a half feet north of the rear wall of the house. This shovel test revealed an organic appearing stratum which was believed to represent a possible midden deposit.

Shovel Test 10 was placed west of the western wall of the

Clock house, in the north wall of the backhoe trench which had been dug in the area where the common wall (wall \#1) was destroyed by the intrusive event mentioned above. This shovel test encountered a layer of wood which we considered to be possibly similar to the wood "flooring" encountered in TC s, $U, W$ and $X$. In order to further explore the deposits uncovered by ST 9 and 10 and to sample the Lot 19 landfill, we placed two test cuts in Lot 19 on either side of the northsouth wall which represents the western wall of the clock house.

TEST CUT R
Test Cut R (Figure 84) was adjacent to the east side of the western wall of the clock house and five and a half to nine and a half feet north of the rear wall of the house. Two strata were excavated between the rubble at the surface of the test cut and the gray ashy silt deposit at $6 / 8$ inches below the surface of the test cut which represented the suspected "midden" deposit. The first of these strata was a deposit of gray brown sandy silt. Two pearlware sherds were among the 17 sherds from this deposit, indicating deposition in the late 18th or early 19th century. The underlying stratum was a hard packed red and gray clayey silt. This soil yielded six dated ceramic sherds, five delftware and one Jackfield-type red earthenware. The latter has a manufacturing date range of 1740-1780. However, this stratum also contained a fragment of mold-made bottle glass dated to the post-1800 period. The


## Figure 84. Test Cut R

1. red sand and pebbles
2. brown sand
3. red-brown sand with a band of ash
4. brown silt mottled with orange sand and charcoal
5. red clay with pockets of red sand
6. gray sandy silt with shell and ash
7. rust-red sand
8. gray sandy silt with shell and ash and bands of rust-red sand
9. yellow silt mottled with gray
10. gray-brown sand with shell and ash and rust-red sand
11. brown sand with rocks, shell, and brick
12. rust-red sandy silt with rocks, shell, and gray silt

Figures 85-86. Test Cut $Q$

1. rubble overburden
2. gravel
3. gravel
4. orange-brown sand with pebbly gravel
5. brown silty sand with mortar, shell, and red silt
6. dark brown silty sand with brick, mortar, and shell
7. light brown silty sand with mortar, shell, and brick
8. pinkish red sand
9. gray sandy silt with brick, shell, charcoal, and oxidized iron
10. mottled gray, orange, and tan sand
11. black-brown decayed wood
12. gray-brown silt mottled with dark brown
13. banded red, tan, and gray-green sands
14. brown silty sand with shell and charcoal
15. red-brown sandy silt mottled with gray
16. gray-brown silty sand with iron oxide
nature of these deposits remains uncertain. since the basement of the most recent building on Lot 19 was deeper than those on the other lots, this most recent building episode removed any earlier basement floors.

The gray ashy silt which represents the possible midden underlay the above mentioned deposit. This silt contained high densities of bone, shell and artifacts, and these densities were higher than those in the underlying landfill deposits. The NA/A ratio of this deposit was only .8 , not indicative of a midden deposit. One hundred and two of the 109 architectural artifacts were window glass fragments, and large numbers of the window glass fragments were also recovered from the underlying landfill. Eleven of the window glass fragments in the gray ashy silt were "crown" glass, also a characteristic of the landfill deposits.

The thirty-one dated ceramic sherds recovered from the gray ashy silt consisted of delftware, 17th-century type earthenwares and one sherd of Rhenish gray-bodied stoneware. The mean ceramic date of these sherds was calculated at 1691.7. Twenty-six measurable pipe stems yielded a Binford date of 1675.8. This suggests that if this deposit does represent a primary midden, rather than being deposited with the landfill, it would have been associated with the earliest occupation of the lot by Martin and Albertus clock.

The deposits excavated beneath the gray ashy silt stratum apparently represented the late 17 th century landfill.

Immediately below the gray ashy silt was a deposit of gray and red sands and silts, followed by rust colored sand mottled with gray and tan silt, gray sandy silt with charcoal and, finally, brown/tan sand. The ceramics and smoking pipe fragments recovered from these deposits were consistent with an identification of these deposits as 17 th century landfill. The dated ceramics consisted of delftwares, 17th century type earthenwares and slipwares. Two 17th century pipe maker's marks (EB and HG) were present on smoking pipe fragments. The bottle glass fragments recovered from the landfill deposits include four dated to 1630-1685 and 26 dated to 1680-1730/40.

In common with TC $Q$ (see below), substantial densities of window glass were noted in the $T C R$ landfill strata, although this unit lacked the concentrated deposit (over 2000) pieces) noted in the former test cut. The window glass was also similar to that recovered from TC $Q$ in that a significant percentage of fragments were edge pieces from sheets of crown glass which were usually trimmed off by the glazier prior to installation. In the discussion of $T C Q$ we noted that the landfill at that location probably originated in a lot owned by the water lot grantee, Edward Duyckinck, opposite the water lot on the north side of Pearl street. It is possible that the clocks may have also used some of the soil from the Duyckinck lot as landfill material (the clocks also had a house adjacent to the Duyckinck house on the north side of Pearl street). The presence of window glass in the stratum
of gray ashy silt at the top of the landfill deposits suggests that this silt stratum was also a landfill deposit, rather than a primary midden deposited during the occupation of the Clock house on Lot 19.

It should be noted that one of the landfill strata, consisting of gray sandy silt, contained approximately 11,000 grams of coral. The presence of coral in various landfill strata on the site has been noted in the discussion of some of the other lots.

The stone wall, representing the western wall of the Clock house, ended at the top of the brown/tan sand deposit. This soil contained a very high density of l7th century type earthenwares, with 725 sherds being recovered. As discussed elsewhere, this type of brown sandy soil was encountered on other lots in the portion of the site closest to Pearl Street and probably represents soil which was present before landfilling.

It should be noted that the soil beneath the grey ashy deposit in the westernmost portion of $T C R$, adjacent to the stone wall, was excavated separately down to the top of the brown/tan sand. This soil appeared to the excavators to differ from that in the remainder of the test cut suggesting the possibility that it represented a wall trench for the Clock wall. However, the described soil types in this area are similar to those in the remainder of the square, although occurring at different depths. Furthermore, there was no
indication of a wall trench in either the north or south profiles. It is likely that the observed soil differences represent the deposition of loads of fill or the sloping of strata away from the wall. One of the nine dated sherds from this area was identified as creamware, which is inconsistent with the existence of a wall trench next to the clock wall. The date for the manufacture of creamware is much too late for the construction of the stone wall which appears to be contemporary with the late 17 th century stone walls encountered in the other lots. The most likely explanation is that the creamware sherd was intrusive into this deposit through rodent or soil action or was accidentally incorporated into the excavated material during the field work.

TEST CUT $\mathbf{Q}$
Test cut $Q$ was adjacent to the west side of the west wall of the clock house and nine and a half to $13 \frac{1}{2}$ feet north of the line of the common wall (\#1) which was the rear wall of the early houses fronting on Pearl street.

The first stratum (Figures 85, 86) excavated in this test cut was orange/brown sand with pebbles, representing the surface debris, including some of the gravel bedding which underlay the concrete basement floor of the most recent building to stand on Lot 19. The only datable artifact recovered from this deposit was a fragment of 19 th century mold-made bottle glass.

Beneath the orange/brown sand, an intrusive trench or pit
was encountered in the western portion of the square, sloping downward from north to south and from east to west. This pit can be seen in the northern profile of $T C$ $Q$ beginning approximately nine inches east of the western wall of the test cut.

The soil in the remainder of the test cut consisted of various lenses and strata which probably represent the late 17th century landfill. The ceramics recovered from this strata were mainly the delftwares, 17 th century earthenwares and stonewares typical of the landfill deposits. The two pipe maker's marks (EB and WH) from the TC Q landfill date to the second and third quarters of the 17th century.

The topmost portion of the landfill deposits consisted of narrow bands and lenses of various soils. of particular note was a stratum of brown silty sand with burned wood and charcoal excavated from the central part of the square and a deposit of brown and gray silty sand in the southern portion of the test cut. The latter deposit is of interest because of the very high density of window glass recovered, including 178 pieces identifiable as crown glass. Approximately 2300 pieces of window glass were recovered from about . 859 cubic feet of soil, a density of 2681 pieces per cubic feet, again reminding us that Evert Duyckinck was a glazier. The lowest fill strata in TC A, in Lot 15 , also contained a high density of window glass, although not as great as in this deposit. It is possible that the landfill was taken from another lot
owned by Duyckinck, on which the wastage from his occupational activities had accumulated.

Other landfill lenses in TC $Q$ consisted of bands of red sand and gray sandy silt in the northern part of the square and a deposit of mottled yellow sandy silt adjacent to the stone wall.

The lowest excavated stratum, which began at a depth of 14/16 inches below the surface of the test cut, consisted of bands of varied color sands. The uppermost portion of this deposit included a substantial number of cobbles and larger rocks. The deposit of tan/brown sand in TC $R$ began at approximately the same elevation. While the deposit in TC $Q$ did not contain the high density of ceramics encountered in the former test cut, it is most likely that the TC Q deposit also represents soil which was present prior to the land filling. The artifact and faunal densities of this deposit are substantially lower than in the overlying deposits. In addition, this is the only deposit of those excavated in TC Q which yielded a greater amount of yellow brick (596) grams) than red brick, with a red/yellow brick ratio of .5. Those deposits which appeared to represent the pre-landfilling river bottom in other test cuts also contained a greater amount of yellow brick than red brick.

Test Cut $Q$ was excavated to a depth of approximately 30 inches below the surface. However, the soil between 30 and 54 inches was sampled using a post-hole digger. Strata of
red/brown silt, gray silty sand, gray gravelly sand, and orange sand were detected.

The intrusive pit or trench in the western portion of the test cut contained a concentration of decayed wood. It is possible that ST 10 , which was located south of TC $Q$ and also contained a layer of wood, sampled a portion of this intrusive trench. Only one non-diagnostic sherd was recovered from the upper portion (above the decayed wood) of this trench in TC Q. Seven dated sherds were recovered from the reddish brown sand below the wood. In addition to five delftware and one 17th century earthenware sherd, this deposit yielded one creamware sherd suggesting that the intrusion occurred sometime after 1762, the initial date of manufacture for this ceramic type.

## CHAPTER NINE

## Documentary Research--Lots 28,29 , and 8

Lots 28, 29, and 8 (the latter is not included in the project area) are within the bounds of two water lots granted to the merchant Samuel Bayard, a French Huguenot immigrant and founder of a powerful early New York family (Archdeacon 1976:42). The first water lot, granted in 1690, gave Bayard the right to fill an area $36^{\prime}$ wide by $95^{\prime}$ long. This area eventually became the site of Lot 8 as well as the northern portions of Lots 28 and 29. The second grant in 1697 gave him the right to an additional $36^{\prime} \mathrm{X} 36^{\prime} / 38^{\prime}$ lot. This area corresponds to the remaining area of Lots 28 and 29 (Liber A p181, p205).

The 1703 tax assessment records mention two houses belonging to and possibly occupied by Samuel Bayard. However, these structures probably fronted Pearl street (Lot 8). Only the rear sections of these houses or associated back houses would fall within Lots 28 and 29. The 1706 tax assessment records clearly list two individuals (Rutger Watson and Widow Es__) on Water street at the site of Lots 29 and 28. Structures, whether back houses or actual residences, on these lots may date as early as 1699 , but the sequence of the assessments on the earlier tax rolls makes it difficult to match names with addresses.

This parcel containing lots 8,28 , and 29 belonged to the

Bayard family as late as 1751 (L34 p274) and throughout this period it housed four separate structures. Stephen Bayard, holder of the 1734 Water Lot Grant opposite this parcel on the south side of Water Street, also owned lots 9*, 27*, 10*, and 26* (Liber B p154). The parcel, including lots 8, 29, 28, belonged to Issac Low and by 1785 it had been confiscated (presumably for Low's loyalty to the British during the revolution) by the Commissioner of Forfeiture for the Southern District ("Appointed in pursuance of...an Act for the Forfeiture and sale of the Estates of persons who have adhered to the Enemies of this State..."). The lots were sold to Issac Moses, an auctioneer (see L46 p528; L143 p164) who also purchased Lot 9* in 1791 and Lot 10* (which had been confiscated for non-payment of debts) in 1792 (L46 p258; L47 p106).

The directories list a series of artisans in Lots 28 and 29 during the late 18th and early 19th centuries. Lot 29 housed a shoemaker in 1790 and again from 1813 to 1833. A coppersmith occupied the lot from 1807 to 1812. Hatters are listed in Lot 28 from 1793 to 1832. The tax assessment records list two structures on Lot 28 between 1806 and 1813. One structure fronting Water Street was occupied by alexander McFarlane, a hatter, and the other, a shed in the rear, housed a cooper, George Conun.

In 1816 Isaac Clason, a merchant, purchased the Lot 8, 29, 28 parcel and in 1822, his heirs subdivided it into three
separate lots which correspond to the present lot lines (L115 p230,p464). Lot 28 remained in the Clason family until 1846 (L485 p23). Lot 29 passed through a series of owners. Thomas Talmadge, a merchant, owned the lot between 1833 and 1863. The structures in both lots were destroyed in the 1835 fire and were rebuilt in 1836.

The 1860 tax assessment records describe two four-story structures on Lots 28 and 29. The building in Lot 28 measured 19'2" x 55', leaving a backyard area of approximately 5'8" across the breadth of the lot. The building in Lot 29 measured $23^{\prime} 4 \frac{\frac{1}{2}^{\prime \prime}}{} \times 60^{\prime}$, with a backyard area of approximately $5^{\prime}$ extending across the breadth of the lot. Both lots have had a minimum of three building episodes prior to 1860. This would include the back houses or the rear sections of residences associated with the original water Lot Grants. These late 17 th/early 18 th century structures were replaced in the 18th century with the buildings making the artisans listed in the city directories. Two new buildings were then erected in 1836 to replace those destroyed by the 1835 fire. These 1836 buildings are probably those described in the 1860 tax assessment records.

## Excavation--Lot 28

Two test cuts were placed in this lot. TC J was located five feet south of the rear wall of the latest building to have stood on the lot and approximately $51 \frac{1}{2}$ feet north of

Water Street. Test Cut M was situated $25 \frac{1}{2}$ feet south of $T C$ $J$, approximately 21 feet north of water street. The location of both squares was determined by our random sampling procedure (see Chapter One). Test Cut J was placed so as to sample the landfill deposited subsequent to the granting of the first set of water lots. Test Cut $M$ was one of two squares placed to sample the landfill deposited on the southernmost portion of the block after the second set of water lot grants.

Excavation began at the level of the wooden basement floor of the most recent building to stand on the lot and revealed the remains of two additional wooden floors. Floor \#2 was 7-10 inches below the latest floor (\#1) and floor \#3 was 4-10 inches below floor \#2. Each of the three floors was supported on round logs four to six inches in diameter, running in an east-west direction. The logs beneath floors \#1 and \#2 were supported on fill between the floors, consisting under floor \#1 mostly of cinders. The fill between floors \#2 and \#3 was a silty sand containing a considerable amount of brick and mortar. The charred remains of three small wooden barrels were recovered from floor \#3 in TC M.

In the northern part of TC J (Figure 87), immediately below floor \#3, we encountered the top of a cut stone wall which projected approximately 32 inches southward into the square. In two locations, roughly 52 inches apart, cut stone blocks were stacked on top of the wall, penetrating through
floors \#2 and \#3. The fill between floors \#1 and \#2 covered the top of these stone blocks.

Excavation beneath floor \#3 in the western portion of TC J revealed a charcoal deposit beneath the burnt floor. In the eastern portion of the test cut, however, the charcoal of the burnt floor \#3 gave way to brown and mottled brown silty sand. This material overlay another cut stone wall, running in a north-south direction, which began at a depth of approximately $31 / 34$ inches. At $28 / 30$ inches a third cut stone wall was encountered in the western part of the test cut running in an east-west direction and continuous with the southern boundary of the test cut. Therefore, the original five by five foot TC J was enlarged in two directions. The square was extended two feet to the west (Figures 88,89 ) in order to permit the excavation of the feature which was defined by the cut stone walls mentioned above and a fourth cut stone wall uncovered in the western extension which bounded the feature on the west side. This north-south wall also began at a depth of $28 / 30$ inches.

Since the original objective of this test cut was to sample the landfill deposits, and since this was made difficult by the presence of the feature, $T C J$ was also extended five feet to the east (Figure 90).

With the exception of the deposit in the feature, a dark brown sandy silt with a high concentration of charcoal, the material beneath floor \#3 in TC $J$ consisted of brown and




FIG 89
TEST CUT J WEST EXTENSION WEST WALL


Figure 87. Test Cut J West Extension: North Wall

1. cinder and ash
2. decomposed wood and brown silt
3. sand and brick between cut stones
4. gray ashy sand with charcoal and mortar and brick inclusions
4a, yellow ashy sand
5. fine white sand with rust stains
6. dark brown silty sand (burned level)
7. reddish brown silty sand between stones
8. dark brown sandy silt with charcoal and abundant cultural material
9. banded rust and tan sand with some sandstone inclusions
10. gray and rust sand
11. red sand with water rolled pebbles
12. decomposing wood and brown silt

Figure 88. Test Cut J West Extension: West Wall

1. cinder and ash
2. decomposed wood and brown silt
3. gray clayey sand
4. dark gray ashy sand with charcoal, mortar, brick, glass, and stone
5. brown mortary silty sand with brick
6. burned silty sand with ceramic and glass
7. brown silty sand between stones
8. banded rust and tan sand with some sandstone inclusions

9 . wood
10. gray and rust sand

Figures 89-90. Test Cut J, East Extension

1. silt with rubble
2. dark brown organic silt
3. cinder and ash
4. dark brown silt
5. light brown and gray sandy silt with brick
6. dark brown and black organic silt
7. brown sandy silt with rocks
8. mottled orange and tan sand
brown/orange mottled silty sand containing rubble, some large rocks, and dense brick debris. Test Cut $M$ also contained a deposit of brown silty sand with a high brick density beneath floor \#3. In common with TC $J$, the top portion of this deposit was described by the excavators as being hard packed. In TC M, the soil at the base of this deposit was described as a yellow or gray mortary sand. This was not the case in TC J. The late 17 th century landfill deposits began immediately below the silty sand stratum in both test cuts. The landfill will be discussed further below.

## The Test cut J Feature

The feature in TC $J$ extended four feet east-west. The deposit within the feature extended beneath the stone wall in the north of TC J. This wall was not the northern boundary of the feature, but was built after the feature. The excavation was not extended north of this wall and we were, therefore, unable to determine the northern extent of the feature.

The TC J "north stone wall" and the three exposed walls of the feature were constructed of cut stone, those of the feature being larger than those of the north wall. All walls were only two courses high. The north wall began at approximately the same elevation as the west and south feature walls, but was only about half as high. The east feature wall began at a lower elevation than the west and south feature walls, and below the bottom of the north wall.

The function of the feature remains uncertain, but it seems likely that it was a privy. The material excavated was probably deposited after the period of use of the privy ended, as indicated by the lack of organic material. The feature contained a dense deposit of artifacts (268.5/cu.ft.), mostly domestic in nature, with a high NA/A ratio of 7.6. The most prevalent artifact type was bottle glass fragments, with a large number of bottle bases and necks, and one whole bottle being recovered. A total of 5135 pieces of bottle glass, of various types, were recovered. The 518 pieces of drinking and table glass included fragments of a glass decanter and a cobalt blue glass bowl. One thousand and thirty nine ceramic sherds were recovered. The deposit contained moderate densities of bone but fairly low shell densities. One hundred and eighty five pieces of vegetal material were recovered, consisting mostly of cherry and peach pits with some plum and hickory. The brick and mortar density in the feature deposit was low. The 738 architectural artifacts consisted mainly of window glass (589 pieces) and pantile fragments (133). Only 13 nails were recovered.

In addition to the table and drinking glass, other artifacts in the household category include 123 fragments of glass food storage vessels, and eight fragments of a bone utensil handle. Artifacts in the clothing and personal artifact category include two bone and seven metal buttons, two fragments of a wooden comb, and a marble. Only 15 smoking
pipe fragments were recovered from the deposit, in contrast with the large numbers of such artifacts recovered from earlier domestic deposits (see the description of the Lot 14 excavations) and the 17 th century landfill.

The data suggest that the deposit consisted of domestic refuse. The presence of the window glass fragments is probably related to the occupation of the of the lot's residents, as discussed below.

This deposit is unique among those excavated on the 7 Hanover Square site because of the large percentage (30.1\% of the recovered sherds) of Oriental Export Porcelain. While precise data on the relative costs of porcelain and earthenware are lacking (Miller 1980), it is generally accepted that imported porcelain was more expensive and implied higher status than earthenwares. The large fraction of this deposit represented by Oriental Export Porcelain suggests that the residents of Lot 28 during the period represented by the feature deposit (or their ancestors) were fairly well-to-do. This suggestion is reinforced by the recovery of a well made cobalt blue glass bowl with a ground pontil from the deposit.

A mean ceramic date of 1781.1 years was calculated based on the 704 datable ceramic sherds recovered from the feature. Further information about the date of deposition was obtained from an analysis of the specific ceramic types present and the cumulative frequency curves. On the one hand, approximately

11\% of the dated ceramics had a final date of manufacture before the mean ceramic date. These include Whieldon-type yellow ware (10 sherds), sgraffito-type buff slipware (eight sherds), plain delftware (five sherds), and early creamware (14 sherds). On the other hand, approximately $4.5 \%$ of the dated sherds had initial dates of manufacture between 1790 (after the mean ceramic date) and 1800. These include Canton, Nanking, and underglaze decorated porcelain (10 sherds), annular decorated pearlware (two sherds), transfer printed pearlware (18 sherds), and underglaze polychrome decorated pearlware (one sherd). The presence of these 31 sherds suggests that the deposit may have, in fact been created closer to the end of the 18th century than indicated by the mean ceramic date or even during the opening years of the 19 th century. Only one sherd, however, had an initial manufacturing date after 1800. Since this sherd was red transfer printed whiteware, not manufactured until after 1830, it is likely that this sherd was intrusive into the feature deposit. The absence of purely 19th century types suggests that deposition ended not long after the turn of the century. A deposition date during the 1790s or early 1800 s accords with the documentary evidence discussed below. The $11 \%$ of the deposit no longer manufactured after 1780 could have been present due to curation by the occupants of the lot.

We also examined the possibility that this deposit accumulated gradually over a period of time rather than
representing a single episode of dumping. For each of the four excavated levels of the deposit, we have calculated the mean ceramic date, the percentage of sherds with a final date of manufacture before 1780 and the percentage of sherds with an initial manufacture date between 1790 and 1800. These data are shown in Table One. They suggest the strong possibility that accumulation of the deposit occurred over a period of time, rather than representing a single episode of trash disposal, and also indicate that deposition may have begun before 1790.

Fifty six bottle glass fragments recovered from the feature deposit were dated, 51 of these to the period 17801810/30. Three fragments were dated to $1750-1870$, and one mold-made fragment to the post 1800 period. One whole bottle, dated to 1740-1790 was recovered from this deposit. These dates are consistant with the ceramic evidence. A glass wine bottle seal with a coat of arms (as yet unidentified) was also recovered.

Of the table glass recovered, two drinking glass fragments were dated to $1760-1770$ and several fragments of a glass flacon were dated to 1749-58. Although these dates are earlier than the ceramic bottle glass dates, it is reasonable to expect that these vessels would have been in use for a substantial period of time after their manufacture and purchase. One of the metal buttons recovered is similar to Hume's (1978:90-91) type \#9, which he dates to 1726-76.

## tABLE ONE

Privy Deposit Ceramic Data - By Level

| Stratum | Vb | Vc | Vd | Ve |
| :---: | :---: | :---: | :---: | :---: |
| N (Dated Sherds) | 137 | 131 | 73 | 166 |
| Mean Ceramic Date | 1790.6 | 1788.5 | 1780.5 | 1761.3 |
| Final Date Before 1780 |  |  |  |  |
| N |  |  |  |  |
| \% |  | 5.2 | 0.0 | 12.8 |
| Initial Date 1790-1800 |  |  |  |  |
| N | 17 | 5 | 1 |  |
| \% | 12.4 | 3.8 | 1.3 | 0.0 |

Profile drawings show a two to five inch band of tan and rust colored sand between the base of the feature deposit and the underlying landfill. This stratum yielded three sherds of white salt glazed stoneware. Since this ceramic type was not manufactured until 1720, the deposit was probably not part of the landfill, and could be seen as being associated with the construction of the feature. The presence of a number of sandstone fragments in this deposit is consistent with this intepretation. This stratum also yielded a sherd of mottled glaze "midlands" type yelloware manufactured between 1660 and 1750. Although these are scanty data they suggest the possibility that the feature (privy) was constructed during the early-mid 18 th century and used until the late 18th-early 19th century. The excavated material from the feature would have been deposited after the period of use and after the privy deposits had been removed.

Lot 28 Construction Sequence
The reconstructable building sequence on Lot 28 begins with the material below floor \#3. The relatively high brick and mortar density in this deposit suggests that it may have been deposited after the demolition of a structure. Sixtytwo datable sherds were recovered from the material immediately below floor \#3. The mean ceramic date calculated for these sherds is 1785.8. However, the presence of nine delft, majolica and Rhenish stoneware sherds, perhaps redeposited from the earlier landfill, makes this date earlier
than would otherwise be the case. The mean ceramic date without these nine sherds is 1800.2. The deposit includes two whiteware sherds. These data indicate that the structure associated with this debris may have been standing on Lot 28 during the same period that the material in the $T C J$ feature was deposited. The rear wall of this structure would have been south of the location of TC $J$ and the feature, probably a privy, was located in the back yard. Subsequently, a larger structure (referred to below as the "second building") was constructed on the lot. This involved the construction of the stone wall uncovered in the north of TC J. Construction of this wall and the larger structure involved at least the partial excavation of the backyard area of the earlier structure. The east wall of the feature was apparently disturbed to a somewhat deeper depth than the west and south walls. If the feature in TC J were a privy it originally must have been much deeper than the two stone courses excavated. During the construction of the "second building," of which floor \#3 was the basement floor, debris from the earlier structure was apparently spread over the lot. However, this deposit was not present immediately over the feature. This may be related to the process of demolition of the feature. Perhaps the upper courses of feature walls were removed after the demolition of the rest of the structure. Floor \#3 was subsequently built over this debris.

The northern stone wall in $T C$ was apparently not the
rear wall of the structure associated with floor \#3. Its construction, two shallow courses topped with stone blocks, suggests that the wall was built as a base for internal supporting columns within the building. The earliest available maps of the block, dating to 1857 (William Perris), indicate that there was, in fact, a building extension which began at the approximate location of this internal wall.

It is possible that the $T C J$ north stone wall was originally the rear wall of the second building and that a subsequent building episode involved the destruction of the upper portion of the wall followed by construction of the building supports. However, there is no stratigraphic indication of this. Furthermore, wooden floor \#3 appears to overlie the wall and to abut the stone blocks on which the supporting columns apparently rested. It is thus likely that the second building was constructed with a main section and a rear extension.

The form of the building was apparently the same when floor \#2 was constructed, with the stone base for the supporting columns penetrating through the wooden basement floor. The presence of large quantities of brick and mortar between floors \#2 and \#3 suggests that some major reconstruction of the building occurred. The 25 ceramic sherds excavated from the material between these two floors yielded a mean ceramic date of 1841.7. Seventeen of the sherds were 19th century types, whiteware and Albany slipped
stoneware. The presence of two sherds of red transfer printed whiteware indicates a probable deposition of this material (and thus a construction of floor \#2) no earlier than approximately 1830.

At a later date, the internal supporting columns of the building were apparently removed, and floor \#1 was constructed. This suggests that another major reconstruction took place and that the building at this time (Building \#3) was a single structure rather than a structure with a rear extension. This reconstruction would have taken place subsequent to the preparation of the 1857 map cited above.

Further inferences about the construction sequence can be drawn from the documentary research. In 1790, Lot 28 was occupied by Anthony Ogilvy, listed as a painter and glazier and by Daniel steddifor, a hairdresser. It should be recalled that the TC J feature contained 589 pieces of window glass, but few nails and little brick or mortar. If Mr. Ogilvy lived and worked on this lot we would expect to find both the refuse of daily life and refuse related to his occupation: the window glass. Thus, at least part of the refuse excavated from the feature may have been deposited by Ogilvy.

Between 1793 and 1802; Stephen Smith, a hatter, occupied the lot and some of the refuse may have accumulated during his tenure. Between 1803 and 1832 the lot was occupied by Alexander McFarlane, also a hatter. However, between 18061813 George Conklin, a cooper, was noted as occupying a shed
in the rear of the building. If this "shed" were in fact the building extension discussed above, the reconstruction of the building (construction of building \#2) and the destruction of the feature could have taken place in the first decade of the 19th century. These data suggest that the feature material was deposited c. 1790-1806, which is in accord with the artifactual evidence previously discussed.

In 1835, a fire destroyed the portion of Water street in which Lot 28 is located. Construction of floor \#2 probably occurred after this fire, This also fits the ceramic evidence. Furthermore, floor \#3 was definitely burned, while floor \#2 and its joists were not. Thus, floor \#2 probably is associated with reconstruction of the building after the 1835 fire while floor \#l was built following the removal of the extension and construction of building \#3.

The following summarizes the above sequence:
c. 1790-1805 Building \#1 standing; feature deposit accumulates in privy behind structure
c. 1805 Building \#2 constructed with extension; floor \#3 built
c. 1835 Building \#2 reconstructed following 1835 fire; floor \#2 built

1857+ Building \#3 and floor \#1 constructed
While documentary evidence indicates the presence of earlier structures on this lot, deposits associated with these structures were not encountered during the excavations.

## Landfill Deposits

The landfill deposits in both $T C J$ and $T C$ M underlie the
rubble from the first construction episode discussed above. These deposits extended to a depth of approximately 90 inches below the test cut datum and were underlain by the gray river bottom silt. This silt was excavated to approximately 99 inches in $T C J$ and was underlain by the red sandy subsoil. The gray silt could only be excavated to a depth of approximately 83 inches in TC M (Figure 91). At this depth excavation had reached the water table which caused a collapse of the lower portion of the test cut walls.

The landfill in TC J was described by the excavators as a mottled brown, orange and tan sand, with a lens of dark brown and black organic silt at approximately 53-60 inches. The TC M fill was also a sandy fill, but was described as consisting of bands of orange/red, mottled red, dark red and tan, red and gold sand sloping downward from north to south. A lens of green and black mottled silt appeared in the north portion of the test cut, but this occurred some 20 inches higher than the lens of "organic silt" in TC J. The difference between the color of the sand noted in the two test cuts may be due to differences in the perceptions of the excavators. Photographs of TC M suggest that the banding in the fill deposits is not as pronounced as suggested by the profiles, while photographs of TC $J$ show more differences in the color of the sandy fill than suggested by the profiles.

Densities of artifacts and faunal materials recovered from the landfill deposits in TC M were only $1 / 3$ to $1 / 4$ of the


FIG 91
TEST CUT M
WEST WALL


Figure 91. Test Cut M

1. red sand with bricks and rubble
2. black, green, and yellow cinder and ash
3. organic layer (decayed wood)
4. yellow-tan mortar with rubble

4a. pockets of gray and brown
5. burned wood and charcoal

5a. burned sand
6. brown sand with charcoal

6a. brown sand with denser concentrations of charcoal
7. brown coarse sand with brick, mortar, and wood
8. brown sand with yellow mortar

9 , red coarse sand mottled with rust
9a. red coarse sand
10. thin bands of tan and black sand
11. green and black mottled silt
12. dark red fine sand mottled with black and rust 12a. red fine sand mottled with black and rust
13. tan sand bordered by wood
14. dark red fine sand with rust stains
densities in TC J in all categories except for architectural artifacts, mortar and marine shell. However, the landfill deposits from both test cuts have much lower densities of all categories of cultural materials than the landfill samples taken from the test cuts on the Pearl street side of the site.

The ceramic samples from the TC M and J landfill deposits are too small for mean ceramic date calculations to be significant. However, no ceramic types were present which could differentiate the dates of filling subsequent to the second set of water lot grants from those subsequent to the first set as indicated by the material recovered from the northern portion of the site.

It should be noted that the description of the landfill stratigraphy in these test cuts is in keeping with the stratigraphy of the landfill in the southern portion of the site as indicated by BT 6 (see pp. 335ff).

Excavation--Lot 29
Lots 28 and 29 were considered to represent the same landfilling episode since they were both part of a single water lot grant to Samuel Bayard. As it turned out, our random sampling strategy for the late 17 th century landfill did not result in the placement of test cuts in Lot 29.

Backhoe Trench 3 was placed in Lot 29 in order to examine the landfilling stratigraphy, determine whether any landfill retaining structures were present, and detect the existence of any post-landfilling deposits and features. The backhoe
trench was located approximately 10 feet east of the western boundary of the lot in order to avoid any disturbance caused by the construction of the large 20 th century building which stands on the lot immediately to the west. The backhoe trench extended approximately 52 feet south from the Lot 8/29 boundary and was approximately 5.5 feet wide. A 5.5 foot wide westward extension to the trench connected its main portion to the wall of the 20 th century building mentioned above.

Backhoe Trench 3 indicated that the landfill deposits in this lot consisted of red sand similar to the landfill deposits encountered in TC J and $M$ in Lot 28. No landfill retaining structures, foundation walls or other features were encountered.

## 7 HANOVER SQUARE--SUMMARY OF LANDFILLING

## Backhoe Trench 6 and Extension <br> (Faure q2)

Backhoe Trench 6 was placed in Lots 9* and 27* during the mitigation phase of the project. The trench was initially located south of TC I and subsequently extended northward, passing through TC I and terminating at the foundation wall of the most recent building to stand on the lot. This wall was located beneath the Pearl street sidewalk. The trench initially extended 50 feet south of the Pearl street baseline. During the final phase of the project, which involved the excavation of Lots $26 *$ and $27 *$, the trench was extended to a point 100 feet south of the baseline. This portion of the trench was excavated with a front end loader. Profiles were drawn of each 10 foot section of the eastern wall of the trench. Due to logistical considerations, the southern portion of the trench was offset several feet to the west of the northern section.

Analysis of the northernmost portion of the trench suggests that the layer of red sand at the base of the stratigraphic profile represents a portion of the pre-filling river bottom deposits. The stratum indicated on the profile as brown/red sand which is present between 0 and $6 \frac{1}{2}$ feet south of the Pearl street baseline is probably also part of the original river bottom material. Thus, the pre-filling land surface sloped downward to the south. This land surface may have been tidally inundated in this area, as discussed below.

At the Pearl Street baseline this pre-filling stratum began at 10.07 feet below the level of the Pearl street sidewalk as it existed before construction of the new 7 Hanover square building. This stratum dropped to 12.21 feet below the sidewalk level at $6 \frac{1}{2}$ feet south of the baseline, at which point the brown/red sand stratum ended. The underlying red sand stratum sloped downward more gradually south of this point, levelling out at a depth of 14.73 feet below the sidewalk elevation at a distance of 25 feet south of the baseline. It is likely that the material above the red sand represents the 17 th century landfill deposits.

In the area approximately 10 feet south of the baseline, the BT 6 profile shows the deposits of red sand and brown sand, both containing cobbles, which were mentioned in the description of TC I. Just south of the location of TC I, the trench profile shows what appears to be a wooden post set upright in the red sand and the underlying grayer sand. As shown in the profile, the top of the post is surrounded by the stratum of brown sand with cobbles rather than being driven through it. This suggests that the latter deposit is, in fact, part of the landfill, and that the post had been driven into the underlying red sand prior to the landfilling. Above this post was a pocket of "humus" which could represent the original top portion of the post that had rotted.

At the location of TC I, the soil immediately above the red sand consisted of the brown sand with cobbles. After a
point approximately 20 feet south of the Pearl Street baseline, the soil above the red sand is described as coarse orange and gray sand with shells. Field notes and photographs indicate that the oyster shells in this deposit are all oriented with the concave side face downward. One interpretation, therefore, is that these shells were deliberately placed in this position.

From 12-27 feet south of the baseline, the sand with cobbles or shell was overlain by a thin stratum of orange and white banded sand. Immediately above this sand where it was present, and above the coarser sand in other areas, a thin dark layer of what appeared to be decayed wood extended from approximately 12-25 feet south of the baseline. If the brown sand with cobbles and the orange and gray sand with shells were natural river bottom deposits, rather than landfill, this wood could be interpreted as planking placed at low tide to facilitate the filling process. In this case, the artifacts noted in the underlying deposits would had to have been deposited on the river bottom and have worked their way downward through the loose sand. The other possibility is that the planking was laid down during the filling process after some landfill (the brown sand with cobbles and the orange and gray sand with shells) had already been deposited. From 0-40 feet south of the Pearl street baseline, there does not appear to have been any river bottom silting, and it is likely that the shoreline environment in this area
consisted of tidally inundated beach. A lens of gray black silt did overlie the "decayed wood" stratum from approximately 11-31 feet south of the baseline, but it is likely that this material is part of the landfill, possibly material dredged from the river bottom at another location and deposited at this site as landfill.

At a distance of 40 feet south of the Pearl Street baseline a thin stratum of gray black silt overlay gray sand at the base of the exposed profile. This material probably represents river bottom silt. If the profile drawings are accurate, the gray sand overlies the coarse orange and gray sand with shell, discussed above, between approximately 30 and 35 feet from the baseline. If the gray silt represents the naturally deposited river bottom silt, therefore, the orange and gray sand with shell, as well as the associated brown sand with cobbles further to the north would have to represent the original river bottom deposits. Unfortunately, the stratigraphy at the extreme northernmost limit of the gray silt stratum is obscured by what appears to have been the remains of a stone wall, perhaps a portion of a foundation wall. The post described below plus the hypothesized upper portion would have extended to the top of the brown sand/cobble stratum.

The gray silt stratum is present at the base of the trench profile from the 40 foot mark to the end of the trench at 100 feet south of the Pearl Street baseline. The presence
of the water table prevented excavation to greater depths. The gray silt stratum began approximately 12.4 feet beneath the Pearl Street sidewalk and 13.4 feet below the datum plane discussed in the following section. The surface of the stratum sloped downward about one foot between the 40 and 55 foot mark and then remained fairly level.

It is interesting to note the variations in the composition of the landfill as indicated in the BT 6 profiles. North of the possible foundation stones (approximately 40 feet south of the Pearl street baseline) noted above, the major landfill deposit consisted of a brownish green silt. An overlying band of gray silt containing mortar and brick between 15 and 29 feet south of the baseline may have been associated with a construction episode on Lot $9 *$. South of the disturbed foundation stones, the landfill consisted primarily of deposits of mottled brown or orange/brown sand with downward sloping bands of gray clay and silt in some areas. The downward sloping bands indicate that the land was filled progressively outward, with the fill being consistently deposited from the built-up surface of the land, whereas the fill to the north appears to have been built up vertically in layers.

Comparison with the excavations conducted in the other lots suggests that the stone wall at 40 feet probably represents the remains of a foundation wall of an early structure built on Lot 9*. Like most of the early foundation
walls on the site, this wall would have been constructed prior to the deposition of the landfill, and would have served to support the landfill deposited to the north. The fact that the base of the wall is at about the same level as the gray/brown sand beneath the level of the layer of decayed wood in the northern portion of the lot strengthens the interpretation of this material as a pre-landfill river bottom deposit.

After the land north of the wall was filled-in, the land south of the wall was filled using different sources for the landfill and a different land-filling strategy. The landfill south of the wall could have been dredged from the river bottom, with the bands of silt representing the river bottom silts and the more abundant sand deriving from the river bottom sand underlying the silt.

## Pre-Landfilling River Bottom Stratigraphy

The analysis of the stratigraphy of BT 6 and the various test cuts excavated allows us to make some inferences about the pre-landfilling river bottom deposits.

Although the bottom of the East River was apparently covered by a layer of gray silt, this deposit did not extend to the Pearl street shoreline. The silt deposit as seen in BT 6 apparently ended approximately 40 feet south of the Pearl Street shoreline. This stratum was present in deeply excavated test cuts excavated further from the shoreline (i.e. TC J, M, L, F, D, and U). The most northerly extent of this
stratum may represent the location of the pre-landfilling low water mark. It should be noted, however, that the 17th century water lot grants suggest that the low water mark was located approximately 90 feet south of Pearl street. The area north of the 90 foot mark in which the silt deposit was present may have been under water during a major portion of the tidal cycle and may not have been subjected to currents strong enough to prevent silting.

The top of the silt stratum was located between 9.8 and 11.5 feet below the site datum plane. This plane passes through a point on the sidewalk on the south side of Water Street at the base of the fire hydrant marked "\#20," located in front of the Chase Manhattan Bank building. In TC $\mathrm{F}, \mathrm{N}, \mathrm{J}$, and $D$, the excavations penetrated the silt to the underlying sand stratum.

The portion of BT 6 north of the 40 foot mark and all of the test cuts located north of the 35 foot mark which penetrated the landfill deposits (Test Cuts $I, H, V, A H, Z, Y, O$ extension, and 0 ) did not encounter the silt stratum. In this area, sterile sand, usually described as having a reddish color, immediately underlay the landfill. This stratum began between 9.4 and 11.4 feet below the datum plane. However, it was encountered at a slightly higher elevation, 7.3 to 8.3 feet below the datum plane, in the northernmost part of BT 6 . It is possible that this portion of the 7 Hanover Square site contained a "beach-like" environment prior to the landfilling
which was under water only during a portion of the tidal cycle. With the possible exception of TC K (35 feet south of the Pearl Street baseline), all of the test cuts north of the rear walls of the late 17 th century structural foundations uncovered on the northern portion of the site were in this zone. Test Cut K was not excavated to the depth necessary to reveal the existence of the silt stratum.

In the above discussion of $B T$, we considered whether the deposit of looser sandy soil with rocks and shell which overlay the red sand in the northern portion of the trench was a pre-landfill natural deposit or part of the landfill. In nine of the test cuts north of the point where the river bottom silt deposits began (Test Cuts $\mathrm{I}, \mathrm{H}, \mathrm{V}, \mathrm{AH}, \mathrm{Z}, \mathrm{O}$ extension, $A, Q$, and $R$ ), the excavators noted the presence of a deposit of coarse sand above the red sand river bottom deposit. In most cases this coarse sand was noted as containing concentrations of rocks or shell. In some cases, rather dense deposits of artifacts were also noted. The fact that these deposits were encountered immediately above the sterile red sand in a number of different lots filled by different individuals suggests a "natural" mode of deposition. This is consistent with the inference that the area immediately south of Pearl Street contained a "beach-like" environment, perhaps covered by water only at high tide and subject to wave action. This shoreline area may have been used for the deposition of refuse before the landfilling took place, accounting for the
presence of artifacts in the coarse brown sand. The action of the water could have led to the distribution of the artifacts throughout the deposit. The elevations of these deposits suggest that the pre-landfill "beach" surface was somewhat higher on the western portion of the site, with a drop-off of some three to four feet of the Pearl street baseline. In BT 6 the elevation of the brown sand stratum north of this drop-off was 5.3-6.3 feet. In the eastern portion of the site, the beach area was more level. The elevation of the brown sand stratum in the area four to five feet south of the Pearl Street baseline was 8.7 feet below the datum plane in TC AH (Lot 14), some two to three feet deeper than in BT 6 (Lot 9*). Thus, at high tide, there would have been a greater depth of water immediately adjoining the shoreline in the eastern portion of the site than in the western portion.
are a number of other ways in which artifacts from landfill may be used for scientific research (for example, they seem well suited to issues related to trade practices, the rate of adoption of innovations, and the development of local technology). We hope that research uses for landfill data such as these will continue to be investigated.

The second type of research for which landfill may be used concerns site formation processes and taphonomic questions, and addresses basic behavioral issues. For example, was the fill deposited by the entire community (since there was no formal or effective garbage disposal at the time), or was it formed mostly by the individuals who had purchased each lot? There is both documentary and archaeological evidence that the latter was the case in at least some instances. The Livingston papers mentioned above (p.123) refer to Livingston's contract with Teunis DeKay to fill his lot, while the Duyckincks' water lot (Lot 15) contained many pieces of broken glass, consonant with their having created their own fill and their occupation as glaziers. At 64 Pearl Street we hypothesized that a shoemaker, Conraet Ten Eyck, had used his water lot for refuse disposal since there were many pieces of leather in the fill, including pattern remnants (Picknan and Rothschild 1981).

Taphonomic information can also be derived from the examination of stratigraphic sequences in a number of deposits or test cuts. We observed "basket-loading" in some profiles, suggesting the same practice used by prehistoric mound-builders. In this report, we have been able to interpret the sequence of
fill, the definition of the river bottom, and the nature of the original shoreline (probably a beach type of environment with some marshy areas, see Test Cut D, Chapter Five). In discussing the density of artifacts as it varied among fill strata, we also distinguished (above) between the deposition of fill strata with little time elapsed between episodes, and other situations in which there had been some interval (Chapter Two, TC I, TC N; Chapter Three, TC H; Chapter Six, TC U). Based on the presence and absence of certain artifacts, we have interpreted the use of dredge soil and re-deposited material as fill, and have been able to differentiate the river-bottom from the overlying fill (Chapter Four, TC F; Chapter Two, TC I). Thus we have been able to suggest likely answers to questions of historical interest, such as where people in the early comunity got all the material needed to create blocks and blocks of new land, and how the fill was held in place.

The 7 Hanover Square Block project taught us that landfill excavation requires different excavation strategies and interpretive techniques than on-shore excavation. Plans must allow for adequate time to collect and examine the landfill. "Telephone booth" excavations are inappropriate to gather either a large artifact sample or to deal with taphonomic questions. They are also more dangerous to excavate than larger areas. Trenches defining a long profile, or test cuts laid out in a checkerboard are effective, although difficult to keep water-free in deep fill deposits. Other differences between landfill and original land projects appear in artifact analysis. The fact that

## Afterword

It is almost ten years since the 7 Hanover Square Block excavation was begun. During this time a number of us have thought about the archaeological importance of landfill. With the wisdom derived from hindsight we would like to discuss landfill as an archaeological resource, with respect to its research potential and to the strategy needed in the excavation of these sites. Beginning with the latter, it is clear that the excavation of landfill is more complex than is that of original land surfaces. Not only are deposits deeper, but the technology of deep excavation, water removal, shoring, and their concomitant requirements create methodological complexities.

In spite of the fact that there is a longer time needed to complete excavations in these situations, we feel strongly that landfill is a valuable archaeological resource. This has been demonstrated in excavations that followed those at Hanover Square, namely at the Telco Block, 175 Water Street, Barclay Bank, the American Express Site, and the Assay Site.

In the excavation of landfill we had two goals: the recovery of a large sample of the fill, and the understanding of the mechanics of making land in the seventeenth century. In order to achieve the latter, we exposed a relatively large excavation area. This may be achieved by opening a number of small units, or it may be done separately, with heavy machinery, once hand excavation in the area is complete. We used both procedures;" with
a combination of test cuts and long trenches giving us several long profile views of the site.

We encountered two types of fill-retaining structures close to shore. One only a small section of which was exposed in Lot 14, consisted of boards laid horizontally in a sort of bulkhead, reinforced by small vertically placed logs behind them (pp. 265ff). A second consisted of the many stone foundation walls which, since they were built on the river bottom, served dual purposes of retaining fill and supporting buildings. We also found a large partial structure (and some large unattached logs) on one of our last field days when a machine uncovered a log construction perpendicular to shore in Lot 15 . It may have been similar to the cribbing seen later at sites such as the Assay Site, and may have served as a wharf. Since this type of landfill-retaining structure had not yet been seen at other sites, we had not anticipated its existence and unfortunately we lacked the time to explore this structure or to record it.

Many archaeologists are interested in the actual landmaking process. In addition, there are two types of research that can be based on landfill. One focuses on the material found in the fill. The second considers how to identify the source of the fill. In the first reseach type, fill is treated like a large midden, the deposition of which in the case of the Hanover Square Block, can be dated to a ten-year period, from 1687 to 1697. The value of an early, tightly dated assemblage that may not be linked to specific individuals or households is exemplified by two major research projects that use the large sample of fill
recovered during the excavation of the Hanover Square Block. The faunal material from the fill was analyzed as part of a grant funded by the National Science Foundation (BNS 83-04132) examining early New York subsistence and adaptation (Balkwill and Cumbaa 1988; Rothschild 1990). In brief, we can see that seventeenth-century residents of New Amsterdam-New York were eating a very diverse diet in which beef, pork, and fish (sheepshead in particular) dominated. Beef was almost twice as common as other domestic mamals. Among the fish, none were fresh or deep water species; all were from inshore and estuarine environments. Domestic fowl (especially chicken) and wild game were important while deer remains were scarce. Perhaps the single most striking result of this analysis is the diversity of habitats from which food remains were recovered, showing the expenditure of a fair amount of energy in their acquisition, and the important role played by individuals in providing food for their households. The faunal material is also being used as part of a dissertation by Meta F. Janowitz on Dutch foodways in the New World, being completed at the Graduate Center of the City University of New York.

A second important artifact type recovered from the fill is a large sample of Dutch ceramics, particularly from Bergen op zoom. These are being analyzed by Janowitz for her dissertation, and have provided material for a trace element analysis (Gilbert and Janowitz 1990), as part of our attempt to $\sqrt{ }$ ? Bibiog. discern locally produced wares from imported wares in early New Amsterdam/New York (Janowitz, Morgan, and Rothschild 1984). There
much landfill material is re-deposited means, for example, that we cannot rely on Mean Ceramic Dates or Binford pipe stem dates in the same way we could if the material were recovered from a primary deposit. We should treat fill as a sealed deposit in which the deposition antedates the final year of filling, allowing Terminus Ante Quell dating.

Other New York City sites have produced some important landfill analyses. Paul Huey, Wendy Harris Japan, and Joan Geismar have all researched the making of land. Huey discussed New York, and old slip in particular, with reference to the European antecedents relied upon as models of wharf construction technology (1984). Sampan wrote of the Telco Block in the context of the creation of the landscape by the merchant elite who use the waterfront to generate a profit (1985). Geismar interpreted differences between relatively "dirty" early fill, and later "clean" fill in terms of a growing concern for sanitary living conditions in the city following the Yellow Fever epidemics of the late eighteenth century (1987). These are just a few of the many questions the answers to which will come from the detailed, scientific examination of archaeological landfill, and which will enhance our perspective on life in this and other cities.

Nan A. Rothschild
Arnold Pickman

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Appendix c - RedSand Andysis
Appendix D - Ceramics
AppendiX E - Ceramic Shop Deposit


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## APPENDIX C

## ANALYSIS OF 'RED SAND' LAYER AT HANOVER SQUARE ARCHEOLOGICAL SITE

Steven Selwyn, Ph.D.
REPORT

## Objective:

Methodology:

Findings:

Conclusion:

To determine the nature of the stratum in question to the end of determining if the layer was of 'natural' origin or comprised of fill material.

The stratigraphy of the site was observed in situ (in several test trenches) and the red sand layer sampled. Two large boulders lying conformably in the stratum were also sampled.

The sand was subjected to visual microscopic examination, at 120 x , after drying at $105 \% \mathrm{~F}$ and being passed through a magnetic separator.

The rock samples were crushed and microscopically examined at 60x.

The sand is primarily composed of angular to subangular quartz grains with surficial iron stains. Small amounts of biotite mica and magnetite are present. The size of particles is in the 1.5-1.0 0 (500 $\mu$ ) range.

The rock sample is a dark, coarse-grained gabbro. It is very similar to the rocks found on the western side of the Hudson River in the formation known as the 'Palisades Sill'.

The stratum is 'natural' rather than fill. The sand came from the northwest of the site and shows indications of being glacial outwash till from the Newark Triassic 'red-bed' series. The sand was deposited underwater by a stream which trans-ported it only a relatively short distance. The glacial period was not the most recent "Ice-age" ice sheet (of $10,000 \mathrm{yr}$. BP) but rather the result of a 40,000 yr. BP glaciation. The more recent glacier came from the north and northeast and deposits a yellow colored sand as outwash.

The sand layer does not comprise 'beach' horizon but rather is the result of fluvial (river or stream) deposition.

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THE CEFRAMIC EODING SYSTEM
by Meta F. Janowitz

Ceramic analysis in general is designed to enable archagologists to date specific contexts, identify related stratas ands uitimatelys address
 эacio-economic status of the peapie who were responsible for the formation af archaeqlegical cieposits. The first ster in this analysis is, raturally, the reeation of a typolggy which to be used to date tha sherds. The following is the result of gur own and others researeh combinag with the typolpgy geveloped by gtaniey South in consultation witt. higet hume (Sguth ig77). it is a worsing fypology and dates for particular types. Identification of more mamed types will be added as more research in beramiz history is accumulated. [whenever possible, these changes have benn noted although they could not be incorporated into the quantitative anaiysis used herein, 1

The dates given by South were used for most leth-century and some lete 17 th-century wares. For most 17 th century wares, especially Dutch ones, types were assigned dates based on the advice of Paul Huey State Office of Historic Preservation, Albany, N.Y.), Charlotte Wilcoxen (Albany Historical Museum)g and Jan Eaart (Amsterdam Historische Museum), and on our own readings. Information on late $18 t h-\sigma e n t u r y$ and 19 th-century wares was given by George Milier (Colonial Wilifamsburg), Jed Levin (University of Fennsylvania) and Sherene Eaugher (Landmarks Freservation Commission).

The help of all these individuals was inva? uable, but we alone are responsible for any errors of interpretation.

The emphasis in this project has been on developing a reliable dating tool for New York City ceramic assemblages from the early 17 th to the late 1 fth-century. Such a typological tool has not previously been developed for this area. Thé Dutch presence and influence in New York: makes typologies formulatec for use in New England or Virginia unsuitable. Even after the English take-over of the colony of New Netherland in i664, and in spite of the various, restrictive trade acts passed by Farliament, trade continued with the Netherlands at least until the 1690s (fitchie 1976). In addition, locally-made wares show Dutch
 The first; and most important, goal of our typology is; thus, dating. A secondary goal is simple description and enumeration of types and quantities of ceramics. Finally, we tried to isalate types of ceramics not adequately described in the literature of historic archaeology and to gather information about these wares from the works of ceramic historians.

Since our typology evolved during the tourse of cataloging the artifacts, and since the stedt fiys and Hanover Square projects represented the first $\underline{l}$ arge whasvatigns in New York City The siter ᄃ曰niains idigsyncracies which melee them rather site specific and nct entirejy consistente The giggest problem thet werad was tryigg to reconcile gur cesite ta give definite beginaing and end dates with aur fear of oversimpitying or mispppresenting the facts of ceramig tistary. We are not, therefores precenting it as finished product but as a rlas三ificatory saneme that was useftl and will sontinue to be refined.

2 standardized forms. The information was then transferred to a computer, which greatly facilitated the location of farticular types and caiculation of mean ceramic dates. A disadvantage of the computer system was that vessel form was not included in the computerized information. However, whenever it could be determined, it was noted on the original handtabulated sheets. As Eeaudry et al (1983) have pointed out, vessel forms must be included before meaningful comparisons can be made between assembiages.

## 

In the fallowing section, we describe only those wares not described, or only partially described, by Noel Hume (1969). Farticular attention is paid to easly red and buff earthenwares, delftwares, and oriental porcelains. Some undated and purely descriptive types are inciuded on the code list: for example \#7 (red-bodied black glaze). These are intended to be general categories for sherds which could not be more specifically identifed and dated. Whenever possible, definite names were given - for example, Euckley Ware, Jackfield Ware - but when it was not possible to identify sherds with named types, descriptive names were Lised, i.e. "red bodied", "green/ginger glazed" etc. .

A full list of the ceramic codes is in Appendir 4.

The codes for red, salmon and buff-bodied earthenwares consist of undated descriptive types, named and dated types from South and Hume, and a group of types which are collectively called "17th-century" wares.

## Descrixative__Ungated_Types

These codes are descriptive of glaze and paste color. For the red-bodied earthenwares they are the following: \#1 (Unglazed); \#2 (ClearGlazed); \#5 (Erown-Glazed); \#7 (Black-Glazed); and \#10 (Elack-Glaze on a Bright-Red Eady). Code \#14 (Iberian Storage Jars) does not follow South's date range of $1745-1780$ for this type. Based upon the contexts from which sherds of this type were excavated in New York City, South's time range is too narrow.

Undated salmon-bodied earthenwares include \#20 (Unglazed) and \#23 (Green-Glazed). Euff White-bodied undated types are \#30 (Linglazed) and \#3 (Green-Glazed).

## 

Our \#4 is South's \#5i (Astbury, 1725-1750), our \#8 is South's \#47 (Buckley Ware, 1720-1775), and \#15 is a combination of South's \#35 and 42 (Agate Wares, 1740-1B10). These categories were derived from South (1972).

The following are red-bodied earthenwares: \#s (Clear-Giaze; 17th-Century Rim Frafile), \#6 (Erown-Glaze, 17 th-Century Rim Profile), \#1i (Green/Ginger Glaze), \#12 (Green-Glaze), and \#17 (Clear-Glaze with Speckles).

Salmon-bodied earthenwares include: \#21 (Clear-Glaze) and \#Z2 (Mustard Glaze). BufffWhite bodied types are \#Si (Yellow-Giaze) and \#S? (Yellow and Green-Glaze).

These types were based upon similarities noted by paul Huey in November 1979 between earthenwares found at the Stadt Huys Black and his excavations at Fort Mrange in floany. These degcribe paste and glaze, although \#S and \#s also note a 17 th-century rim profile. The end date of 1700 is provisional and should probably be advanced to $1720 / 5$ since examples of many of these types mere found above the fill in lats 13 and 14 at 7 Hanover Square. None were found in the well (Feature 10 or Test Cut CD) at ihe Stadt Huys Elock which contained white salt-glazed stonewares and Engiish buffoiodied slipwares, and which dates to the first quarter of tine 1 eth century.

The red-badied types in this group are at least in part locally made. There was a potter in New Amsterdan at least as early as $165 \mathrm{~g}_{\mathrm{G}}$ and Ferhaps Earlier (ketchum $1970 \pm 20\rangle=$ Five garthenware botties found in the basement of the Lovelace Tavern are almost gertainly lacally made: their shapes are bulbaus, まnd their capacity ranges from 3 3/4 cups to $41 / 4$ cups. Body pastes appear to be the same with some color differences dule to firing, but they have five differently calored giazes (Dark-Grean, Green/Ginger, Clear-Giaze, and both a Light and Dark-Browns. One of the bottles has kiln damage on the bottom which prevents it from standing steadily.

The "17th-century rim" profile is characteristically Dutch (Janowitz, Morgan and Fothschild 1986). It is frequently; but not exclusively, found on a distinctive body type which has been identified by Jan Baart as coming from the town of Bergen-op-Zoom in the Netherlands. Eergen-Gp-Zoom redwares have a very sandy, red-orange body which is so soft that it can rub off on the hands. It is used for large cooking and storage vessels. A group of fragmentary Eergen-op-Zoom vessels was found beneath the fill in TC $F$ at the 7 Hanover Square site (see Appendi\% M).

Other Dutch characteristics are the "ear" and "celery-shaped" handles. Ear handles are usually found on pipkins $\{s m a l l$, deeps Earthenware cooking pots), storage jars, and, occasionally, on dishes. Celery-shaped handles are found generally on earthenware "skillets" (flat cooking vessels): (See Janowitz, Morgan and Fothschild (igRt) for 2 more detailed discussion of Dutch and Dutch-tradition earthenwares.)

The presence of these hanale forms is noted on the original hand-written tabulation shoets.

It was not possible to reconstruct any of the salmon-bodied vessels so we have no specific information about forms. Mustard and clear glazed sherds were frequently found in the same gontexts as the "17th century" group of redwares, but were not as common as the redwares.

Euff/white bodied vessels include pipkins, storage jars and stillets. Hast vessels with only yellow-glaze are completely glazed on the interior and partially glazed on the exterior. There is sometimes a thin pink slip over the body. Yellow and green-glazed vessels have yellow on the exterior and green on the interior. Identification of the place of manufacture of these vessels is problematical. Buff/white
bodied vessels with yellow and pale-green glazes were made in England in the 17th-century, but many of our examples have dutch ear and celery handles rather than the typically Engiish rod or tubular handles, (Noel Hume 1969:102; Rackham and Read 1924: gatssim). The Metherlands have no white-firing clay (Jan Baart 1982: personal communication), andy although white clays were imported there for the manufacture of delftwares, as yet we have found no references to the use of imported clays to make coarse earthenwares. It is also possible that these wares were made in the Southern Netherlands (present day Eelgium) where there was white firing clay. Noel Hume says that English yellow-glazed vessels occur on American sites of the first half of the 17 th-century, but we found examples at 7 Hanover Square above the land-fill which was deposited in the $16805 / 505$. They are probably not locally made as local earthenware clays fire red. More research is needed to determine the origin and precise dates of these vessels.

## Silfwares

The dates of all buff-bodied slipwares are from the South/Hume typology.

For red-bodied slipwares, code \#71 (Green-Glazed), \#72 (Trailed and Green-Glazed), \#74 (Trailed/Dutch Style), and \#77 (Trailed - Wrotham, Limbourg, etc.) belong to the 17 th -century group of earthenwares. Identification as "Dutch style" and wrotham, Limbourg, and Metropolitan were based upon illustrations and deseriptions in Noel Hume (1969:138-139) and (de kleyn 1982). The dates for codes \#70 (Combed/Zig-Zag, 1670-1795) and \#73 SSgraffito, 1650-1710) were given the Squth/Hume dates for
similarly decorated buff-bodied wares. Code \#75 (1620-1850) is a general category for all other red-bodied slipwares. These Fed-bodied slipware dates are very general and should be refined based upon vessel forms and style of decoration.

## DELFTWARE

We chose to use the term "delftware" for all ceramics glazed with a lead glaze to which tin oxide has been added. The resulting glaze is a thick, white enamel which does not bond well with the tody, but which does provide a background for painted decoration. This ware is also known as tin-enamelled earthenware, galley ware, or faience. The use of the term delftware does not mean; of course; that all of these ceramics were made in the Dutch town of Delft or even in the Netherlands. Delftwares were made all over Europe; but the overwhelming majority of those found in new York came from the Netheriands or Great Eritain.

We have used the term "majolica" as a sub-type within the delftware types. This follows Wilcoxen, Van Dam, and Archer who use "majolica" or "maiolica" to denote a ware which was lead and tin oride glazed on the face, but simply lead glazed on the base or bottom. It pre-dated delftware proper and was the first type of tin-glazed ware made in the Netherlands in the 16 th-century. (See the explanations of the codes below for further delftware/majolica differences.) Unfortunately, the same words were also used by 1 gth-century potters for a highly colored, hard white-bodied earthenware, often molded in various vegetable, floral, or marine forms (Parber 1976:iB).

The methoc of tin-glazing on earthenware was brought to the Southern Netherlands (now Eelgium) in the early lbth-century by immigrant potters from Italy (Neurdenburg and Fackham 1923:22: Van Dam 19日2:88). The technique reached the Northern Netherlands about 15SO. It appears
 alang with lead-glazed late-Medieval type wares in shops organized by the artisan system of production (Van Dam 1982:88). However, by the end of the first quarter of the 17 th-rentury, the production of delftware had been organized into an industry rather than a craft with specialists in different phases of the manufacturing processes and investorfowners who were not potters (Neurdenburg and Racktiam 192s:9, Van Dam 1982:89-90). Delftwares were thus the first European ceramics to be made using a factory system of production funless German stonewares were produced earlier in this mannar).

The production of tin-qlazed earthenwares in England was begun by potters from Flanders (the Southern Netherlands) in the late 1560s (Archer nd:6-7, Noel Hume 1977:20, 1969:105). During the 1 ast half of the loticentury and the first decades of the 17 th-century, connections between the Lowlands and England were $G$ lose and friendly communication between the Netherlands and Southeastern England by sea was easys and the Netherlands were rebeliing against Spanish rule and found their closest ally in Frotestant England. As a result of the geographical and political connections between the two areas, hoth people and materials moved relatively freely between the two. This creates problems for archaeologists seeking to study patterns of trade through ceramics, as it is difficult to determine the country of origin of many delftwares either
on the basis of decoration or clays used in their manufacture. Archer (nd:6) states "it is known that English clay from Norfolk and Suffolk was exported to Holland and thet English pot-painters were employed in Dutch factories, while a number of their Dutch counterparts were at work in England." Neurderburg and Facktiam coneur, specifically noting the export of clay from England in the 17th-century (1923:9). Dutch-made delftware was being imported into England to such an extent that, starting in the 1670s, English potters petitioned for, and received official bans on the importation of painted earthenwares (Archer nd:7; Noel Hume 1969:140-141). It is not known to what extent these bans were avoided or ignored, esperially after the assumption of the English throne by William and Mary in 1685 . Archer (nd:7) sums up the situations "In any case Dutch delftware and the presence of Dutch potters in England had a marked influence on Engiish tin-glazed wares throughout the late 17th-century and until 1740."

While this mixing of cultural influences makes the determination of place of manufacture difficult in general, it $\underline{i} \equiv$ sometimes possible to determine probable place of maufacture of individual pieces on the basis of decoration or design motifs, esperially if the piece is intact or almost so. A salt cellar found at 7 Hanover Square (624.1105.1) was identied by Jan Eaart as coming from Haarlem. This identification was subsequently reinforced by illustrations in korf (19日i, pp. 220ff). Archer (nd), Korf (1981), Noel Hume (1969; 1977) and most others generally assign place of manufacture to archaeological delftwares on the basis of comparison to pieces of known provenience which are in museums or private collections. The same holds true for dating of individual pieces.

Whel Hume and Archer both note differences in the Dutch and English depiction of trees: Dutch trees are generally painted as naturalisticaily as possible, but Engiish trees are more impressionistically represented frequently shown with "long thin trunks and lumpy sponged foliage" (Archer nd: 43) or as "small whirlwinds speeding across the countryside" (Noel Hume 1969:290). Difficulty in origin of style remains as some pieces attributed to London factories have naturalistically painted trees as well (Archer nd:86-89, for instance).

Fothing is said nere about identifying pieces by makers' marks because it is very seldom that archaealagical specimens will have any, Grdinary, everyday delftwares were seldom marked and English delftwares of any kind were only very infrequently marked (Archer nd: 6 ).

Since the potters who brought the technique af tin-glazing to the Netherlands were fran Italy, it is not surprising that the majority of early decorative motifs on majolica were Mediterranean or Italianate in style. Decorations were usually polychrome and often quite Baroque. A major change in style ocurred in the early ifth-century when Chinese; and later Japanese, porcelains began to appear in the Netherlands and England. (See Forcelain section, beiow, for the history of oriental ceramics in Europe in the 17 th-century.) The demand for the attractive blue-on-white Oriental porceiains was tremendous. Delftware, in spite of the artistic limitations imposed by the porosity of the glaze fwhich prevented very delicate painting), was an acceptabie substitute: the white glaze provided a good background for blue shinoiserie designs and, especially from a short distance, delftware gave a creditable imitation of porcelaine $\quad$ When looking at sherds, of course, there is no possibility of confusion between delftwares and porcelainss but when looking at whole
vessels from a moderate distance away, delftwares alosely resemble porcelains).

Ey the mid-seventeenth-century; the decorations on delftwares were almost entirely blue-on-white designs derived from the orient. These wares were popular and widespread. An additional boost was given to the delftware industry when trade was interrupted with China after 1 a 47 (see Forcelain section): The delftware potters were able to meet at least part of the demand for blue-onmwite ceramics. It was during this mid-century Ferind that Delft berame the center of Duth produthion of tin-glazed wares (Warren 1975:24G) =

According to Noej Hune, flain white delft vessels began to be made in the 1640s in Engiand (1969:108). Jan Eant supports this mid-century date for plain plates in the Netherlands (personal communicatinn: ipb2). It appears, howpver, that plain vessels were never as popular as the blue-secorated ones. At the end of the 17 th-century, polychrome decoration on delftwares were common and continued to be so throughout the ibthraentury, Designs mere usually Eurgpean in style and inciuded 1 andscapes, groups of people, and floral motifs. These motifs were also Found an the blue-decorated delftwares.

## TH드DELFWAFE CODES

The delftware codes fall into two separate groups: general types whose primary function is dating and more specific types winch are descriptive of glaze coiors andfor decorative motifs. The latter group Was desioned to enable us ta locate particular sherds for further ヨnalysis. Unless identified as "majolica", all these ceramigs are tin-glazed on both surfaces.

Code $\# 47$ through \#亏S are taken directly from the South/Hume typalagy and will receive no further comments here (see Noel Hume 1969:105-111). The ather codes were campiled by us after consultation with Gharlotte Wilcoxen and Feul Huey, and with reference to Archer (nc: ) Van Dam (1782), Karf (i58i), Warren (1575: 1482), Noel Hume (1969: 1977) and Neurdenburg and Rackham (1923).

## Maj른들드돝

Code \#S7 (Folyciome Majolica) and \#47 imajolisa, referring to all codes except \#37, $\# 7$, and 4Sj are general categories. The end date for majolica is given here as i720; uhich is a very conservative date. van Dafi (i9E2: 0 ) states that, Except in the province of Friesland, majolica production ceased in the Wetherlands between 1650 and 1675 . He does not give an end gate for Frisian majolica. Forf (19Bi) inciudes illustrations of vessels with lead-giazed harks which date to the last half of the 17ヶh-cemtury (see for exampie Figs. \#758, 713, and 711). Noel Hume dates vessels with a "semi-transparent and yellowish lead-glaze" on their backs to the first 70 years of the 17 th-ธeniury (i977:1). It is probabley therefore, that i720 is too late an end date for majolica, but until more is known about its production and export to the North American colonies, an end date cannat be firmly established.

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For the following general codes the beginning and end dates of 1620 to i7Bo were used. The beginning date is consistent with the rest of the typology, and was chosen to reflect the earliest date of settlement in New Amsterdam, but the end date is problematical. Due to the development of
white salt-glazed stoneware, delftwares became less popular and production derlined during the secand and third quarters of the 18th-century, but it was ereamware that replaced delftware as the most popular type of earthenware (Hoei Hume 1973:passim; 1769:107), Ey the end of the 18thcentury, most English and Dutah delftware factories had been forced either to elose or to make creamwares (Archer nd:7-8; Hudig 1979:48-50; Warren 1975:250; Noel Hume 1967:107). The end dates which South/Hume give are 1800 for piain white delftware and 1802 for "decorated delftware". Noel Hume (1967:205) alsomentions delftware ointment pots which bear the names of shops which did not exist befare 1820 or 1830 , but he does not say if these shops were in England or North America. Lntil more research is done on what ceramics were being imported into and sald in New York City after the Revalution and in the first years of the 1 fth-century, it is difficult to assign an end date to delftwares. We chose to use the early date of 17EG because we felt that it was probable that very little delftware was imparted into New York after the Revolution. While this date may uitimately prove to be more realistic, it might mave been more suitable, for the sake of consistency, to continue to use the generally accepted end date of 1 Boo until the issue was clarified.
\#4G 《Unglazed) - this category is for body sherds which have lost their glaze. Delftwaress except for improperly made pieces, were always completely glazed. \#41 (Flain White-Glaze), \#42 (White-Glaze with Elue Decoration) and \#S日 (White-Glaze with Furple Decaratign) are general Categories.

More_Sgecific_Codes
\#43 (Blue-Glaze) and \#44 (Elue-Glaze with Glue Decoration) refer to a robin's-egg-blue glaze seen frequently on $18 t h-c e n t u r y ~ d e l f t w a r e s . ~$
\#45 (Manganese Stippisng) is also seen most frequently on $18 t h-$ century pieces although it is sometimes seen on 17 th-century vessels (Archer nd:41). The manganese was applied by blowing it in powder form onto the vessel while portions of the piece were covered so that they would remain white. The white portions of the glaze were then usuaily painted in blue (ibigi.).
\#46 (Folychrome Delft) includes all sherds with more than blue decoration on white or blue glaze. Colors range from simple yellow highlights on a basically blue design to elaborate designs with four or more colors. In general, polychrome decorated delftwares (not majolicas) are more 1 iteiy to be from the $18 t h$ rather than the 17th-century, but pieces were individually assigned specific dates when possible. \#5ó (Debased Fiouen Faience) is a late type of delftware made; as the name suggests, in France. It had a red body, white tin glaze with Glue decoration on the faceg and a dark brown lead glaze on the back. most of these vessels were used in food preparation, but plates are not uncommon.
\#SB (Nevers Elue) was made not only in France, but also in the Netherlands and Great Britain. This type of delftware has a very dark blue glaze which is decorated with white painting.
\#36 (Fied-Bodied Delft) (except code 56) was included to monitor this category $\quad$ Patil Huey (personal communication:1981) had suggested that red-bodied Dutch delftwares were earlier than the more common buff or
yeliow-bodied wares. In general, the few red-bodied sherds which were recovered from these sites were from the earliest contexts.
\#s (Chain Border) and \#4B (Elue Dash Earder) are border motifs which are found on both delftwares proper and majolica, but which are more likely, especialiy \#39, to be found on majolica. They pccur on both English and Dutch vessels.

## CREAMWARES

These typas are essentially the same as those of South/Hume with mingr modifications. We did not distinguish between lighter-bodied versus darker-bodied creamware as this was ton suhjective a distimetion to male in light of Noel Hume's comment that potters found it hard to control the hues of their products from one kiln firing ta another fNol Hume 1973:2s9). The South/Hume type \#8 "finger-painted wares" was subsumed Linder our type \#104 for all annular wares. This was done because vessels with the "finger-painted" motif can have other annular-type decorations as well (Van Fennsselaer 1978: E (2ssim). For the same reason, we included all of the various annular or banded decorations under this one code. On a site with more $19 \mathrm{th}-$ century contexts, it would be advisable to have several codes for these types of decorations on creamwares, pearlwares, and whitewares.

We expanded South's basic types \{our codes $71-101$ ) but left the dates the same as for creamware in general. In addition, three varieties of early cream-coigred earthenwares (which are not actually "creamware" if this latter term is used only for Wedgewond Queensware types of
earthenwares) were included in this category in the coding system for the Sake of simplicity: \#10S (Grean-Glazed) and \#106 (Clouded-Glaze) use dates from South/Hume but the date for \#107 (Early Cream-Colored Ware? is a composite date from Virginia Myles of Parks Canada (19G1:personal commurication) and south/Hume. This early (1740-1780) refined earthenware has a color which is ushally darker than creamware proper, sometimes verging on a mustardy color, and is often found with intricate sprigged decoration.

Code \#10q (Marbelized) refers to the technique of decorating the surface of an object with tiny chips of colored clays. These clays were Lsually ground or polished to a smooth surface which resembles agate ware or very finely marbeled slips. Dccasignallys the chips were left unsmoothed and a very rough surface Fesults. Van Rennselaer illustrates a teapot decoreted with ground chips, which she calls "speckied" (197E:241).

## EEAFLWAEE

The basit date $1780-1830$ which South/Hume assign to plain and edge-decor ated pearlwares was used for pearlwares in general with five exceptions: \#1さ5 (Transfer Printed) and \#132 (Underglaze-Blue) retain tineir Sauth/Hime dates of $1740-1795$ and $1780-1820$ respectively; \#13 (Underglaze-Erown) was given a date corresponding to underglaze-blues anmular wares (\#134) are dated from $1790-1820$ by South/Hume, but we advanced the end date to 1850 based upon Noel Hume 1978, Van Fennselaer 1978 and our own abservations. Finally; Lnderglaze-Folychrome Fearlware is divided by South/Hume into later (1820-1840) and earlier (1795-1815) types. Since the basis for this distinction was not clear to us, we
combined the two into one type dated $1795-1840$. However, almost all of the underglaze-polychrome decorated pearlware from these gites comes from contexts which can be dated by other means to before 1820, For a more detailed description af the underglaze polychrome pearlwares which were Excavated from an early IGth-century china shop dump see appendix E.

## WHITEWAFE

The period 1800 to 1830 was a time of transition in the development of refined earthenwares in which creamware and pearlware bodies were graduaily iightened until they became the ceramic type which is now called "whiteware" " it is also probable that a change was made from lead glazes to alkaline glazes daring the last decade of this period (Goring 1981:9, Lafetrum 1976:10). The separation of pearlwares from whitewares has been a probiem for archaealogists, but most ceramic historians are in agreement that the name given to the wares is not very important: design motifs, decarative elements and techniques, and vessel forms are the significant attributes which should be used for dating and socio-economic interpretations (Goring 1951:12, Miller 1983:passim).

If ciecoration was present on a sherd, it was almost always possible to assign a sherd to a particular type, but plain sherds were a problem. To simplify classification, we made a distinction between pieces with blie-green puddling or quer-all tint and those with ice-biue puddling or tint: the blue-green was classified as pearlware while the ice-blue was classified as whiteware. This division was besed upon cur observation of decorated sherds which could be unequivocally flassified as one or the other .

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It might be best to standardize the terme "cream-colored" or "c-c ware" as ased by Miller (1980: passim) to cover all of these miscellanedus 1?th century refined earthenwares. Earber, writing in the 189G's, defines cream-colored ware as follows:

Known as C. C. ware by the trade, because of its yeilowish tint in former years, (it) is the cheapest grade of reliable whiteware. it is now made of excellent quality, almost equal in appearance to the higher grade af goods, (these are listed by Earber as white granite, semi-porcelain, and forcelain) and is used for cooking and table purposes. Barber 1976:18-19

The term "ironstone" has also been a source of confusion for artheeologists. Charles and George Mason took Dut a patent in England in 181" for a new process of producing porcelain and earthenware; this ware Eame to be called "ironstone" (Fister 1978:26З) = f similar process had teen used since i日os by Spode, Mintong and John and William Turner to produce a body called "stonerhina" (Fisher ibiga, Noel Hume 1969:131). Masons's wares were "useful and ornamental vessels .: whenever passible imitating Chinese shapes and decorations" (Fisher itoig. . Many of Mascm's wares were quite ornate and were dencrated in Imari-style colors, and it i三 protable that very few plain wares were made in the early years of ironstone produrtion. Therefore, the identification of pre-ig2o ironstone sinould be based boti upon body type and decoration, and the possibilitas of confusion with later $19 t h-6 e n t u r y$ ironstones (a reason advanced by some archaeqlogists for siarting their whiteware dates as eariy as iBos) are
minimal. Wie did not include a separate category for ironstones or stone chine for several reasons: we felt that the decorative elements rather than the body type should be emphasized; there is little agreement among archapologists as to what aonstitutes iranstone; and, most importantly, i9th-century contexts on the site were few. On a 19th-century site it would be useful to define the differences between ironstone, common white earthenware, semi-poreelain; and stone. (For varied uses of these terms今ee, for instance; Barber 1976:18-19 and Gates and Omerod 1982:7-8.) The starting date for whiteware in the South/Heme typalagy is 1820. We chose to use 1810 instead because we hoped to redure dating Gistortions caused by the overlap of creamwares, pearlwares and whitewares. The end date for all but the feather and shell edged and decal decorated types is 1500 , whish is consistent with the other dates in our typology and which reflects the nature of the deposits which we chose to excavate. Feather and shell edged wares were given the end date of 1565 (Miller 1780:10).

## YELEOWWBEE

This is a general group based on color of the body and inciudes Eoth nineteenth-century "yellowware" and earlier yellow-bodied earthenwares. The nineteenth-century categories are \#Bo (Ciear Glaze),
\#81 (Annular Yelloware). They were dated 1820 to 1920 (Gates and Armerod 1982:7). \#83 (Mottled-Erown Glaze - Rockingham Type) was dated 1780 to 1900, but a recent reference (Garrow 1982:238) suggests that a starting date of 1790 would be more accurate.
\#84 (Mottled-Erown Glaze - 18th-century type (1660-1750)) refers to a ware which has a buff body and a medium to dark brown glaze, mottled and streaked with darker brown. The body resembles some yellow slipware pastes, but is usually thinner and harder than most slipwares. The forms which could be inferred were mugs witt cordonned bases. This ware was probably made in the Midlands of Britain during the latter 17 th and first half of the 18th-centuries (artifacts on exhibit, Farks Canada, Ottowa). We dated this ware 1660 to 1750 , but Davey (1975:Fig. इ and 4) gives similar wares the dates of $c .1680$ to 1780 . Most of our sherds of this type were found in pre-creamware contexts.
\#85 (Mottled-Foiychrome Elaze) (1740-1770) refers to a
Whieldon-type or clouded glaze on a mustardy or dark cream body.

WHITIㄷSALI-GLAZED_STOUEWARES
Most of these codes are from the South ciassification: our \#170 (Flain) corresponds to his \#40; \#172 (Molded Decoration) to \#16; \#173 (Slip-Dipped) to \#48; \#174 (Scratch b1ue) to \#34; \#175 (Debased Scratch Blue) to \#24, \#176 (Scratch Brown or Trailed) to \#S5: and \#177 (Transfer Printed) to \#30.

Code \#171 (Gverglaze Decoration) refers to handpainted derorations in polychrome colors. Floral motifs are common and the decorations often
resemble those on early ereamwares. South does not include this type and no sperific dates for overglaze decoration are mentioned in Noel Hume (1969 and 1978), so the general dates for white salt-glazed (1720-1805) were used. However, Barber (1907:21) writes that this technique began about 1740 and was out of popularity by 1780, and Mountford (1973:209) says it starts about 1750 and was well established by the 17605. Therefore, it would be better in the future to date this category 1740 to 1780.

## GREY_AND_BROWN_SALT-GLAZED_STGNEWARES

We decided to combine the groups of grey and brown bodied wares because there are many intermediate colors and hues and because grey bodies are often given brown surface treatments ifor example Nottinghams Beliermine, and British-Brown wares) which make assignment to one group or another difficult.


We are using the above terms rather than the alternative ones found in the literature ("Frenchen Ware", "Rhenish-Erown stoneware", "Cologne ware", "Greybeards" or "Bartmann Eottles") to follow the usage in Noel Hume's Guide and to stay away from the controversies about putative place of manufacture. Eellarmines have a grey or taupe body which is covered with an iron-oxide slip which forms a light brown to dark-brown mottled surface after firing. In form, they are bottles with bulbous bodies and
fairly narrow to fairly wide necks. A sprig-molded man's bearded face on the neck of the bottle and an armorial, pseudo-armorial, or coin-like sprigged medallion on the body are found on 17 th-century vessels, but Noel Hume says that bottles without these decorations were made and exported throught the first quarter of the 18th-century (1969:57) - Eeilarmines were made in several pottery centers in the Finineland and Flanders and the shapes, styles of decorations, and shades of mottling vary over moth time and between potteries (Barber 1907:i11= 21-25; Noel Hume 1967:i11. 4-6) No reconstructable or almost whole bellarmines were recovered from either site and fewer than one half-dozeri sherds with partial faces or medallions were found. Squth's ceramic typology dates bellarmines in two三eparate types, "well-molded human face 1550-1625" and "deteriarated 162G-1700". Since the vast majority of our bellarmine sherds are tody sherds without decoration, and because of Noel Hume's comment on igthcentury production, we have used the dates of 1620 gour sitemide beginning date) te 1725 for all bellarmine sherds.
it should be noted that there is a possibility of puerlep opeween gur bellarmine codes \#18G and 170; and \#210 and 211 , "Mritish-Erouri Stonewares". Becalse of the populatity of German salt-glazed stomewares, Iohn Dwight and others in England tried to imitate them. Efforts were made to copy خhe beilarmire body; glaze; and form; the latter especially in the 17th-rentury Garber 1907:10 ffes Mountford 197S:199ft, Noel Hume 1969:111-512; Fiextham and Fead 1924:76ff. \%. The success of the English imitations is in some doutt. Factham and Read (ibig=) say that John [wight's bottles "might be mistaken for German but for their glase coagulated intr thick giue-like tearse" Earber ( logecift ) notes that "Few pieces of his (Dwight's) work are known, but those which have survived are of the highest merit."
fiowever, this reference is sijghtly ambiguous as Harber might be referring to Dwight's seulptural worts in white and colored stonewares. Noel Hume (1967:112) characterizes pieces attributed to Dwight's pottery as "not very weil-made". Be that as it may, there are tankard sherds from test cuts $Y$ and AH at 7 Hanover Square which closely resemble bellarmine sherds in their body and glaze. Their form distinguishes them, since bellarmine bottle sherds are more curved than mug/tankard sherds, but many sherds are so small that form can not be determined. In general, sherds with grey bodies and mattled brown exteriors were coded as \#190 unless they were clearly not bottles.

Codes \#194 (Empelisished Hohr type, 1690-1710), \#17i fFhenish 1650-1725) and \#192 (Westerwald, 1700-1775) correspond to South 5 \#59, \#58 (Sprig-Molded, Combed Lines; Blue and Manganese Decoration), and \#44 (Stamped-Blue Floral Devices, Geometric Designs) respectively. Code \#ips (Fhenish/Westerweld) was used when the thinness of the body and well-executed decoration pointed to German manufacture but the type of decoration could nat be determined.

Codes \#15E (Nottinghan Type, $1700-1800$ ), \#210 (Eritish-Brown Stoneware, 1690-1790), \#211 (Brown Saltglaze Mugs, Fu1ham, 1690-1790); \#212 (Ralph Shaw-Type, 1732-1750), and \#213 (Erown Stoneware Bottles, 1820-1900) are South's codes \#46, 54, 5s, 50, and 1 .

The remainder of the codes are descriptive and are undated except for the two Albany-slip codes ( 498 and 214) which are dated 1800 to 1900. The destriptive cores are the following: \#196 (Fiain - Gray Eody)
 Bodyl, \#215 (Miseellanequs Elue Decoration - Erown Endy) a and \#tpq (other Erown Eiip (non-Albaryy - Gray Eody)

The non-Ealt glazed stoneware codes consist of three dated types from South and five undated descriptive types. The dated types are $\# 220$ (Elers Type, 1690-1775: South's \#\$7); \#221 (Red-Eodied Engine-Turned, 176s-1775; South's \#28; : and \#223 \{Elack Easalts, 1750-1820; South's \#27). The descriptive types are \#222 (Miscellaneous Red Body), \#224 (Miscellaneous Elack Body), \#225 (Miscellaneous Erown Eody), and \#226 (Miscealaneous Gray Eody).

## EGEGELAIN

Methods for distinguishing between hard and soft paste porcelains are commonly found in the "Antique" literature. Various techniques have been advocated, some more escteric than others, but two are the most reliable: irradiating the sherds with a short-wave ultra-violet light and examination of the broken edges of the sherds. Fion whate of Farks Canada introduced us to the first method, which is also used by glass analysts to separate soda from lead glass. When the ultra-violet light is shined on the sherds in a dark place, hard-paste sherds will floresce a dark, Erillant purple, but soft-paste sherds will simply reflect the purple of the light.

Examination of the fractured edges, especially with a hand-lens, can also be useful. Hard paste sherds show concoidal fractures while soft-paste sherds have granular or "sugary" edges (Spargo 1974: 30-31). Unfortunately, there are several problems with this method. The sherds are likely to be so thin that the fracture-lines are difficult to see. In addition, fractures sometimes appear to be both conicoidal and granular,
so that the separation of the two becomes a matter of judgment．
Oriental porcelains，which are almost always hard－paste，can be identified by their decoration EGordon 1979；Curtis 1979；McFadden 1979； Falmer 1976：Fudge 1962；Medley 1976 and others in the bibliography contain many excellent illustrations）＝For identification of marg－paste＊ one technological feature is particularly usefil：the foot rings of Chirese vessels are unglazed and not infrequently have rough spots（winate 1将：25j．The color of the unglazed forions is often a light－orange，but can be buff or greyish．The bodies of chinese vessels range from very thin to thick depencing on the type of vessel and the quality of the potting．Thimter pieces often have a slightly＂curdled＂or＂or ange peel＂ texture，but are not pitted 1 ikE salt－glazed sherds．

Ch三nese Export For：elainss especialiy those decorated with an underglaze－if：se，often have landscape，fioral，or landscape－floral designs With gecmetric borders＝A landscape－floral design is one in which the large－scale flower elements grow up from a ground（whate 1981：26）． Feople，dragons and waterscapes are also common．Overglaze designs， gefocially in the Iast half of the leth－century，are often small－scale fiorai petterris which show European influence．

Chinese porcelains are much more common on colonial sites than are European hard or soft－pastes．Noel Hume states that＂although English and European porcelains are found in small quantities on colonial and Early American sites of the second half of the ieth－century，they were not present in anything like the quantities provided by the Chinese．．．＂（Noel Hume 1967：257）．At Ft．Michilimackinac，there were ol sherds of English soft paste compared to 3, ob2 sherds of Chinese Export Porcelain 《Miller and Stone 1970：90）＝Miller and Stone conclude that European porgelains
"did not occupy a major place in the materiai cuiture of the colonial period" because of "factors of price and supply" ( ibiga, ). Froduction costs in China were very low and even the considerable shipping costs did not raise the price of Chinese porcelains to that of European ones. The quality of Chinese porcelains during the colonial period was at least equal to, and usually better than, European wares. Of the soft paste types, English underglaze blue decorated was generally the cheapest because it did not require an additional firing to fix the decoration. The China trade declined during the last years of the eighteenth and the first half of the $17 t h-c e n t u r y$, and Chinese porcelains were replaced by Continental hard-paste porcelains and English bone-china in North American homes. The quality of decorations on Chinese porcelains had deteriorated and many European countries, in particular Engiand, had begun to impose heavy tariffs to protect their own porcelain factories. The Western potters had alse maneged to improve their ware's quality while reduring their relative prices (Mudge 1962: 12§-127). We recommend that porcelain not be used to calculate mean ceramic dates. For one thing, it is difficult to establish sufficiently narrow temporal limits for many types of porcelains, and porcelains as a class are much more likely to be curated than are other ceramics. At the 7 Hanover Square site; for example, Test Cut I had Chinese Export Forcelains which dated from the 1740 s to circa 1805 which came from one depositional episode. (These sherds were dated by Mr. David Howard for inclusion in an exhibit.)

## Forcelain_Codes

European hard and soft paste porcelains were generally not dated. The date range for these wares is long (see below) and the sherds were generally too fragmentary to te confidently identified. If a vessel could be given a specific date, it was noted on the original tabulation sheets, but these individual dates could not be included in the computer program.

## 

Soft-paste porcelain is an "imitation" porcelain because it does not contain pententsue and kaolin clays. Its composition varied and "ロften included finely ground glasslike materials which, when miked with clay, produced a white; translucent body . . other additives to the mixture werg alabaster, steatite, and ground animal bones... fired at much Iower temperatures than hard-pastes" (McFadden 1979:20). Soft-paste Porceiain was first made in France in the $1670^{\prime}$ s and by the $1740^{\prime}$ s in Engiand. As noted abque, saft-paste porcelains are nat common on North American colonial sites; but the most frequently found type of soft-paste is Eriglish underglaze-blue decorated. Its decorations are very similar to those fourid at a somewhat later date on pearlware sinnovations in ceramic decorations like the shell-edged motif and transfer-printing are generally used earlier on portelains than on earthenwares). Ceramic historians and collertors have devoted much effort to the study of porcelain decorations, and it is often passible to date transfer-printed and hand-painted decorations from their publications.

The first successful European hard-paste porcelain was made about i708 by an alchemist named Johann Friedrich Eottger who was employed by fugustus the Stong, Elector of Saxony. The Meissen factory was founded on his discoveries. A second hard-paste factory was established in Vienna in 1719 and other hard-paste fartories appeared in France, Austria; Germany and Italy from 1750 to 1750 (McFadden 1979: 12-20). Mary qf these factories still enist today. Most were established by princes or other aristocrats or soon came under royal protection, and thus were able to withstand the financial problems which oeset them all in the early years of production (iAcFadden $\ddagger 975: 20$ ). In general, the early factaries began with imitations of Chinese decorative styles, but by the second-half of the $18 t h-c e n t u r y$ a distinctively European style with baroque and rococco


Mard-paste porcelain was first made in England at Bristol in 1768 but production had stapped by 1778 or 1781 (Cooper in Atterbury 1979: 91-102). The patent for porcelain was bought by other potters who prodiced the ware at New Hall until 1810, but English potters in general directed their main efforts toward perfecting soft-paste bone china (_ibid. ) : Hard-paste was first made commercially in the United States about 1825. There had been earlier experimental wares, but "beginning in 1825 there was a period in which the manufacture of (hard-paste) porcelain in America passed from the stage of laboratory experiment and became an important factor in the seramif industry" (Spargo 1926:227).

As was stated above; it is probable that very little European hard paste reached the American colanies or the early fepublic. Therefore, in
order to minimize disiortion in calculating the mean ceramic date, we decided to use a starting date of 1800 for all non-Oriental hard-paste porcelains. This decision is not entirely satisfactory but awaits further research on the distribution of European porcelains within North fmerica.

The number of sherds identified as non-Oriental hard-paste
porcelain at both the Stadt Huys Elock and 7 Hanaver Square is small. Thirty sherds at the 7 Hanover Square site and 87 sherds at the Stadt Huys Block site were assigned to this type. (At the latter site, due to our initial inexperience, some of these sherds are probably actually Orientai.) Most of the sherds, 18 at 7 Hanover Square and 51 at the Stadt Heys, were undecorated. There were none of the elaborateq overglazedecorated weres which are characteristic of 1Bth-century Eurapean vessels.

The term "Ciriental Export Forcelain" will be used here for all Oriental porcelains found at the 7 Hanover Square and Stadt Huys Elock sites. "Oriental" is used rather than "Chinese" bpaause we thought it Iikely that porcelains from Japan would be found in New York City That we have not yet identified any sherds as Japanese, is probably more a fartor of the difficulty of identifying fragments than of the absente of Japanese wares here. Ehinese porcelains made for export to the wost have teen salled Chine-de-Command, Oriental Lowestoft, or China Trade Forcelains, but the currently accepted term is Chinese Export Forcelain as used by Mudge, Falmer, Gordon and others. "日. E.F." when used below will
refer to Driental porcelains in general, and "C:E=F" will refer to Chiriese porcelains specifically.

Chinese Export Forcelains were made in China for western markets to different standards than those made for internal Chinese markets. Some of the latter wares were imported by Europeans; but so far none have been identified from either site.

When Chinese porcelains first appeared in Europe during the late Middle Ages; their beauty and rarity caused Europeans to equate them with jewels and precious metals and they were usually possessed anly by sovereigns. During the $17 t h-$ century the Vereenigde Gastindische Compagnie, the V. D. E., (Dutioh East India Company), imported such quantities of underglaze-blue export wares that it became passible for Dutch middie class householders to have cuphoards full of porcelain (van der pijl-ketel 19日2: SO). It is not yet known to what extent this availability of porgelain extended to the Dutch 17th-century calonies, but in the $18 t h$-century English colonies; Oripntal poreelains were a gtamdard item in middle anci upper cless inventories (Noel Hume 1969:257, Deetz


The first organized European sea trade with the Orient was initiated by the fortuguese in the $16 t h-c e n t u r y . \quad$ They reached China in 1514, but the Chinese did not permit them to set up a permanent trading base until 1557 , when they were allowed to settle at Marao. Marag is Iocated at the mouth of the Fearl Fiver 80 miles downriver from Canton. Before this time, the Fortuguese traded along the coast by establishing
annual trade fairs (Beurdeley 1962:69-70). From the $1560^{\prime} 5$, at the least, porcelains were a reguiar part of the goods shipped to Europe, but, since the trade was controlled by the Portugese, it could only be obtained in Lisbon. When Fhillip II of Spain laid claim to Fortugal in 1580, this intra-European trade became difficult for the Dutch. The Netherlands were in the midst of a revolt against Spanish rule in the Netherlands, and Fhillip officially closed Fortguese ports to the Dutch (Curtis 1979:3-4, Beurdeley 1962:89ff). Unsanctioned trade continued, but there was frequent confiscation of ships and cargoes by the Spanish. The Dutch merchants responded by trying to establish direct trade with the Orient. They set out for the East Indian islands where they expected to find fewer Fortguese than on the mainland of China (van der Fijl-ketel 1982:9). Many of the cities of the Netherlands formed companies to trade with the Indies, and these small companies were in competition with each other until 1602 when they werg amalgamated into the V.O.C. By 1606 , the V.0.C. had established a trading base at Eantam where Chinese merchants brought goods to trade with Indonesian as well as Dutch and other European traders. Hecause the Dutch could not obtain a monopoly in the markets at Fantam, they moved in 1619 to Jakarta Island where they established the town of Eatavia (van der Fijl-Ketel 19日2:10). The Chinese government did not allow the Dutch to trade directly on the mainland, so the V.0.C. continued to meet Chinese merchants at Batavia and on Formosa, which was settled in 1624. In 1640 , the Dutch captured the strategic port of Malacca from the Fortugese, and the Netherlands became the dominant European power in the trade with the Orient (Curtis 1979:4).

During the first quarter of the 19th-century the English began to dominate the trade with China through ports in india. The first English ships sailed for China in 1596, just one year after the first Dutch fleet, but all three vessels were lost at sea. English trade to the Orient was sporadic throughout the 17 th-century, although two separate East India companies were merged into the Honorable East India Company and by 1725 the English acsounted for $70 \%$ of Chinese imports to Europe (Curtis 1979:4).

The Chinese government continued to limit contact between foreigners and Chinese, and in 1757 trade with Europeans was restricted to Canton. Canton, formerly the center of the medieval sea trade with the Arabs and the Fersians, had been opened to European trade in 1699. The trade at Cantori was strictly regulated and the movement of foreigners beyond the waterfront district of the "hongs" - the trading buildings was prohibited. (See Mudge in particular for a detailed description of the organization of trade at Canton.) Trade was limited to Canton until the Gpium wars of $1839-1842$, when the western powers, led by England, imposed new trading agreements upon the Chinese.

There is no evidence of direct trade between New York and China before the Revolution. Once the war was over, the merchants of the American port cities lost no time in trying to meet the demand for Chinese goods. The first American ship, "The Empress of China", financed by Fobert Morris of Fhiladelphia and Daniel Farker of New York, left New York City on February 22, 1784 and returned on May 11, 1785 with, among other goods, 762 bowes of porcelain (Mudge 1963:14). By the 1830s, the United

States was chalipenging England's trade domination, but the China trade in general had fallen off. European porcelains had replaced Oriental ones in fashion as the quality of the Chinese wares, and the price of European wares, declined (Mudge 1962:127).

The amount of porcelain imported into Europe was quite large. Gordon, quoting from Voler's work on the V.O.C. records, states that "on a conservative basis, approximately 12 million pieces were imported during the period (1602-1682) by the Dutch alone" (Gordon 1979:9). Medley uses the figure of three miliion pieces annually at the height of the trade in the late 17th-century (Medley 1976:261). Curtis summarizes various sources to estimate bo million pieces by the end of the $18 t h-c e n t u r y$ (Curtis 1979:与). At present, we do not know how much of this porcelain found its way to the American colonies or it it was part of a general trane in ceramics between the Netherlands and England and their colonies.

It is passible that many 17 th and $18 t h-c e n t u r y$ porcelains were brought in to North America ty specific individuals for their own use, but we know; from archaedogical evidence and from Mudge's extensive documentary research, that C.E.F.s were Eammon in New York City china shops by the end of the 1eth-century.

The main soruce of Oriental porcelain was China and the principal place of manufacture was the state-administered kilns at Ching-te Chen (Jingdezhen). Ching-te Chen had been a specialized pottery manufacturing center since the Sung Dynasty (1127-1279) (Medley 1976:164 ff.). Various political and financial factors caused the kilns to be "transformed from privately owned craftsmen's kilns into a series of industrial complexes" (og.cit. p.117). Throughout the Ming Dynasty (1368-1643) the kilns at

Ching-te Chen supplied porcelains for the Imperial households and for domestic markets. Ey the lbth-century the potters were suffering from a decline in Imperial orders due to the financial troubles of the later Ming emperors, but partial relief came through orders from the Japanese and iater the Fortugese and Dutch (Medley 1976:224-225) . The Chinese potters were not hesitant to cater to the Decidental market (specially decorated wares and forms had been made for the Arabic and Persian markets since at least the 14 th century). Chinese forms decorated to European specifics are known from the isth-century (Le Corbeilier in Eordon 1979:82), but the first evidence of European forms sent to China for copying comes from the Y. $0 . C$. records for 1635 , in which the Dutch governor reported that he had sent a large assortment of wooden models of ceramics to Chinese merchants (itudg).

Chinese porcelain production suffered from the fighting and general unrest that marked the end of the Ming and the establishment of the Ehing Dynasties \{i635-1s80\}. The kilns at Ching-te Chen itself were destroyed during the 1670 and were not rebuilt until 168 S . During this quarter century of disruption in Chirese production, Dutch trade with Japan was the principal source of Oriental ceramics for Europe fFalmer 1976:10, Whate 1981:27).

When the kilns at Ching-te Chen were rebuilt, they were also reorganized. Froduction for the Imperial households was overseen by a superintendant appointed by the emperor* The Ching emperor, K'ang-hsi, was very interested in porcelain and in improving the grganization of its manufacture. Some kilns made wares oniy for the Imperial palaces, while
other kilns made wares for domestic markets and for evport fan der Fijl-Ketel 1982:41). The quality of porceiain bodies varied with the proportions of pentuntse and saolin as well as with the skill and Gare of the poiters, and inferior todies were often used in export wares (Mudge 1962:47-50, 75\%. Ey 1799, Ching-te Chen was one of the largest cities in the worid, with over 1,00G,000 people and approximately Sogoo kilns (Curtis i79755). Froduction was organized along a type of assembly line in which one person was responsible for only one small part af the entire
 Murge chapter sig for details of manufacturing at Ching-te Lhen. j These manufacturing methode resulted in speed and standardization. Eluality of decoration also varied considerably and ranged from estremeivy well exeruted paintimgs to those which are almost scribbleds

Some provincial kilns, notably those rf Fukien and Swataw, also made porcalains which found theit way, particularly in the 17th-sentury; to European merkets (van der Fijl-Ketel 1782:6, 45; Mudge 1962:54-55), but "Ching-te Chen and the minor kilns in ize-chou prefecture (where Ching-te Chen is igaated) were responsible for the great bulk of the ceramic output" (Medley 197ش:217).

Gome porcelains, esperially in the later tBth-centary, were not decorated at their place of menufacture, but were sent plain to Canton Where they were painted with polychrome-ovorglaze colors and gilding, and refired. This was done in order to reduce the time needed to fill speaial orders. Drders for special shapes or underglaze decorations had to be

Flaced at least a year in advance, tut standard forms were kept in stock at Canton and were decorated to order : Monogramed and pseudo-armorial designs were commonly done in this manner.

Identification of porcelains was complicated by several factors: the small size and unmendability of most of the sherds: our far from complete knowledge of $\mathrm{C} . \mathrm{E} . \mathrm{F} . \mathrm{designs}$ and the unfortunate propensity of overglaze colors ta come off in the ground. Gverglaze decorations tend to adhere to dirt rather than to the surface of vessels. "ghadows" of the decorgtions are left on the glaze and designs can thus be determined; but calors are list. Mast Chinese porcelains were ummarkedy but reign marks of the Ming and Ching emperors were occasionally used. None were found at the Stadt Huys Elock or 7 Hanover Square sites. Hume (1969:264) and Medley (1976:277-278) illustrate reign marks.

The dates Lsed are a combination of Medley, Mudge, Falmer and Whate, for the most part. They do not include all of the possible types of porcelains made during the 20 of years of the China trade, but they do include the most common anes and should be useful for 17th, 18th, and early 17 th century sites. The end date of 1840 was used for most of the Categories because, following Mudge, it is likely that "Chinese enport porcelain, suffering from breakage; poor quality, and competition . . $=$ had been fairly well superceded by European wares by 1841" (Mudge 1962:127). This does mot mean, of course, that all importing of Chinese porcelains stopped; however, amounts greatly declined.
\#z49 (Encre de Lhine, also called "pencilled" or "en grisaille", 1720-1795). This type has overglaze painting in a brown/black manganese based ink. Designs were usually finally drawn and the technique was most probably inspired by contemporary European engravings. Flesh tones and gilt highlights were sometimes added. This technique was developed during the last years of the reign of kang-hsi icirca 1720 ) and its greatest popularity is said to have been between 1750 and 1750 with dated examples found through i795 (Falmer 1976:17-19).
\#250 (Plairi, i.e. white without decoration; undated). Most Chinese vessels were decorated with either underglaze or overglaze colors, but some plain white wares were made at Ching-te Chen in the same shapes as decorated wares and differed only by being glazed "with a perfectly colourless giaze of great brillance" (Medley 1976:259). All of our plain white sherds, except for undecorated portions of plate bases, are small and we could not reconstruct any plain white vessels. It is likely that most all of the plain sherds are pieces of decorated vessels.
\#251 (Underglaze-Blue - Canton or Nanking patterns, 1790-1840). This category was used when these specific patterns could be identified. Eoth werg used on a wide variety of vessel shapes. The central motif of both is some combination of islands; bridges, willaws and houses. The borders differ: "Canton ware customariiy has a dark-blue lattice or network border on a solid light-blue ground with a wavy or scalloped line above. The Nanking border consists of a closer network with a small ornament in each
mesh of the net. Instead of the soalloped line of the Canton ware, it has a spearhead border." (Mudge 1762:140).

The similarily dated "Fitzhugh" pattern has not been identified from either site. Mudge (1962:141) discusses and illustrates this pattern.
\#252 (Underglaze-Blue with Erown Line Atop the Rim, 1700-1840). It had been suggested to us that the brown tim was found on vessels made before the Fevolution. Fon whate, however; states that this technique was used into the 19 th-century but was not used before about 1700 (1781:pers.comm.). It is common at both sites and is found on cups, plates, and shallow bowls.
\#25s innderglaze-Blue - general; undated). This is a general category for all blue and white sherds except those coded as 251 or 252. Bur eventual goal is to be able to create more tightly dated categories based on design; blue and white porcelains were by far the mast common C.E.P.s and it will be most important for archaeologists to learn about decorative styles and motifs from ceramic historians and antiquarians. Designs are the key, for once the underglaze-blue technique was fully developed in tine 14th-century, dating sherds becomes a matter "of art rather than of technology, and it is decorative style and fashion which take first place" (Medley 1976:191).
\#254 (Famille Rose, 1720-1840). This overglaze decorative technique is defined by both its palette (i.e. a particular combination of colors) and its style. It was developed about the same time as encre-de-Chine from European methods for enameling metals with opaque colors (Falmer 1976: 16, Medley 1976:246). Color included an attractive rose-pink, which gave this palette its names as well as other pinks, greens, blues, yellows, and opaque white. The Chinese potters experimented with these colors throughout the $1720 s$, and by 1730 had mastered the technique (Medley ibid. : Famille rose designs are likely to be floral and according to Noel Hume, show "large and rather blowzy pink peonies" (Noel Hume 1964:2593. Delicate floral designs, birds, and figures are alsa common. Mediey characterizes famille rose designs as showing "meticulous treatment of detail, while the stability of the enamel pastes permitted delicate shading of tones and a wide variety of colour combinations: Medley 1976:247).
\#257 (Famille Verte, (1660-1745?). This overglaze decorative technique became common after the reorganization of the kilns at Ching-te Chen (Gordon 1975:9). The colors are translucent enamels with green as the dominant color. Designs are often outlined in brown or black and early (pre-1700) pieces often show underglaze-blue in combination with overglaze colors (Medley 1976:243; Falmer 1976:15-16). These translucent colors were largely replaced by the opaque colors of the famille rose palette by 1735 \{Falmer ibid.). The end date of 1735 was therefore provisionally chosen although the famille verte palette is still occasionally used today.
\#2sb (Famille Noir) isg according to Medley, a variant of famille verte (Medley 1976:244). Familie jaune is another variant and the three "use the same palette hut the emphasis is either on the black or the yellow rather than the green, and in both cases these tend to be background colours" (ibids). Famille noir should not be confused with entre de Chine (相249 above). Famille noir is polychrome while encre de Chine is a monochrome technique that may occasionally be used in combination with colors, usually of the famille fose palette.
\#255 6Dyerglaze-Decorated, "European" style, predominantly red, $1750=-1840)$
\#2ch (Overglaze-Decorated "European" style decoration, 1750?-1840). These codes are based upon style rather than palette. Eurapean style decorative elements or European subjerts (Biblical, mythological, genre srenes, ets.) were used by Chimese decorators as garly as the late 17th Century, and encre de Chine and famille rose decarations are often influenced by European designs. These codes, however, refer to simplified designs which were based on those found on contemporary European Porcelains: These are the designs referred ta as "crudely decorated" GGordon 1975:9), "declined to a point where very little craftsmanship was involved" (Noel Hume 1969:261), and " (with a) lack of imagination and vitality" (Curtis i 780 : 6). The designs are extremely simplified and borders are often merely wavy 1 ines, dots, dashes, or sketchy spearheads. Frequentiy, there is a small scale, rather delicate, floral design in the centers of tea cups, saucers and shallow bowls and on the exteriors af tea cups.

At the Stadt Huys Black and 7 Hanover Square sites these wares are found with creamwares and pearlwares. We know, from the matched sets of Eups and saucers which were found in the ceramic shop refuse at 7 Hanover Square, that the same shops which sold European Fefined earthenwares also sold C.E.F.s at tine end of the IBth and early 19th centuries.

The beginning date is provisional. None of the sources consulted mentions when these simplified decorations began to be made, but all are in agremment that the majority of overglaze C.E.F.s were done in this style by the end of the $18 t h$ century. Further analysis of archaeological collections should help ta establish a beginning date.
\#25s is a separate code for two reasons: many of our sherds seem to be decorated only with reds and we wanted to be able to isolate them for further study; and we encountered some difficulty in separating "red only" fragments fram rouge-de-fer designs (see 263 belnw).

H259 (Overglaze-Decorated - general, undated). This is a general category far sherds which were too fragmentary or too poorly preserved to identify further, or which did not fit into any identifiable gategory.
\#玉GO (Erown-Giaze - usually external, 1720-17g0). Colored monochrome glazes were a standard Chinese decorative technique since early times. © They were not included in this typalogy since these were rarely used on export porcelains.) Hawever, coating the exteriors of vessels with an opague brown glaze became common in the 18th century (Falmer 1976:18).

Feserve panels were sometimes decorated in famille rose colors or underglaze-blues When famille rose colors are used with a brown glaze, the vessels are called "Eatavian ware" since much of it was reputedly shipped from this Dutch settlement (ibig.). Noel Hume says that the brown external glaze is most common in the years 1740-1780, but Falmer illustrates a $1720-1740$ cup and saucer (Woel Hume 1969:260; Falmer 1976:45).
\#261 (Underglaze and Overglaze Decorated, 1700-1780). This code was originally intended to include only the Chinese Imari-style porcelains which date, atcording to Noel Hume, from 1700-1780 (1967:258). The Imari style was developed in Japan and received its name from the port of Imari. It became popular during the circa 1650-1650 disruption of the Chine trade (Whate 1981:27). Underglaze-blue was combined with overglaze-red and gold to create attractive and distinctive designs. The Chinese copied this technique, especially for floral and landscape-floral designs (Falmer 1976:18). fgain, none of the other sources give dates for the start of production of Chinese Imarig so it was decided ta hse Noel Hume's dates. We did not use the beginning date for Japanese Imarig tut it is possible that some of this original Imari reached New York in the 17 th century.

Some underglaze-blus decorated vessels were embeliished with gilding to enhance the decoration or to personalize a standerd design, especially in the late leth and early 19th
centuries. This gilding is frequently lost in the ground, but sometimes hints of it remain on sherds. Even though these sherds are technically under and overglaze-decorated, they should not be classified in this category, which should be reserved for Imari styie, but some may have inadvertently been included.
\#2bs (Rouge de Fer, undated). Rouge-de-fer is an overglaze coloring first used in the 15th century (Palmer 1976:34). It is a bright red usually found in combination with other colors. In the early part of the iBth century, it was often used with underglazeblue and famille verte; during the latter part of the century, the rouge-de-fer palette frequently included gold, black, gray, and hints of familie rose colors (Whate 1981:pers. comm.). Rouge-defer designs in this later periof, generally rococco, were most
common as tea wares.

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#### Abstract

APPENDIX E

\section*{THE CERAMIC SHOP DEPOSIT} by Meta Janowitz and Marie Lorraine Pipes


A ceramic dump located in Lot 27 was sampled with a test pit (AO) and two shovel tests (17 and 22). The deposit was sealed by an overlying brick floor which extended over the foundation wall next to which the deposit had accumulated. The field notes of the excavator (JL) say that "the trash deposit itself was about $50-60 \%$ ceramics in a sand matrix (a small quantity of silt and/or clay was mixed with the sand). Small quantities of bottle glass, bone, and oxidized metal were recovered as well. The ceramics and their matrix were not packed, there were air spaces between some of the sherds. The large size of many of the sherds indicate that they were not subject to extensive trampling and breaking after deposition. The many fresh breaks can be attributed to the passage of heavy euqipment over this area.... Under the deposit was a mortar floor."

The deposit contained 15,582 sherds of undecorated creamware, 227 sherds of decorated creamware, 11,740 sherds of underglaze polychrome handpainted pearlware, 5794 sherds of plain pearlware, 621 sherds of other pearlwares, and 2759 sherds of Chinese export porcelain, making a total of 35,814 sherds.

Almost all of the pottery is unmarked and only two
trademarks were observed: D.D. and Co. (David Dunderdale of Castleford, who was in business from 1790 to 1821); and Herculaneum (established in 1796). There are a dozen Dunderdale marks and only one Herculaneum. All are on plain creamwares.

We believe that this deposit accumulated rapidly and represents a limited number of dumping episodes rather than normal, occasional breakage from a china shop. The reasons for our opinion are as follows: there are sherds which crossmend throughout the deposit, vessel forms and decorations are uniform, matched sets of pearlwares and Chinese porcelain are present, and there is a rather limited number of vessel forms represented overall. The sherds are likely to be the remains of a merchant's disaster of one sort or another. They might have broken in shipment from England or represent some stroke of ill luck that fell upon the shop's inventory. It is also possible that the wares were discarded because they were no longer in fashion and thus unmarketable, but this is unlikely because it would be unusual for a merchant to dispose of outmoded wares by throwing them out rather than by selling them at reduced prices.

## Description of Vessels

The overwhelming majority of the pearlwares are underglaze polychromes handpainted in greens, brown, yellows, oranges, reds and blues, in at least 42 different designs. Underglaze polychrome pearlware was made from 1795 to 1830 and was most popular in the period from 1800 to 1820 , according to Noel Hume
(1969; 1978). The designs used are generally floral or geometric and Noel Hume says that: " these designs also occur in silverlustre resist and ... are most common on pitchers and mugs. Many ceramic historians ungenerously dismiss them as 'peasant' styles, and while it is true that they belonged in village homes rather than in aristocratic town houses, designs, shapes and thinness of potting are frequently all of a high standard" (1978:47). With the exception of some large bowls, the decorations, in our opinion, are not so much "peasant" or "rustic" as neoclassical; they generally show restraint and balance of design. They are certainly no more flamboyant than some decorations found on contemporary European porcelains. The fact that this collection of polychrome pearlwares was found in Lower Manhattan in a fashionable turn of the century shopping district might indicate their use as favored tea and table wares for middle and upper class urban families rather than as the simple crockery of country folk.

The forms which we have been able to reconstruct are almost entirely tea wares and serving vessels. They include handle-less tea cups and matching saucer bowls and deep bowls of at least three sizes. There are also a few large "breakfast size" cups. There are three fluted tea pots decorated in a pattern which is also found on fluted tea cups and saucers, and unfluted cups and saucers. A fourth teapot has a more neoclassical shape and a design which shares elements of several other designs but does not precisely match any.

There are at least six large bowls which could have been used as serving vessels, as fruit bowls, or as small punch bowls. On all of these bowls the exterior designs are similar but the interior designs show great variety. The exteriors have four large motifs separated by scattered leaves or blossoms. The large motifs are stylized peonies, daises or roses. Some of the bowls also have smaller blue or orange flowers surrounding the large ones. The leaves on all the bowls are the same shade of green. Interior central decorations are floral with geometric border designs.

There is only one plate in polychrome. This small vessel has a rather atypical (for this deposit) decoration. Other types of vessels which are represented by only one piece are a large pitcher and a small pitcher or creamer. The design on the large pitcher is similar to those on the large bowls, but the tiny floral design on the small vessel in unlike the rest of the collection.

The designs on the teawares are less flamboyant than those on the large bowls. Tea cups are shaped like small bowls and have no handles. Some tea cups and their accompanying saucer bowls are molded with swirled flutes. Two designs are found on these fluted teawares: a yellow-green floral, which is also found on the fluted teapots, and a simple geometric design in blue and brown. Many of the fluted teawares and some unfluted vessels have marks on the bottom in dark brown which are probably decorators' marks. Since the designs are all hand-painted, they
naturally show individual variations and it is interesting to match up these variations with the different decorator's marks. The same decorator's marks are found with different designs. There are also two saucer bowls with blue hatchmarks along the inside of the footrings, which are probably tally marks of some sort.

Flatwares are rare and all, except for the small plate mentioned above, have blue or green shell edge decoration. One platter has been reconstructed and other sherds appear to represent plates as well as platters. There are only 175 blue edged and 81 green edged sherds. As far as we have been able to determine, there are no plain pearlware vessels of any type. The approximately 5,800 plain sherds almost certainly belong to decorated vessels.

One of the most unusual characteristics of this collection is its relative lack of underglazed blue pearlware - only 279 sherds. All are teawares and most are from only two patterns. Shapes of cups and saucer bowls are the same as those in polychrome. Only nine transfer printed fragments of pearlware were recovered. All are quite fragmentary and are decorated in blue or black. No vessel forms could be determined or petters identified.

Attempts to find information on hand-painted peariware designs and their makers from written sources were unsatisfactory. We were rather surprised to find that little has been written about polychrome pearlwares. Most writers simply
say that a certain manufacturer made polychrome along with underglaze blue and edgewares, but few illustrate these designs and even fewer talk about how important this type of design was in the output of a pottery. Noel Hume's articles noted above have been the most helpful but he only illustrates a few patterns.

The range of forms in creamware is more varied than in pearlware. There are chamber pots, pitchers, basins, bowls of various sizes, plates, handleless tea cups, saucer bowls and at least one tea pot. Most of the vessels are undecorated and most plates have the "royal" style rim. The D.D. \& Co. marks are found only on the bottoms of plates. The quality of the creamwares varies from rather coarse to quite fine.

The most interesting creamwares are the half-dozen pitchers with overglaze transfer printed designs in dark red or black. With one exception, all have ship motifs on one side and sentimental or patriotic motifs on the other. One pitcher in particular shows the last two lines of a poem "Sweet William's Farewell to Black Eyed Susan" by John Gay. The lines are "Her lessening boat unwilling rows to land. Adieu! she cries and waves her lilly hand". John Gay lived from 1685 to 1732 and is best known as the author of "The Beggar's Opera". "Sweet William" was published in 1720 and the use of this poem almost 100 years later is in keeping with early 19 th century sentimentality. On the other pitchers, one ship flies a sixteen star American flag and another sports a Union Jack. One of the
black prints is washed in green and yellow and at least one was highlighted with small additions of yellow/orange. Identical prints are found in black and dark red on different vessels.

The one non-nautical pitcher was unfortunately too faded to see clearly, but close examination in a strong light shows a variety of Masonic symbols: a beehive, points of the compass, death's head, columns, a cross, the sun, etc.

Diana Roussel in her book on the Castleford pottery (1982) says that the creamwares made by David Dunderdale were primarily "useful" wares in which table wares predominated. Not many teawares were made and problably none date before 1800. Pearlwares comprised about $40 \%$ of the total output of the factory and, still according to Roussel, few were handpainted. If this were true, it is unlikely that the polychrome pearlwares from the 7 Hanover Square site are from Dunderdale's factory. However, a 1947 Antiques Magazine article (reprinted in Attebury 1978) dealing with late 18 th century refined earthenwares illustrates (p. 126) a handpainted creamware plate marked D.D. \& Co. whose floral decoration closely resembles some of the floral sprays on the pearlwares in the ceramic dump.

It has been established that Dunderdale was exporting his own and other manufacturers' earthenwares to the United States in the 1790's. Among others, he exported Wedgewood's wares but they were of such poor quality and were so poorly packed that Dunderdale asked Wedgewood for a $15 \%$ discount for breakage.

The Chinese export porcelains in the ceramic dump are all
teawares. Once again there are handleless tea cups and matching saucer bowls. Only four designs are present with five variations of the most common one. The decorations are typical of the end of the 18 th and first years of the 19 th centuries (David Howard, personal communication). Red is the predominant color and the designs can at best be described as sketchy rather than elaborate.

In both pearlware and Chinese export porcelain, the sets of tea cups and saucers have the main decorative motifs on the interiors of saucers and the exteriors of tea cups. There are sometimes simple lines or swags, as well, on the other surface around the rim.

Teapots in redwares of various types are also found: there are 2 engine-turned lead-glazed earthenware teapots and a finebodied red stoneware coffee pot lid (also lead glazed). At least three black glazed bulbous bodied teapots are represented.

In summary, the general picture of this collection is of food storage and preparation, with "sanitary" vessels of creamware and teawares and serving vessels of pearlware, Chinese porcelain and some creamwares. The collection does not represent the complete range of forms and decorations of the period; in particular, there are very few underglaze blue pearlware sherds, and few tablewares.

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Appendix F - Pipe Analysis

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## APPENDIX F

PIPE ANALYSIS
by Diane Dallal

## Introduction

The 7 Hanover Square excavation yielded a total of 9,460 fragments of clay tobacco pipes, representing an extensive collection of primarily 17 th and 18 th century Dutch and English clay tobacco pipes. The majority of pipes were manufactured of ball clay. Exceptions were several fragments of red clay bowls and stems.

A total of 6,429 measurable stem fragments was examined and measured. Table 1 shows a breakdown of the site-wide bore diameter measurements. From this table, it is clear that the 6/64" group contains the largest percentage of pipe stems (40.5\%) with the 7/64" group (33\%), in second place.

The vast majority of bowls and stems recovered were unmarked and undecorated. The 307 individual pipes (constituting $3 \%$ of the total pipe sample) which were marked by individual manufacturers, provided information about trade networks. There was a total of 100 separate and distinctive makers' marks or motifs (not including stem decorations, i.e. Bristol Diamonds, runs of dots, fleur de lys), which revealed that the products of at least six different cities were represented at Hanover Square. These were: Amsterdam, Gouda, Bristol, London, Bremeg, HEMQVERrgodre, and, possibly,

## Table 1

## Total Measurable Bore Diameters

| Bore Diameter | Total \# | \% of Measurable Bores |
| :---: | :---: | :---: |
| $9 / 64^{\prime \prime}$ | 37 | $0.6 \%$ |
| $8 / 64^{\prime \prime}$ | 646 | $10.9 \%$ |
| $7 / 64^{\prime \prime}$ | 2124 | $33.0 \%$ |
| $6 / 64^{\prime \prime}$ | 2606 | $40.5 \%$ |
| $5 / 64^{\prime \prime}$ | 816 | $12.7 \%$ |
| $4 / 64^{\prime \prime}$ | 200 | $3.1 \frac{5}{5}$ |
|  | $-10-1$ |  |

Copenhagen. Five or six countries were also represented: England, the United States, Germany, the Netherlands, and possibly Canada and Denmark. Of the makers' marks, $56 \%$ were Dutch, $38 \%$ English and $6 \%$, other.

It is interesting to note, that when the 7 Hanover Square site sample was compared with that of the stadt House Block, the proportions were almost identical; when compared with the Broad Financial Center, also in lower Manhattan, the percentages were roughly reversed.

Stadt Huys $\quad 7$ Hanover Square $\quad$ Broad Street
Dutch
$60 \%$
56\% $36 \%$

English
$35 \%$
38\%
64\%
Although all pipes from the 7 Hanover Square site were measured and analyzed, budget constraints did not allow for an intensive interpretation of those pipes excavated either from stratigraphically defined contemporaneous units or from separate fill sequences. The pipe data are available, however, and await further study and interpretation.

Clay tobacco pipes are useful temporal indicators of site occupation periods. Clay pipes were easily broken, making their period of utilization fairly short. For the purposes of study, they can be examined in a number of different ways to determine relative date of deposit, name of manufacturer and place of origin. In particular, three factors permit us to use pipes as a dating tool. First, there was a gradual but continuous trend toward the reduction of the size of the bore
diameter through time (Harrington 1984; Binford 1962). Secondly, stylistic and morphological changes occurred which had to do with size, bowl shape and the angle of the stem in relationship to the bowl. Finally, manufacturers identified their products with specific marks which provide archaeologists with key chronological indicators.

Clay tobacco pipemaking formally began in England with the granting of a charter by James I to the Worshipful Company of Pipemakers of Westminster in the city of London in 1619 (Jackson and price 1974). Prohibitions against the importation of tobacco, a monopoly on the import of clay, and strictures against the manufacture of smoking pipes caused the infant pipemaking industry to be concentrated in London.

Removal of these prohibitions later in the 17 th century allowed the growth of manufacturing centers in areas outside of London. Bristol formed its own guild in 1652. The Bristol industry was initiated by English pipemakers who settled there in the 17 th century. By the advent of the 18 th century, Bristol was the primary center of the pipe trade to New York and possibly all of the British Colonies. It has been suggested by Bristol pipe specialists, Jackson and Price (pers. comm., Sept. 1984), that the decline of the Bristol Industry in the late 18 th century was initiated by the loss of the American Colonies, although a resurgence occurred in 1815, when 24,045 boxes of pipes were exported to America after the War of 1812 (Jackson and Price 1974).
"During the late 16 th and early 17 th centuries, waves of English-speaking peoples immigrated to the Netherlands" (Dallal in Grossman, 1985:VII-2). Perhaps the earliest wave had been sent by Elizabeth I to gain "a Protestant foothold on the continent" and to battle against the Spanish occupation of Dutch territories (Duco 1981:371). Ca. 1609, English soldiers belonging to the armies of Prince Maurits, set up business as pipemakers in various towns of the Netherlands (Brongers, 1964). The first pipemaker of record, was an English printer named William Boseman, who "...now maketh tobacco pipes" (Duco 1981:391).

As stated above, the English introduced tobacco smoking to the Netherlands by the end of the l6th century, dominating the Amsterdam industry between 1630-1660. Amsterdam reached its zenith as a pipemaking center in the 1640 s and 1650s. Its success as such may have been due to the interconnection between the city's tobacco trade and its pipe industry, both industries employing an equal number of people (Duco 1981). Because of this relationship, Amsterdam might have maintained an advantage over other Dutch cities which had no tobacco trade.

With the founding of the Gouda Guild in 1660, the Amsterdam industry began its decline. By the third quarter of the 17th century, Gouda pipes dominated the Netherlands, as well as Dutch-occupied sites in the New World.

## DATING PIPESTEMS

In 1954, Dr. J.C. Harrington published his observation that smoke hole diameters consistently changed through time. Harrington noted that older pipes had relatively larger bore holes through their stems than more recent ones which were narrower. After measuring 330 pipe bores from sites with known occupation periods, he applied this gradual reduction of size through time from 1620-1800, to a bar graph expressed in percentages.

Based upon Harrington's research, Lewis R. Binford (1962) devised a straight line "regression formula which could be applied to statistically large enough samples of pipestems to arrive at a single date, theoretically the median figure for the occupation time of the sample" (Dallal in 1985:VII-2). The formula was $Y=1931.85-38.2 x$. $Y$ represents the date, 1931.85, at which the bore diameter theoretically reaches zero, and 38.26 is the slope of the line representing the number of years between each $1 / 64$ " decrease in size. $X$ is the mean bore diameter for the sample to be dated. The equation resulted in a single median figure for the occupation period of the sample under examination (Walker 1971).

Many researchers have noted limitations with the pipestem dating techniques. Audrey Noel-Hume (1963) noted that a minimum of 900 stem fragments was necessary to produce reliable results with the Williamsburg, Virginia collection. She also demonstrated that the Binford formula was unreliable
for dates preceding 1670 and post dating 1760. Stems from more recent sites yield dates which are consistently too early as one progresses towards the 19th century. Walker (1977) explained the phenomenon as the result of an increase in the general variability in pipe manufacture due to an increase in production. Walker explained (1977) that pipe bores could not have continued to contract indefinitely without great difficulty in drawing smoke through the stem. However, Hanson and Hsu (1975) reported that a total of 15 pipestem fragments were excavated at Fort Stanwix with a bore diameter of 3/64", suggesting that narrower bore diameters had indeed been attempted.

Harrington (1954) and Binford (1962) also recognized the limitations of pipestem dating techniques for mixed Dutch and English samples of pipestems. The mean date formula was based upon size variation in English pipes and could not be assumed to be directly applicable to pipes of Dutch manufacture. However, the analysis of the pipe sample from the Broad Street excavation in Manhattan, showed that mean dates calculated from distinct stratigraphic units of 17 th century deposits of mixed Dutch and English pipes correlated well with ceramic and glass terminus post quem. "For archaeologists working with 17 th century sites containing Dutch or mixed Dutch and English pipe remains, the use of Binford or Harrington's statistical methods is not possible without some interpretation and/or modification" (Dallal 1985:VII-5). When
working with the type of mixed material typical of 17 th century deposits of New York state sites, McCashion (pers. comm., Oct., 1984) subtracts ten years from mean dates before 1660 and adds ten years after 1660. He finds this a valid method of dealing with the differences in Dutch and English stem bore diameters.

## DECORATIVE ELEMENTS

Decorated or ornamented pipes can be dated within periods of time during which certain styles were popular and in vogue. During the 17 th century ornamentation was concentrated mainly on the stems. Bristol diamonds, runs of dots, fleur de lys and rouletting were popular 17 th century stem decorations. Pinched stems, occasionally found on New york City sites, were manufactured in both Holland and England. These stems were molded between the fingers while the boring wire was till in the stem, producing a "tortuous effect...possibly deriving from a pattern popular in furniture legs popular in Holland during the 1650s" (Duco 1981:454). Pinched stems were found at both the 7 Hanover Square and Stadt Huys sites in lower Manhattan. Originally pinched stems were thought to be a Dutch phenomenon but at the Broad Street site, one was found on a pipe manufactured by Robert Tipper II of Bristol (16781722) (Dallal 1985).

Elaborately decorated bowls were also popular during this time period. Walter Raleigh or "Jonah" pipes, popular with
sailors, were molded in the shape of a man being spat out by a reptilian creature or crocodile (see below) (Duco 1981). "Orange" pipes depicted Stadtholders, royalty and/or motifs related to the Dutch House of Orange and were also popular during this time period.

During the late 17th and early 18th centuries, Dutch and English pipes seem to have been produced predominantly with only the simple mark of the manufacturer's name of initials on the bowl or heel. Hand-applied rouletting around the bowl rim, popular in the 17 th century, died out ca. 1710 in England (McCashion 1979). although the Dutch continued this motif throughout the $18 t h$ and 19 th centuries, the results were molded imitations, immediately noticeable to the trained eye.

During the second half of the 18th century, elaborately molded bowls which were decorated with heraldic figures, masonic emblems, Royal Arms and Prince of Wales' feathers became popular in England. Heraldic marks were relatively scarce before 1750, came into their fully developed form after that date, and were out of style by 1800 (Atkinson and Oswald 1969). American evidence of armorial pipes is heavily in favor of a post-1750 date.

Decorated, two-piece, relief-molded bowls with scalloped ridges or fluting flourished and predominated in the late 18th through 19th centuries. A wider range of design motifs (including fluting, ribbing, bars and beads, scallops, floral and botanical decorations) proliferated in the 19 th century.

Oswald dated one specific motif commonly found on London, and therefore, American sites--leaf decoration along the mold seams--to between 1790 and 1830 (Walker 1966).

During the 19th century, the previously almost nonexistent American pipe industry burgeoned. Short stubstemmed pipes which needed a reed stem and anthropomorphic pipes became popular.

## Stub-Stemmed Pipes

The earliest known stub-stemmed pipe industry in the United States was that established by Gottfried Aust in 1755 at Bethabara, North Carolina. The stub-stemmed pipe was based upon Turkish models and had Central European origins. A number of stub-stemmed pipes were recovered from the 7 Hanover Square site.

## BOWL MORPHOLOGY

In 1588, William Harrison wrote that "the taking in of the smoke of the Indian herb called Tobacco by an instrument formed like a little ladle...is greatly taken up and used in England" (Oswald 1951:153). The earliest English pipes were based upon the Indian models. These primitive pipes, called fairy bowls," had swollen bellies which contracted slightly at the rim and were attached at an obtuse angle to thick, crudely-made stems. Duco (1981) hypothesized that bowls became larger in the mid-17th century reflecting a reduction in the cost of tobacco as well as a habituation to the effects
of tobacco upon the human body. For nearly 100 years, the wide angle between bowl and stem was maintained. Simultaneously, "the plane of the rim of the bowl, which, if projected, formed an acute angle with the stem in the older pipes, now became parallel with the plane of the stem. This latter change was so noticeable that it is regarded as a valid criterion for pipe dating" (Omwake 1967:1).
F.H. Friederich (1964) evolved a dating method based upon the three morphological elements which changed through time: the height of the bowl, the outer bowl diameter and the widest internal diameter of the mouth of the bowl. Budget constraints prevented us from using this potentially important, but labor intensive, method of dating pipes. In addition, size is not a consistent element in the dating of pipebowls. Early 17th century pipes of exaggerated size have been excavated from 7 Hanover square, the Stadt Huys block and other New York State sites. Only the shape of the pipe has consistently changed through time, establishing this fact as of primary importance in dating clay tobacco pipes.

Bowl shape typologies and dates were based primarily upon Atkinson and Oswald's (1969) 17th-19th century typology for London pipes, Duco's (1981) comprehensive study of 17 th century Dutch pipes, Jackson and Price's (1974) and Iain C. Walker's (1977) studies of the Bristol clay pipe industry.

## MARERS' MARKS

Pipe makers often stamped their products with distinctive marks. These typically consist of the manufacturer's initials and can be traced to specific pipe makers working within a particular time period. Historic records exist in the form of marriage licenses, freedom roles (which give the dates of an apprentice's release from servitude and his entry into independent pipe-making), wills, deeds and parish registers. Unfortunately, the earliest London records have been traded away and/or lost as has been the Registry of Dutch Guild marks for the period of 1660-1720. Fortunately for the archaeologist, Duco in the Netherlands and Jackson and Price in Bristol are conducting and publishing their ongoing research into the early pipe making industry of their respective regions. In addition, archaeological evidence has filled in pertinent and glaring gaps in the pipe record (McCashion 1979); Bradley and DeAngelo 1981; Dallal 1985; Sudbury 1981).

A pipe maker's initials cannot always be assigned to one specific individual. Marks had the status of chattel and were bought, sold, rented or inherited. Widows were permitted to carry on their deceased husband's business and to take new apprentices into their shops. Occasionally, a widow would place her initials alongside those of her husband or son, e.g., Joan Tippet, widow of Robert Tippet $I$ and mother of Robert Tippet II.

Additionally, several generations of a family utilized the same mark and/or had the same name as is evidenced by the three generations of Robert Tippets. To further complicate matters, a mark which had acquired prestige in one period might be re-used by a second or third manufacturer many decades or even centuries later. This is evidenced by TD pipes which span the entire 19 th century and the name of which became synonymous with clay tobacco pipes. They were manufactured by many pipemakers and in many countries. Double marks such as RT and EVANS on the same pipe clearly suggest a partnership. These are found particularly often on early 18th century Bristol pipes.

Three major types of marks were associated with Dutch pipes. Like their contemporary British counterparts, one type consisted of the maker's initials. These were sometimes crowned and sometimes joined together (Omwake 1967). Seventeenth century Dutch marks were often representations of mythological figures (e.g. David with a shield and sword), objects or animals (horn, bell, deer), trades (trowel), facets of everyday life (a milkmaid carrying buckets) and/or comical marks such as Jacob on the dung hill. Numbered marks, both crowned and uncrowned, were also popular. A shield-shaped mark consisting of the Arms of the City of Gouda was established in 1739 to distinguish finer pipes from ordinary ones. In 1740, an additional ruling was established which allowed pipemakers to accompany the Gouda Arms with a letter
"S" (first letter of the Dutch work, "sleight," meaning "ordinary") on both sides of the heëi or bowl.

A raised dot on one or both sides of the heel of some Dutch pipes may have been a "quality control" mark (McCashion 1979), but additional research is needed to determine the validity of this interpretation.
"In addition to elements of style, the placement of the maker's mark has chronological significance" for the archaeologist (Dallal 1985:VII-7). The earliest marks were stamped on the base of the heel. If a pipe was spurred, the mark was placed on both heel and bowl. The placement of the maker's initials shifted to either side of the heel ca. 1670 in London (Oswald 1951). Eighteenth century Bristol pipes are often identified by the distinctive cartouche located on the right side of the bowl and by impressed initials stamped into the back of the pipebow1 (Jackson and Price 1974).

## METHODOLOGY

The pipe collection was analyzed in a standardized manner utilizing the diagnostic attributes of clay pipes: stems, bowls and makers' marks. The pipes from each catalog number and test cut were measured and defined in terms of the fragment's specific characteristics.

As stated above, although pipes generally increased in size until the late 18 th century, size alone is not a secure diagnostic feature. It is not always consistent with
stylistic or other technological and chronological indicators (Oswald 1951). Meäsurements were tàken of the pipes in the Hanover Square collection, however, in order to establish the range of variation present as well as to aid in the dating of specific strata and features and to add to the corpus of knowledge by recording these elements for future groups of researchers. The following measurements were consistently recorded:

1) Bore diameters in 1/64" increments
2) Makers' marks in millimeters
3) Measurements of selected bowls in millimeters
a) height of bowl
c) heel dimensions
b) circumference of bowl
4) Bowl/stem angles of selected pipes (measured with protractor)

The measurement of stem bore diameters was undertaken with the use of a set of drill bits gauged in 1/64" increments, from 4/64" to $10 / 64 "$, the expected size range for stem diameters. As stated above, bowl/stem angles are a valid criterion for dating clay tobacco pipes since the angles of the bowl to the stem changed through time. Decorative motifs were tabulated, since this information is temporally and nationally specific, and therefore helps to date and define deposits.

Fleur de lys types were placed into five specific categories modified from Bradley and DeAngelo's typology (1981), although they are slightly different than those types
described by Bradley and DeAngelo. Type 1 consisted of a single plain fleur de lys mark; typè 2 was a single fleur de lys surrounded by a beaded design; type 3 consisted of a single fleur de lys surrounded by any other design; type 4 was multiple fleur de lys in a linear pattern; type 5 consisted of the 4-in-diamond motif. The fleur de lys stem marks are associated primarily with early-mid 17 th century Dutch pipes. The totals were:

Type $1=6$ Type $2=0$ Type $3=3$ Type $4=3$ Type $5=32$

## HISTORY OF SPECIFIC MARKS

A brief summary of the most common makers' marks excavated at 7 Hanover Square follows. In addition, a unique Walter Raleigh pipe is described.

## EB Pipes

EB pipes were manufactured in Amsterdam by an Englishman from Surrey named Edward Bird (Burt). Documents list Bird as a pipemaker in 1630 (Duco 1981). After his demise in 1655, Bird's son Evert, continued manufacturing pipes, probably using the EB mark.

The quantity of EB pipes on New York sites as well as the high frequency of EB's on Amsterdam sites suggests that Bird was manufacturing pipes for one or more prosperous merchants who exported pipes to areas and countries outside of Holland in general, and Amsterdam in particular.

Seventy eight (78) EB pipes were recovered from the 7

Hanover Square site. This constituted $25 \%$ of the total number of marked pipes. Thée heel mark consisting of the letters EB within a beaded circle ("parelcircel") numbered fifty three $68 \%$ of the total EB pipes. This particular mark was found in strata dating ca. 1650-1664 at Fort Orange, Albany, NY (Huey, pers. comm., May 1985). There were eleven plain EB marks, or $14 \%$ of the total number of EB marks at Hanover Square. These dated ca. 1647-1676 at Fort Orange (ibid). Six crowned EB's, which constituted $7 \%$ of the total EB marks, were also excavated at Hanover Square. Huey did not find crowned EB's at Fort Orange.

The EB mark within concentric circles constituted a total of four, or $5 \%$ of the EB marks. These were dated ca. 165064 by Huey. Three EB's within sunbursts or cogwheels (4\%) were also excavated from Hanover Square as well as one EB with a raised dot between the letters. The sunburst/cogwheel EB mark was dated ca. 1640-47 from contexts at Fort Orange. The dotted model was not listed by Huey (ibid).

## HG Pipes

There were 21 HG pipes excavated at 7 Hanover Square. These constituted $7 \%$ of the total number of pipes with makers' marks. Hendrik Gerdes pipes span the years 1668-88.

Gerdes was originally a baker who married Edward Bird's widow and became a pipemaker in Amsterdam. HG and EB pipes are roughly contemporaneous on New York sites with the HG being slightly later than the EB mark (McCashion, pers. comm.,

April 1982).
For a complete breakdown of Gerdes motifs see the Chart of Marks below.

## WE Pipes

RT marked pipes are probably the most commonly represented pipes excavated from New York City archaeological sites. Manufactured by at least three generations of Robert Tippets of Bristol, they spanned the years 1660-1713 or possibly 1660-1722. In addition, Joan Tippet (ca. 16801700), widow of Robert Tippet I was known to have manufactured clay tobacco pipes with her own mark and subsequently was probably in partnership with her son, Robert Tippet II.

Thirty three RT pipes were excavated from the 7 Hanover Square site. These constituted $11 \%$ of the total number of marked pipes. Additionally, three pipes with the insignia of Joan Tippet were also found.

It is believed that Robert Tippet II was in partnership for a time with Isaac Evans between ca. 1698-1713. Four pipes with both the RT mark and the Evan's Anchor motif were excavated at 7 Hanover Square.

## Walter Raleigh Pipes

Walter Raleigh pipes were manufactured in Holland during the 17 th century. Legend says that they portray Sir walter Raleigh, who fell overboard during one of his voyages, and was swallowed by a crocodile. Evidently, Raleigh's taste was so bitter because of his nicotine habit, that the crocodile spat
him out immediately. It has been theorized that English pipemakers in Hollañ considered Raleigh a hero because of his association with the introduction of tobacco and his subsequent execution by James $I$, an anti-nicotine fanatic.

Another hypothesis for the origins of this delightful pipe states that it represents the biblical tale of Jonah and the whale. Whale fishing began in Holland in the beginning of the 17th century. In Amsterdam, these pipes are found in areas known to have been frequented by sailors (Duco, 1981). Walter Raleigh pipes were in vogue throughout the 17 th century. Their popularity began to wane, however, after 164550 (Duco 1981). There was only one Walter Raleigh or Jonah pipe excavated from the 7 Hanover Square site.

## 7 Hanover Square

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Jackson, R. and R. Price September, 1984

McCashion, John
April, 1982

| Computer Code | Decorative E1ement | Mark | Mark <br> Location | Maker | Place of Manufacture | Date | Reference | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 755 | Type \#1 <br> Fleur de lys | Fleur de lys | stem | unknown | Holland | 17th C. | Bradley \& De Angelo, 1981. | 6 |
| 757 | Type \#3 | Fleur de lys Single <br> surrounded by beaded design | " | " | " | " | " | 3 |
| 758 | Type \#4 | Fleur de lys <br> Multiple in <br> Linear Pattern | " | " | " | " | " | 3 |
| 759 | Type \#5 | Fleur de 1ys <br> Four-in- <br> Diamond | " | " | Holland or England | " | " | 32 |
| 760 | Type \#6 | Fleur de lys <br> Other Multiple <br> Pattern | " | " | Holland | 11 | " | 4 |
| 766 |  | Mu1berry Tree | bow1 | " | England or Holland | $\begin{aligned} & 1670- \\ & 1680 \\ & \hline \end{aligned}$ | McCashion, $1979$ | 7 |
| 769 | Walter Raleigh |  | stem | " | Holland | $\begin{aligned} & 1630-50+ \\ & \text { began to } \\ & \text { diminish } \\ & \text { after } \\ & 1645 / 50 \\ & \hline \end{aligned}$ | $\text { Duco, } 1981$ | 1 |
| 777 |  | Tudor Rose | heel. | 11 | Holland or England | $\begin{gathered} 1628- \\ 1768 \\ \text { \#mid-1ate } \\ \text { 17th C. } \end{gathered}$ | Duco, 1976 Bradley \& De Angelo, 1981 | 5 |
| 778 |  | Gauntlet | heel | * | Gouda | 3rd quar ter 17th Century | Bradley \& De Angelo | 1 |


| Computer Code | Decorative <br> Element | Mark | Mark <br> Location | Maker | Place of Manufacture | Date | Reference | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 779 |  | Orb \& Cross | hee 1 | unknown | Gouda | 1660-80 | Duco, 1981 | 3 |
| 780 |  | Alcantara Cross w/ BI | heel | Bastiaan Janse van Owerwesel | Gouda | $\begin{aligned} & 1686- \\ & 1705 \end{aligned}$ | Duco, 1981 | 5 |
| 781 |  | Mi1kmaid | bowl | Spaarnay? | Gouda | $\begin{aligned} & \text { 19th C. } \\ & \text { to } 1898 \\ & \hline \end{aligned}$ | Duco, 1976 | 1 |
| 782 | "Quality control" dots |  | either side of heel | unknown | Holland Amsterdam? | 1th C. | McCashion, $1979$ | 16 |
| 783 |  | Rad/Wiel (wheel) | bowl | " | Gouda | $\begin{aligned} & \text { pre-1724- } \\ & 1759 \\ & \hline \end{aligned}$ | Duco,1978 | 2 |
| 784 |  | Trumpet | heel | " | " | $\begin{aligned} & 1660- \\ & 1685 \\ & \hline \end{aligned}$ | Duco, 1981 | 5 |
| 785 | . | "Man en Vríuw" <br> (Two Figures) | bowl | " | " | $\begin{aligned} & \text { 3rd } \\ & \text { quarter } \\ & 17 \text { th C. } \end{aligned}$ | Bradley \& De Angelo, 1981 | 1 |
| 786 |  | "G1aasje" <br> (goblet) | heel | " | " | $\begin{aligned} & 1667- \\ & 1693 \end{aligned}$ | McCashion, pers. comm. Oct. 1982 | 1 |
| 791 | Two Shields | Arms of the City of Gouda | either side of heel | " | " | post | Duco, 1976 | 1 |
| 795 | $\begin{aligned} & \text { Ribbed/ } \\ & \text { Molded } \\ & \hline \end{aligned}$ |  | bow1 | " | unknown | 19th C. | Sudbury, 1979 | 18 |
| 796 |  | Woman with Churn | heel | " | Gouda | $\begin{aligned} & 1660- \\ & 1700 \\ & \hline \end{aligned}$ | pers. observ. (Dalla1) | 1 |
| 797 |  | Bird | heel | " | Gouda | 1670-90 | Ducer 1981 | 3 |


| $\underset{\quad}{\substack{\text { Computer } \\ \#}}$ | Decorative <br> Element | Mark | Mark <br> Location | Maker | Place of Manufacture | Date | Reference | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 800 |  | David with Shield and Sword | hee1 | unknown | Gouda | $1675+$ | Duco, 1976 | 1 |
| $\begin{aligned} & 802 \\ & (\text { see } 914) \end{aligned}$ | Stars | 13 star patriotic | bow1 | unknown (TD pipe) | U.S.A. | $\begin{aligned} & 1845- \\ & 1875 \\ & \hline \end{aligned}$ | Andersen, 1982 | 1 |
| 825 |  | EB (plain) | heel | Edward Bird | Amsterdam | 1630-83 | McCashion, 1979 | 11 |
| 826 |  | EB (in beaded circle) | hee1 | Edward Bird | Amsterdam | 1630-83 | McCashion, 1979 | 53 |
| 827 |  | EB (in cog whee 1 or sun burst) | " | " | " | " | " | 3 |
| 828 |  | EB with crown | " | " | " | " | " | 6 |
| 829 |  | EB with Dot | " | " | " | " | " | 1 |
| 831 |  | L | bow1 | prob. <br> Lluellin <br> Evans | Bristol | 1661-89 | Walker, 1977 | 1 |
| 832 |  | LE | " | " | " | " | " | 5 |
| 833 | Bristol <br> Diamonds | LE | stem | " | " | " | Alexander, 1979 | 4 |
| 834 |  | WE | stem | William <br> Evans I or | $\begin{array}{r} " 1 \\ \hline \text { II } \\ \hline \end{array}$ | $\begin{aligned} & 1660- \\ & 1700 \\ & \hline \end{aligned}$ | Walker, 1977 | 19 |
| 835 |  | WE | bow1 | " | Bristol | " | " | 10 |
| 836 |  | W or E | bowl | " | " | " | " | 1 |
| 838 |  | PE | heel | Phillip <br> Edwards I | Bristol | $\begin{aligned} & 1649 ; \text { f1. } \\ & 1668 / 9 ; \\ & \text { dead by } \\ & 1683 \end{aligned}$ | Walker, 1977 | 1 |


| $\begin{gathered} \text { Computer Code } \\ \# \\ \hline \end{gathered}$ | Decorative <br> Element | Mark | Mark <br> Location | Maker | Place of Manufacture | Date | Reference | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 839 |  | HG | heel | Hendrik <br> Gerdes | Ansterdam | 1668-88 | McCashion, 1979 | 6 |
| 840 |  | HG in double concentric circles | heel. | " | " | " | " | 5 |
| 841 |  | HG with crown | " | " | " | " | " | 2 |
| 842 |  | HG with beaded circle | " | " | " | " | " | 2 |
| 843 |  | HG w/ crown \& dot above and/or below letters | " | " | " | " | " | 3 |
| 844 |  | GOUDA | stem | Spaarnay? | Gouda | 19th C. | Laansma, 1960 | 2 |
| 845 |  | IB | either side of hee1 | unknown | London | 18th C. | Dallal, pers. observ. | 1 |
| 847 |  | CH | bow1 | Charles <br> Hickes | Bristol | $\begin{aligned} & 1721 / 22 ; \\ & \text { f1. } 1740 ; \\ & \text { dead } 1747 \end{aligned}$ | Wa1ker, 1977 | 2 |
| 848 |  | Evans Anchor | bow1 | Isaac Evans | Bristol | $\begin{aligned} & \text { 1698; f1، } \\ & 1700-13+ \end{aligned}$ | Walker, 1977 | 1 |
| 849 |  | IH | either side of heel | unknown | London | 18th C. | Atkinson \& Oswald, 1969 | 4 |
| 852 |  | HI | ei.ther <br> side of heel | unknown | London | 18th C. | " | 1 |
| 853 |  | II | either side of heel | James <br> Jenkins | Bristol | 1707-38+ | $\begin{aligned} & \text { Jackson \& Price, } \\ & 1974 \end{aligned}$ | 1 |


| $\begin{gathered} \text { Computer Code } \\ \quad \# \\ \hline \end{gathered}$ | Decorative <br> Element | Mark | $\begin{aligned} & \text { Mark } \\ & \text { Location } \end{aligned}$ | Maker | Place of Manufacture | Date | Reference | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 854 |  | AI | heel | unknown | Amsterdam | 1636 | Duco, 1976 | 3 |
|  |  |  | either side of heel \& crowned |  | London | 1700-40 | Marx, 1968 |  |
| 856 |  | WE in beaded cartouche w/ <br> fleur de lys | bow1 | William <br> Evans I or II | Bristol | $\begin{aligned} & 1660-\mathrm{ca} . \\ & 1700 \end{aligned}$ | Jackson \& Price, 1974 | 1 |
| 857 |  | WE floral design \& rouletted cartouche | bow1 | " | " | " | Walker, 1977 | 8 |
| 858 |  | IM | heel | Jan Muur | Amsterdam | $\begin{aligned} & \text { 1630-mid } \\ & \text { 17th C. } \\ & \hline \end{aligned}$ | Bradley \& DeAngelo, 1981 | 1 |
| 859 |  | J | bow1 | unknown | Bristol | 18th C. | Dalla1, pers. observ. | 1 |
| 861 |  | то | bow1 | Thomas Owens | Bristol | $\begin{gathered} 1668- \\ 1725 \\ \hline \end{gathered}$ | McCashion, 1979 | 2 |
| 862 |  | CDP | heel | Cornelus Dircxzn. Peck | Gouda | 1667-79 | Duco, 1981 | 6 |
| 863 |  | WN with flower above name in cartouche | bow1 | William <br> Naylor <br> Wilīam <br> Nicholas | $\begin{aligned} & \text { Bristol } \\ & \overline{\mathrm{Br}} \overline{\mathrm{i} s t} \overline{\mathrm{l}} \overline{\mathrm{I}} \end{aligned}$ | $\begin{aligned} & 1722-39+ \\ & \overline{1} 7 \overline{3} \overline{-}-7 \overline{5} \end{aligned}$ | Walker, 1977 <br> Walker, $\overline{19} \overline{7} 7$ | 1 |
| 865 |  | ER | bow1 | Edward <br> Reed <br> Edward <br> Randa11 | Bristol <br> $\overline{\text { Bristan }}$ | $\begin{aligned} & 1706-34+ \\ & \overline{1} 6 \overline{6} 8-9 \overline{9}+ \end{aligned}$ | Walker, 1977 <br> Wā̄ker, $\overline{19} 97{ }^{-1}$ | 1 |
| 866 |  | ---OL 8 | stem | unknown | Bristol | 19th C. | McCashion, pers. comm., 1982 | 1 |


| Computer Code | Decorative <br> Element | Mark | Mark <br> Location | Maker | Place of Manufacture | Date | Reference | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 867 |  | HS in beaded circle | heel | Hendrik <br> Stevensen <br> Hendrik <br> Smit | Gouda <br> Gounda | $\begin{aligned} & 1662- \\ & \frac{1702}{\text { ca. }} \overline{1} 636 \end{aligned}$ | $\begin{aligned} & \text { Duco, } 1981 \\ & \overline{\text { Duco }} \overline{1} \overline{19} \overline{8} 1- \end{aligned}$ | 1 |
| 868 |  | \$ | bow1 | unknown | Eng1and | 1680-1710 | Bradley \& De Angelo, 1981 | 1 |
|  |  |  |  | Samuel <br> Burton | Copenhagen | 1748 | Ahlefeldt- <br> Laurvig, 1981 |  |
| 869 |  | WS | heel | Walter Smith | Amsterdam | 1640-50's | McCashion, pers. comm., 1982 | 1 |
| 870 |  | WE | upside down on bowl | William <br> Evans I or II | Bristol | $\begin{aligned} & 1660- \\ & 1700 \end{aligned}$ | Jackson \& Price, 1974 | 1 |
| 871 | $\begin{aligned} & \text { initia1s } \\ & \text { only. } \\ & \hline \end{aligned}$ | RT | Bow1 | Robert Tippet | Bristol | 1660-1713 | +Walker, 1977 | 9 |
| 872 |  | R/TIP/PET <br> in cartouche | bow1 | Robert <br> Tippet | " | " | " | 1 |
| 873 |  | R or T | bowl | " | " | " | " | 9 |
| 874 |  | BS in beaded circle | hee1 | unknown | Holland | $\begin{aligned} & \text { mid-1ate } \\ & \text { 17th C. } \end{aligned}$ | Dallal, pers. observ. | 1 |
| 876 |  | Tippet frag, w/ indeterminate spelling | bow1 | Robert <br> Tippet | Bristol | 1660-1713 | Walker, 1977 | 3 |
| 878 |  | RT on back; R/TIPP/ET in cartouche | bow1 | " | " | " | " | 2 |
| 879 |  | R/TIPP/ET in cartouche | " | " | " | " | " | 2 |


| $\underset{\#}{\text { Computer Code }}$ | Decorative <br> Element | Mark | Mark <br> Location | Maker | Place of Manufacture | Date | Reference | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 881 |  | RT mark on back of bowl w/ Evans' Anchor Cartouche on r. side | bowl | Isaac <br>  <br> Robert <br> Tippet II | Bristol | 1698-1713 | Walker, 1977 | 1 |
| 882 |  | RT w/ EVANS | bow1 | " | " | " | " | 2 |
| 883 |  | RT w/ illegible cartouche | " | Robert <br> Tippet | " | 1660-1713 | Wa1ker, 1977 | 3 |
| 885 |  | I/TIP/PET in cartouche | " | Joan Ti.ppet | " | 1680-96 | " | 1 |
| 886 |  | I-R/TIP/ET in cartouche w/ RT on back of bow1. | " | " | " | " | " | 1 |
| 887 |  | LE w/ floral design | " | Lue11in Evans | " | 1661-84 | " | 1 |
| 888 |  | --R/TIP/PET | " | Joan <br> Tippet | " | 1680-96 | " | 1 |
| 889 |  | $\begin{aligned} & \text { _-_-S. SP-RNAA- } \\ & \text {-OUDA } \\ & \text { HOLL-- } \end{aligned}$ | stem | Spaarnay | Gouda | 19th C. | Laansma, 1960 | 1 |
| 890 |  | HG w/ crown \& dot | heel | Hendrik <br> Gerdes | Ansterdam | 1668-88 | McCashion, 1979 | 1 |
| 891 |  | IAB | heel | unknown | Gouda | 17 th C. | Duco, 1981 | 2 |
| 892 |  | Empty Cartouche | bow1 | unknown | Bristol | 18 th C. | Dallal, pers, ob | v. 1 |
| 893 |  | WG | either <br> side of hee1. | " | unknown | $\begin{aligned} & 1775- \\ & 1830 \end{aligned}$ | Reid, 1976 | 1 |


| $\begin{gathered} \text { Computer Code } \\ \# \\ \hline \end{gathered}$ | Decorative <br> Element | Mark | Mark <br> Location | Maker | Place of Manufacture | Date | Reference | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 894 |  | WG w/crown | either <br> side of heel | unknown | London | 18th C. | Atkinson \& Oswa1d, 1969 | 2 |
| 895 |  | IW | heel | John or Jane Wall | Bristol | $\begin{aligned} & 1630 / 1- \\ & 1660 \\ & \hline \end{aligned}$ | Walker, 1977 | 6 |
| 896 |  | TW | bow1 | Thomas Watts | Bristol | $\begin{aligned} & 1675- \\ & 1717+ \end{aligned}$ | $\begin{aligned} & \text { Jackson \& Price, } \\ & 1974 \end{aligned}$ | 1 |
| 897 |  | IDW | hee1 | Joris de Wi.th <br> Jan $\bar{D} i \bar{r} \bar{x} \bar{s}$. Wanda | Gouda Gouda | $\begin{aligned} & 1640-70 \\ & \overline{16} \overline{9} 3-1 \overline{7} 05 \end{aligned}$ | $\begin{aligned} & \text { Duco, } 1981 \\ & \text { Duco }^{-19} \overline{1} \overline{1}- \end{aligned}$ | 1 |
| 898 |  | WTW | heel | unknown | Holland or England | 1650-60 | McCashion, 1979 | 1 |
| 900 |  | $\mathrm{RC/PW}$ | bow1 | unknown | Bristol | 1690-1710 | McCashion, 1979 | 1 |
| 902 | quality <br> control <br> dots | DV crowned or VD | heel | Dirck Volckertsz. | Gouda | 1648-70 | Duco, 1981 | 1 |
| 904 |  | VC or UC | bow 3 | unknowr | Bristol | ca. 1750 | McCashion, pers. comm., 1982 | 1 |
| 906 |  | TD | either side of heel | unknown | unknown | common in 18th \& 19th Centuries | $\begin{aligned} & \text { Walker, } 1983 \\ & \text { th } \end{aligned}$ | 2 |
| 907 |  | IW | heel | unknown | Amsterdam | 3rd quarte 17th C. | er. Bradley \& De Angelo, 1981 | 2 |
| 908 |  | IC | bow1 | Israel or John Carey | Bristol | 1757-1815+ | $\begin{aligned} & \text { + Jackson \& Price, } \\ & 1974 \\ & \hline \end{aligned}$ | 1 |
| 910 |  | DUBLIN w/ <br> shamrock | bowl | unknown | Germany | ca. 1918 | McCashion, pers. comm., 1982 | 1 |
| 911 |  | $\begin{aligned} & \text { IR/TIP/ET } \\ & \text { with TP } \end{aligned}$ | bow1 | Joan Tippet | Bristol | $\begin{aligned} & 1682- \\ & \text { ca. } 1710 \end{aligned}$ | Walker, 1971 | 1 |


| $\begin{gathered} \text { Computer Code } \\ \# \end{gathered}$ | Decorative <br> Element | Mark | Mark <br> Location | Maker | Place of Manufacture | Date | Reference T | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 914 | 13 star patriotic | TD in 13 stars | bow1 | unknown | U.S.A. | 1845-75 | $\begin{aligned} & \text { Anderson, } \\ & 1982 \\ & \hline \end{aligned}$ | 2 |
| 915 |  | WH | base of bowl | Willem Hendricxzn Amsterdam Heptenstal <br> (Willem Hendriks) |  | 1644-73 | Duco, 1981 | 2 |
| 919 |  | WW | bow1 | $\begin{aligned} & \text { William } \\ & \text { Williams } \\ & \hline \end{aligned}$ | Bristol | 1661-1685+ | Walker, 1977 | 1 |
| 920 |  | WE in cartouche <br> w/ fleur de $1 \mathrm{ys}$ | bowl | William Evans I or II | " | $\begin{aligned} & 1660-\mathrm{ca} . \\ & 1700 \end{aligned}$ |  <br> Price, 1974 | 2 |
| 922 |  | crowned posthorn | heel | unknown | Gouda | $\begin{aligned} & \text { mid-late } \\ & \text { 17th C. } \\ & \hline \end{aligned}$ | Duco, 1976 | 1 |
| 923 |  | HG w/ crown \& dot in beaded circle | heel | Hendrik Gerdes | Amsterdam | 1668-88 | McCashion, 1979 | 22 |
| 924 |  | EB in concentric heel circles |  | Edward Bird | Amsterdam | 1630-83 | McCashion,1979 | 4 |
| $925:$ <br> (others) |  | NY 34th St. | stem | American Clay Tobacco Pipeworks | New York City | 19th C. | McCashion, pers. comm., 1982 | 1 |
|  |  | Verzy/Gouda | stem | unknown | Gouda | 19th C. | " | 1 |
|  |  | Evans * | bow1 | Isaac Evans | Bristol | 1698-1713 | Walker, 1977 | 1 |
|  |  | BC | heel | unknown | Amsterdam | pre-1650 |  <br> De Angelo, 1981 | 1 |
|  |  | AIO | heel | Andries Jackobsz. | Amsterdam | ca. 1686 | McCashion, 19791 |  |
|  |  | Heye/Bremen | bow1 | Heye | Bremen | 19th C. | McCashion, pers. comm 1982 | 1. |


| $\begin{gathered} \text { Computer Code } \\ \# \\ \hline \end{gathered}$ | Decorative <br> Element | Mark | Mark <br> Location | Maker | Place of Manufacture | Date | Reference | Totad |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { 925: } \\ & \text { (others) } \end{aligned}$ |  | LW | bow1 | Lewis <br> Williams ? | Bristol | ca. 1662 | Walker, 1977 | 1 |

## ARTIFACI_CLASSIFICATION_SYSTEM <br> by Nancy Stehling

In order to create a database comparable with one already in use, and to allow for future comparative studies, the tabulation system for the 7 Hanover Square collection was based on Stanley South's Artifact Classes and Groups (South 1977). This system is composed of nine groups broken down into 42 separate classes. The classes are based on form and sometimes function. "The groups are based on functional activities related to the systemic context reflected by the artifactual record" (South 1977:93). It has been recognized by South that a partirular artifact class is potentially part of more than one functional group. The system is organized so as to allow Expansion should it become necessary for site-specific research and analytical issues to be addressed. The nine groups will be discussed belaw.

The Hanover Square artifacts fexcept for faunal and floral materiais), were initially classified during the tabulation phase to reflect their temporal sensitivity. Artifacts were defined as either "diagnostic" or "non-diagnostic". Diagnostic artifacts, which are more temporally sensitive, include but are not iimited to ceramics, giass, clay pipes and coins. Non-diagnostic artifacts were primarily construction/hardware related.

A11 artifacts recovered during excavation were tabulated using an established format based on South's Classification System. Entries were hand written, and later computer coded. All artifacts were counted and several classes were weighed as well: Weights in grams were computed using 0 Haus triple beam balance scales. Measurements were taken in both English and Metric units wherever appropriate.

## THE ARTIFACT GROUFS

The_Kitchen_Grgup: This group contains classes of artifacts centered primarily on the storage, preparation, and service of food. Ceramics, container glass, glass tableware, tableware such as cutiery, and kitchenware (such as kettles, pots and pans) are included in this groups Cutlery and kitchenware were fairly well represented in the collection from Hanover Square. Fortions of eight cocking vessels were recovered, including an iron and copper pot or porringer from Test Cut D. A total of 16 utensil handles were recovered including a bone and iron knife handle fram Test Cut $x$ and a silver-plated copper alloy spoon from Test Cut Ak. Fortions of two other cutlery handles were also identified.

The Bone groue: This group consists of faunal remains. Initial tabulation separated shell from bone and then mammal versus bird bones from fish scales and bones, and further identified cut versus sawed and fractured ones whore possible. Eggshells were also identified. Eone identification on the species level requires specialized analysis and was subsequently completed by faunal analysts under a separate grant.

Shells were identified, counted, and weighed during tabulation. Cut shells, which may relate to wampum manufacture; were noted, and of those recorded, almost all were hard shell clam. Molluscs recovered were oyster, scallop, mussel, hard shell clam, soft shell clam, surf clam, limpet, cockle, and ark shell. Gastropods identified included smail, whelk, and oyster drill. Jingle, slipper barnacles, conch and worm shells were present. Crustaceans identified include lobster and crab. Large quantities of coral were recovered from particular areas of the site. its origin was probably ship's ballast.

## The_Architecturel_Grqup: This group was divided into six

classes: building materials; other construction hardware,
miscellaneous construction materials, stone, non-domestic tile, and 20th century debris. Building materials were further divided as follows: Glass: window, plate, reinforced safety, or "other": Nails: square cut, wrought, wire, or "other"; Erick: red, yellow, buff fire brick (boxtile); or pantiles. Other construction hardware included: window cames, doorknobs, spikes, nuts, bolts, screw, tacks, hinges, door lock, and "unidentifiable". Miscellaneaus construction materials were: mortar, plaster, cement, concrete, coal, roofing slate, charcaal, slag, cinder, wood, wire, linoleum, tar, macadam, and "unidentifiable metal". Stone was identified as cut, cut and polished, or "other". Tile was identified as sewer pipe, bathroom fixture, or floor tile. Twentieth century debris contained a wide
variety of artifacts from plastic to styrofoam to aluminum can flip-tops. Construction material artifacts were weighed as well as counted. 0 Haus gram scales were utilized during tabulation. Ericks were tabulated as fragments versus whole for all types. Whole bricks and other measurable artifacts were described using both English and Metric systems. Examples of all of the above mentioned artifact types were recovered from the 7 Hanover Square Elock in every lot of the excavation.

As a result of the existence and destruction of $19 t h$ and zoth century buildings on the block, enormous quantities of certain materials were present. These categories of artifacts were sampled in the field, then weighed and discarded during fieldwark. Sampled artifacts included red brick, mortar, concrete, coal, macadam, stone, and slate. The weights taken in the field were incorporated with those tabulated in the lab.

The_Furniture Group: The group contained recognizable furniture hardware such as hinges, loeks, handles, drawer pulls, escutcheon plates and keyhole surfounds. A very low percentage of artifacts recovered could be attributed to this group. Three furniture-related Parts were identified from Hanover Square. A copper alloy hinge was found in Test Cut $Z$, another from SHovel Test 20 ; and a copper alloy doorknob was recovered from Test Cut $L$. Five copper alloy furniture tacks were also identified.

The_Arms_Groug: This group contained musket balls, lead shot, gunflints, gunflint spalls, bullets, cartridge cases, bullet molds
and gun parts. A musketball and cennonball (both from Test Cut G) were recovered from the site as well as 261 gunflints. Of these, a cache of 245 flints was found in Test Cut $Z$ on a mortar floor (see Chapter Six).

The_드으느ng_Groug: This group consists of artifacts associated with the making of, wearing of, and repair of clothing. Euckles, thimbles, buttons (based on South's typology, see Noel Hume 1976:91), scissors, pins, hook and eye fasteners, bale seals and glass beads. Many tlothing related artifacts were recovered across the site. The most common clothing artifacts were buttons, 31 of which were identified. Buttons of several types were present: 9 were made of wood, 28 of metal (mostly copper alloys), eight were mother of pearl or shell, 26 were bone, two were fabric-covered, two were glass and one was ceramic. Where possible, dates were assigned based on South's typology. Other clothing fasteners such as hooks and eyes were identified from Test Cuts $A, K, V, Y, A D$, and AF. Many beads were recovered from across the site. Bone, shell, synthetic, and glass beads were identified. Six buckles were identified from the site. Copper buckles were identified from Test Cuts $L$ and $Y$, copper and iron from Test Cut 0 , an iron buckle was identified from Test Cut AF , and three copper buckles were noted as stray finds.

Artifacts related to clothing manufacture and repair were also plentiful. A needle was recavered from Test Cut A. Four thimbles were identified from Test Cuts $D, F, X$, and $Z .34$ iron and copper alloy straight pins were recovered from Test Cuts D, F, G, L, N, D, Y, and AF. A pair of scissors was identified from Test Cut Y. A bale seal
from a bolt of cloth (probably wool; Noel Hume 1976) was identified from Test Cut $Z$. Textiles were also recovered. Twenty-six fragments of fatric, nine leather shoes, two leather shoe blanks, and almost 700 scraps of leathe have been identified.

The Personal Groue: This group was comprised of the artifact classes of coins, keys; and "personal items". Fersonal items included wig curlers, brushes, combs, mirrors, jewelry, watch parts, fan parts, slate pencils, eyeglasses, etc. P Personal items were found across the site, although in a lower percentage than some of the other graups. Fortions of 11 combs and 11 brush mandles were tabulated. Two wig cuflers were found in Test Cuts 0 and AJ. Jewelry was also recovered from the excavation. A finger ring and a key chain were found in Test Cut $G$, and an additional ring was found in Test Cut Y. keys were recovered from Test Cuts $\boldsymbol{H}$ and $Y$. Many fragments (95) of glass pocket flashes were found on the site. Writing implements were also recovered. Thirty-one slate pencils were identified, and a lead pencil was found in Test Cut G. A variety of coins were recovered from the site. Twelve coins were identified, three with visible printing. A Liberty Head United States one cent piece was identified from Test Cut AA, dated 1845. A British George II half penny (1727-1760) was found in Test Cut AE. In Lot $1 \Xi$ a Liberty Head nickel dated $18 B .3-1912$ was identified. The remainder of the coins excavated were not legible.

The_Tobaccog_Pieg_Groug: This group consisted of only one class of artifacts, those related to tobacco smoking. Nearly 10,000 stems andfor pipe bowl parts were recovered. They are described in Appendix F.

The_Activitiges_Groug: This group was by far the most diverse group of artifact classes tabulated from the 7 Hanover Square collection. Artifact classes included construction tools; farm tools; toys such as marbles and doll parts; fishing gear and tackle; storage items (non-kitchen), such as barrels; floral remains such as nuts, seeds, and husks; horse tack and related stable hardware; miscellaneous hardware; specialized activities hardware such as kiln wasters; printing artifacts; and military objects such as sword parts, insignia, and bayonet parts.

The activities group was well represented in the Stadt Huys collection. Many toys were recovered from the excavation. Forty-eight marbles, 42 of which were stoneware, were identified. Two die (or domino faces) were recovered as well as 18 other gaming pieces. Sixteen additional toys such as doll parts were also found. Much miscellaneous hardware not possible to identify, except as construction-related, was excavated. These items include an iron strap with hinge from Test Cut 5, a copper alloy gear from Test Cut $A M$, and an iron crank handle from Test Cut $Z$. Many artifacts that may belong to this category could only be identified as to material. These objects were coded under Miscellaneous Hardware and include over a thousand metal objects, cut stone, and wood.

The macrofloral remains were identified, counted, and weighed during the tabulation. The system for tabulation was organized on the botanical family level. Multiple listings indicate that fragments could not be further identified. The family Cucurbitaceae included squash/pumpkin/cucumber/watermelon and cantaloupe. The family Fagaceae included oak acorn, chestnut, cork wood, beech nut, hazel nut, and Erazil nut. The family Juglandaceae included walnut, black walnut/butternut, hickory nut, and pecan. The family Leguminoseae included peanut and pea. the family oleaceae contained olive pits. The family Falmae included coconut hust and date pits. The family Rosaceae included apricot/plum/prune pit, pear pit, peach/nectarine pit, cherry/beach plum pit, apple seeds, and almond. The family Rutaceae included orange/tangerine/grapefruit/tangelo pit and lemon/lime pits. The family Finaceae included pine cone, pine needle, and pine bark. The family Ulmacae included hackberry. A final category, "other floral", included leaves, bark, twigs, and straw. Seaweed was given its own category. Macrofloral remains of the Hanover Square block were primarily identified from the cucurbitaceae; rosaceae and rutaceae families. Eighteen aboriginal artifacts were also recovered from the excavation, including flalses, bifaces, and a projectile point. Most of these artifacts were found in Test Cuts $D$ and $F$.

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## METHOD AND THEDRY IN

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THE GLASS CODING SYSTEM
by Meta F. Janowitz

In generals the glass classification system was based on rategories that are more descriptive and less useful for dating purposes than the ceramic codes. There are sayeral reasons for this: fewer published sources for dating glass were available to us, these sources often disagreteq and a large part of the most temporally significant changes in glass tonhnology and use gcourred in the 19 th and eariy 2oth centuriem. Since few 19 th or $20 t h$ century contents were excavated at gither site; it wes derided to devate relatively more of the research time ayailable to ceramics rather than to giass. However, the glass fragments were described as fully as possible on the tabulation sheets and dates or date ranges were assigned whenever possible.

As was the case with ceramiss, glass artifacts were initially tainlated in narrative, degrriptive form. After the roding system was rieveloped, 1 aboratory analysts toot the 1 onghand sheets and assigned the proper code to the glass sherdsa The Eades were then entered into the computer. Informaiion about solor or size or detail of finishes was not included in the computer codes but these characteristics are included on the tabulation sheets.

The most frequently used computer codes are the general, undated ones. Any specific dating information (embossed names on bottles, bottle seals, particular shapes, and mold seams, etc.) can also be found on the tabulation sheets. The computer printouts show the formffunction code and the number of fragments in each category. The computer printouts also list all glass pieces for which precise dates are available. The codes for specific bottle forms (i.e. wine/liquor, vial, etc) were assigned when enough of the bottle was present to determine form. Except for the glass from the Lovelace Tavern, crossmending was not generally attempted, but when it was obvious during tabulation that flain pieces came from the same bottle as pieces whose form or decoration could be determined, the plain pieces were assigned a more specific code.

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Nine dated and three undated codes were used. The dated codes were based on the characteristics of overall shape, type of finish, and presence/absence and location of mold seams as shown in Mrkearin and Wilson (1978:187ff.s20Gff). Information about Dutch bottles was supplied by Richard Ryan of the Nassau County Museum (Ryan 1980: personal communication). The dated codes are \# 308 ( $1630-1685$, apple/onion), \#304 (1680-1730, apple/onion), \#305 (1739-1760, bell shape), \#306 (1740-1790, tall bell shape), \#307 (1780-1910/1830, usually dip molded), \#308 (1900-1840/1850, full size mold), \#So9 (post-1840/1850, specialized lipping tool), and \#ふ11 (post-1921, Ficketts ring ) . Code $\# 310$ (post-1日io, undated mold made) was used for bottles whose precise shape could not be determined but which
had mold seams. Since these codes were developedg Ioseph Diamond has pointed out that wine/liquar bottles were sometimes made in dip molds as early as 1760 (1983: personal rommunication).

The undated winefliquor codes were \#bb (base only - sand pontil), \# 067 ibase only - glass-tipped pontil), and \#6sG (undated other). The distinction between sand and glass-tipped pontils was included in the coding system based on Jones (1771). She writes that glass-tipped pontils wore used on dark green English tradition wine bottles before 1720; after this time sand pontils were the only ones used (1971:68). However, we did not use the presence of glass-tipped pontils on dark green wine bottles as a definite indication of a pre-172G date because of the as yet untmown influence of the Dutch on glass importation and manufacture in New York. Description of other types of pontil or push-up marks are on the hand tabulated sheets.


For most of the codes, 1800 was used as a rough starting date for mold-made forms. Mald-made bottles of all types did became much more common in the first quarter of the 19 th century than they had been before, but buttles had been made in molds before this: dip molds for fashioning general body shapes and more elaborate mol ds for enbossing bottles are known from the 17 th and $18 t h$ centuries (Mckearin and wilson
 date is a general temporal indicator rather than a firm terminus eost gㅡㅡㄹㅡ. Fatent proprietary and mineral soda bottles which were mold-made were assigned a gengral starting date of 1750 , because the above
sources illustrate pre-i9th century mold made bottles in these forms. Based on these sources, and Eaugher (1982) and Jones (1981), it seems that these botitles became fairly common after 1750. Again, however, this date should not. be given the weight of a terminuse post or ante 그느릉․

Code $\% \mathbf{3} 12$ was assigned to Fatent/proprietary bottles, plain with pontil; \#ふ13 to Fatent/proprietary, plain without pontil; and \#ふit and \#517 desaribe the same characteristics for Mineral/soda bottles. Code \#314 and \#315 are for decorated Fatent/proprietary bottles, with and without pontils: while \#Sig and \#Si7 are decorated Mineral/soda bottles with and without pontils. Codes \#671 and \#672 are Fatent/proprietary botiles, base unknown; plain and decoratedy while codes \#b73 and \#674 are Mineral/soda bottless base unknown, plain and decorated.

The snap-case, which eliminated the need for holding the bottle with a pontil rod or blawpipe, was patented in 1857 (Lorraine 1968: 44; Mckearin and Wilson 1978:14). Ey the 1870s, the snap case had generally replaced pontils (Baugher 1982:267, Jones 1971:72). When a code is 1 isted as "decorated," it signifies embossed decoration which was part of the mold.
"Other utilitarian bottles" refers to "utilitarian containers used for many and diverse contents" (Mckearin and Wilson 1978:246). They were both mold made and free-hiown and are found in various colors (ibid.). The mold-made codes (\#320 and \#321) were dated post-1800, but it is probable that molds were being used for at least some of these bottles during the $18 t h$ century (see dating comments above).
"Vials" are generally cylindrical and/or tapered with a flaring
lip. As with the above categories, mold-made vials were dated
post－1809，but they were made in simple ciay dip molds as early as the 17th century（Mkearin and Wilsom 1978：287），However，most of the vials are coded as \＃o7t（undated vials）．
 hold perfume，scent or cologne＝punsey writes that bottles＂of great beauty＂began ta be produced in hinged molds around the turn of the ninetemith century（1570；154）＝

The remaining dated codes：\＃32日（1Fth century beer／ale）\＃\＃29（food storage，post－19う9 and milk bottles，post－1日79），\＃3so（20th century hotile giass），and \＃\＃si（ink bottles），were identified and dated based on Mckearin and Wilson（1978）and Munsey（1970）．

The remaining bottle glass codes are general categories which are intended te give more indication about forms such as \＃\＆77（case bottle） and \＃678 \｛flacon\}, or technol ogy used in manufacturing, guch ess \#6b9 （sand pontil），\＃670（glass tipped pontil），\＃332 Gather mold－made），\＃679 （other free blown）＝Code \＃bBo（ather bottle glass－tundentified）is the catch－all category for miscellanenus unidentifiable glass pieces．

T르느ㄹㅡㅡGㅡ르트크

Table glass was divided into two categorias：general table glass and wine gless stems．These categories were sub－divided into Hecorated，undecoratad，dated，and undated types：No specific dates were included in the code，but when a piece is listed as＂dated＂，the date and the reference can pe found on the original tabulation sheet．

Noel Hume（1969 and 1970）and Hughes（1958）were the sources cited most Often，especially for wine glass stems which were the most common form of dated glass Code \＃S36（prantè was included both for dating purposes and to enable us ta quickly locate these diagnostir pieres． Frunts are commonly found on 17 th century drinting glasses（Fomer glasses）and are illustrated in many Dutch genre paintings．

## 므느란

Codes \＃6日4（other decorated glass）and \＃6日5（miscellaneous undecorated glass）were used for pieces which did not fit into any of the above categories．Code \＃687（1amp glass）was used when both the form and the color of the glass indicated this function．Code \＃6日B was used for all mily glass regardless of its form（almost all milk glass sherds were very fragmentary）．Code \＃6Bt（burned／melted bottle or table glass）was used for those pieces which were so badly burned that very littie could be determined about their original forms．

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# Appendix I 

CONSERVATION
by Nan Rothschild

During the spring of 1981, while lab analysis for the Stadt Huys Block was continuing, and before excavation began at 7 Hanover Square, it was decided that chemical treatment of certain categories of artifacts was essential in order to conserve them for future study. Two advanced graduate students from New York University's Conservation Program in the School of Fine Arts were retained as expert consultants. Their tasks were to examine the material which had been excavated, decide which classes of artifacts were in need of treatment, and establish treatment protocols.

James Roberts was in charge of the conservation program, and focused on organic materials (particularly leather), glass, and ceramics. Deborah Schorsch was a specialist in the conservation of metals. She treated all metal objects herself, mostly at NYU's Conservation Center Laboratory, and at the conservation lab of the Metropolitan Museum of art. She also assisted with some of the treatment of ceramics. Roberts established procedures for the other categories of material; the conservation of these objects was carried out partially by him, but predominantly by Diane Dallal; with the assistance of Paolo Codrino, a Bennington student; Jim Sibal, a volunteer; and several Barnard students. These artifacts were treated in two anthropology department laboratories, one at New York University, and one at Columbia University.

Leather was cleaned in an ultra sonic cleaner if stable, then a mixture of EDTA and water was applied, followed by treatment with Bavon. Approximately 20 large artifact bags (quart size) of leather were treated. Some of the intact shoe parts were preserved between sheets of plastic, and the outlines of all recognizeable pieces were drawn before treatment.

Glass was first evaluated in terms of the need for treatment. Those pieces which were thought to require it were treated with B72, dissolved in Toluene, and the glass was then put in a dessicator and dried in a vacuum. More than 5100 pieces of glass from the Stadt Huys Block (some of which were whole or large portions of bottles), and more than 4500 pieces from the Hanover Square Block (also including some whole bottles and a number of prunts) were conserved.

Bone objects were treated by soaking in a mixture of Acrysol and S12. None of the food bone was treated as it seemed relatively stable, and the collection was so large. Bone objects include buttons, utensil handles, a domino, toothbrushes, a comb, and beads.

Ceramics such as delft, majolica, and slipwares were also evaluated in terms of the need for treatment. Those that were found needy were soaked in de-ionized water, followed by a dilute solution of nitric acid. They were then brushed with $\mathrm{B72}$, and the glaze was glued back on if it had separated from the body of the sherd. 1800 sherds from the Stadt Huys Block and 500 from Hanover Square were conserved. Some special objects from Hanover Square including a toy tea set and porcelain doll parts were also treated. Any important artifacts were photographed after treatment.

The treatment for metals has not been recorded. Objects were cleaned initially by hand, then further by chemical means, and finally were stabilized chemically, and packed in bags with silica gel. All significant objects treated (coins, a spur, buckles, buttons, silverware, ornaments) were photographed.

## Appendix I

## COLLECTION MANAGEMENT

by Nan Rothschild

The Stadt Huys Block and 7 Hanover Square Collections have been moved several times. This was necessary because there was no existing repository that had both the space for, and an interest in, housing the entire collection in a manner which would allow research access by interested scholars. Original storage for each site was in the field laboratory (on Front Street for the Stadt Huys Block site, and on Pearl Street for Hanover Square). Both collections were then moved, with the architectural materials (nails, architectural hardware, window glass, brick, stone, mortar, etc.) going to the John Street office of the Center for Building Conservation, and all the other artifacts going to New York University's Anthropology Department at 25 Waverly Place, in temporary facilities in the basement. It should be noted that both CBC and NYU performed an extremely important service by offering space at a time when there was no other space available.

Finally in 1984 the collections were moved from New York University to Columbia University's new William Duncan Strong Museum of Anthropology, started with the assistance of a grant from the National Science Foundation for Systematic Collections. The artifacts are stored in Room 156, Schermerhorn Extension, in new steel museum storage cabinets, where they are arranged by site, and within the site by test cut, then by catalog number (reflecting strata). Most of the
artifacts are not separated by material, so glass, ceramics, pipe stems etc. are all together. Those items which were conserved are bagged separately. All faunal and vegetal material is housed in a separate cabinet. Shell is housed in boxes, and bulk samples (mostly shell and coral) are stored in a separate room in Schermerhorn. The South Street Seaport Museum has assumed the care of the architectural materials stored at 171 John Street.

Parts of the collection have been used for exhibit purposes in a number of museum or gallery exhibits. Two shows at the New York Historical Society, one commemorating 200 years of trade relations between The Netherlands and the United States, and one on the China Trade, used significant quantities of artifacts from the Stadt Huys Block and 7 Hanover Square sites. Exhibits at Rutgers University, Newark, Columbia University, Barnard College, the Fraunces Tavern Museum, the Collegiate School, the Brooklyn Historical Society, the South St. Seaport Museum (two) have all involved objects from the collections. In addition Richmondtown Restoration has taken as part of their permanent collection some of the stone and brick found from the Lovelace Tavern at the Stadt Huys Block site.

There are also two permanent exhibits which use some of the excavated material. One will open on 17 October at 17 State st. and will have some of the Hanover Square material. An outdoor display on the plaza of 85 Broad Street shows the partial reconstruction of the foundation walls of the Lovelace Tavern and a circular eighteenth century brick well, along with written and photographic interpretive material. This exhibit was designed by Tom Killian of Skidmore, Owings
and Merrill and Nan Rothschild and Diana Wall. There is also a small exhibit planned for the lobby of 7 Hanover Square, designed by Kornelia Kurbjohn with the assistance of Nan Rothschild. This includes artifacts, photographs and artwork and interpretive material, but its opening date is unknown.

## Appendix_k

# Freliminary Report <br> on <br> Palenbotanical Remains from Three Urian Sites in Lower Manhattan: Stadt Huys Elock; 64 Pearl Street, and 7 Hanover Square 

by

Faleobotanical samples were collected during the 1979-81 excavations of three urban archeological sites in lower Manhattan. The sites, all located south of Wall Street on contiguous blocks, represent various periods of colonial New Amsterdam and New York settlement between 1625 and 1875.

Stadt Huys Elock was excavated in 1979-80 by Diana Rockman and Nan Rothschild. Stadt Huys Block A produced samples from features 17th and 18th century wells and a privy used until the 19th century. Samples from Stadt Huys Elock B were taken from a stratified sequence in a sidewalk/street area representing original ground surface.

64 Fearl Street was excavated in 1980 by Nan Rothschild and Arnold Fickman. Samples here are from landfill, laid in place between 1687 and 1697. It is notable that the organic artifacts from this landfill are in better condition than those from original land surfaces.

Arnold Fickman, Diana Rockman and Nan Rothschild excavated 7 Hanover Square in 1981. A number of features underlying 1687-1697 landfill were sampled at this site, including a cistern, privy, midden and basement floor (Rothschild: personal communication).

## Methodglegy

It is important to note that the flotation samples taken from these sites were processed in two different ways: samples from 7 Hanover Square and Stadt Huys Block A were floated in a machine (Sandy-Cresson Enterprises, Moorestawn, NJ) which utilized the city water supply. Water entered the 5S-gallon drum through a sprinkler head and percolated up through 16 mesh nylon screening. The light
fraction was caught in $\theta 0$ mesh nylon bags and the heavy fraction in the 16 mesh nylon screening:

Eamples from 64 Fearl Street and Stadt Huys Block B were floated in a stream in the fall. The light fractinn was hand-skimmed off and the heavy fraction collerted in a 52 mm wire mesh. This second group of samples was then passed through 2 mm , 1 mm and . 5 mm screens and seeds and plant parts sorted out (Rothschild: personal
communication).

Nan Fothschild; Earnard College, then transferred to me 21 bags of unsorted flotation samples and 26 vials of flaated and sorted paleobotanical material. I analyzed all the sorted samples from the 64 Pearl Street 1 andfill and the Stadt Huys Block B ground surface sinces 1) the 64 Pearl Street organic remains were well-preserved; 2) the Stadt Huys Elock E samples represented the only stratified sequence among these three sites, and J) significant labor had already been invested in sorting. I analyzed anly three (50\%) of the six samples from Siadt Huys Elock $A$, drawing one sample from each of the three features, and five (उJ\% of the 15 samples from 7 Hanover Square, sampling each of the four features/structures represented.

## A므르ํㅗㅗㅗㅗ

One feature about the sample weights is notable: one sites 7 Hanover Square, yielded fiotation samples of exceptionally high weights. The average weight af a two quart sample from Stadt Huys Elock A was 5.7 grams, from Stadt Huys Elock E 6.7 grams, and from the well-preserved organic remains of 64 Fearl Street 5.5 grams. However, the average weight of the five samples from Hanover Square
was 37.4 grams per two quart sample iweight adjusted from figures in Table 1). The largest sample, from the privy, yielded well over 100 grams of material in a two quart sample. Even omitting this massive sample, the average would still be 16.9 grams, nearly three times the average weight of the other sites. The large size of this set of samples is apparently due to the large amounts of wood charcoal these Hanover Square features contained.

Of the 25 species of seeds identified from the flotation samples, two-thirds (16) were from herbaceous plants, four from trees, three fram shrubs and two from vines. Nearly half (i1) of these species are generally regarded as "weeds". That is, they are frequently among the first plants to invade disturbed soils and therefore often appear in places where they are interpreted as being unwanted intruders. Six of these species are of clear economic value: the strawberry, raspberry, blueberry, grape, cherry and watermelon.

Gne-fifth (five〉 of the species represented by seeds in these samples are plants which prefer maist to wet soils. These plants include three trees, one shrub and one herbaceous plant. This is not unexpected given the propinquity of the shoreline at that period. (Fothscinild: personal communication).

The most noticeable characteristic of these samples from three different sites is the ubiquity of the herries -- raspberry and strawberry. They are both widespread and numercus.

## 

Seeds from these samples were primarily from these two prevalent berries. Some weedy species were present.

Two wells, one 17 th century and the other 18 th century, produced paleobotanical remains. Samples from like features from two different time periods may permit a few cautious comparisons. The earlier well produced a paleobotanical sample which had a higher speries diversity, as well as a higher seed count, than the later well (Table 12). The two berry species are strongly represented in the fill of both wells, but five of the weedy species present in the 17th century well sample are missing from the 1 Bth century well sample. The wood charcoal varied between these features as well: the 17th century well sampled contained virtually all oak charcoal, whereas the 18 th century well contained primarily hickory charcoal, with traces of comifer and diffuse porous (Table 3).

The other feature excavated at this site was a privy, used into the 19 th century. The privy sample contained wood charcoals which were predominantly oak, with some hickory and diffuse porous. This sample clearly produced the largest chunks of wood charcoal (see the count/weight ratios in Table S).

## 

This street/sidewalt sequence of twenty samples produced about 490 seeds of which $47 \%$ (2J1) were raspberry The bugleweed was also well-represented -- nearly $20 \%$ (94) of the sample (see Table 4). Some strawberry seeds appeared, as well as an assortment of weedy herbaceous plants. Two shrub species were present.

Table 12 presents data on species diversity and quantity of seeds for each sample which may suggest variation over time.

The great species diversity and large number of seeds per sample (Table 12) produced by these deposits indicate that landfill provided better preservation conditions for organic materials than either original ground surfaces or features; with a single remarkable exception -- the 7 Hanover Square privy. However, many of these geeds and plant parts were more fragile than those found in the other types of deposits. This resulted in higher unidentified seed fragment counts.

The seed list was headed, again, by the raspberry and strawberry. In addition, I found blueberry and a wide array of weedy plant speries (Table s). In all, five economic species, all fruits, were identified: the three berriess watermelon and grape.

## 7-Hanover_Sguare

The seeds from these samples contained four economic species: raspberry, strawberry, grape and cherry. Most of these economic species were located in the privy, which was high in both seed count and species count (Table 6). A shrub and weedy plants were also present. The privy sample stands out because of its wide species diversity and its exceptionally large number of seeds, many of which represent economic species. Neither the midden nor the basement floor were particularly rich in number or diversity of seeds.

Hood charcoals were present in these samples. Cistern g yielded charcoal which was predominantly oak (some white group), with smaller amounts of hickory, conifer and diffuse porous. Privy J charcoal consisted of oak (red group) and conifer. Like the privy in Stadt

Huys Elock $A$; privy J produced the largest pieces of charcoal (Table 7) of this set of samples. The basement floor contained mostly diffuse porous charcoal, with some hickory and conifer, while the midden produced oat (red group), $\operatorname{monifer}$ and diffuse porous. The conifer wood charcoal was present in all the features sampled at this site and constituted the largest single species component --
one-third of the charcoal by weight.

## Son드느느으

This is a preliminary report on the flotation samples from these three Lirban sites. There is much more analysis that can be done with this data set.

Nearly 6o\% of the plant species represented by seeds are of economic importance--all fruits. Approximately two-thirds of these economic plant seeds are from raspberries, and one-third from strawberries. Only traces of the other economic species appeared.

Another $20 \%$ ef the seeds belonged to a wide variety of weedy species. Only two percent of the seeds at 7 Hanover Square were from weeds, whereas $17 \%$ from Stadt Huys Elock $E, 34 \%$ from 64 Fear 1 Street and $43 \%$ from Stadt Huys Elack A were from seeds.

Of the remaining seeds, $10 \%$ were unidentified fragments, eight percent were wildflowers (the wetland bugleweed), and $1.5 \%$ were trees and shrubs.

The paleobotanical remains from the two wells in Stadt Huys Black A suggest that the weedy species may have diminished in number and variety of species over time, from the 17 th to the i8th century. This might be tested by examining the Stadt Huys Elock B series in proper temporal sequence.

## TAEㄴㅌㅌ_1


Original Sample Floated Sampie

Catalgg Number Volume (quarts) Weight (grams)

Stadt Huys Elock A

775-782
1016,1030
1149
Stadt Huys Elock B
1710
1724
1728
1738
1739
1740
1742
1743
1753
1759
1765
1768
1769
1772
1773
1779
2.25
2.9

2
2 2

2
2
2

2

2
2
2
2

2

2

2
2
2
2
2
3.1
12.7
4.8
10.3
0.5
1.4
2.4
2.5
1.1
2.2
10.3
B. 1
11.1
11.9
25.9
7.2

Griginal Sample Floated Sample
Volume (quarts) Weight (grams)
1791
2
6.2
1783
2
3.2
2
8.5
0.9
1810

64 Fearl Street
FS 1
FS 2
FS 3
FS 4
FS 5
FS b
6.0

Hanover Square
175
198 4
293
760
845

2

4
2
2
2
1
2

4

4

4

S2. 1
14.8
238.7
15.6
72.6

## 

Archeobetanical Seed keaains.


* Haterials uncarbonized except where noted by asterisk,


## Ctadt Huy



+ Materials uncarbonized except where noted by asterisk.


## 



| Provenience |  | Quercys | Etricus | Carya |  | 【it 4 ¢ |  | Wnidentified |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. No. | Context | (white Group) | 5 p . | 5F. | Conifer | Porous | Eerk | Charcosi |
| 775-782 | 17th sentury |  | 10/.29 |  |  |  |  | 11.01 |
| $101 t_{1}$ | 18th century |  |  | 14/.16 | 21.01 | 31.01 |  | $1 / .01$ |
| 1030 | well |  |  |  |  |  |  |  |
| 1149 | priyy | 11/.98 |  | 1/110 |  | 21.38 | 1/.0! | 5/.25 |
|  | Totals | 11/.98 | 10/. 29 | 15/,34 | 21.01 | 51.34 | 1/,01 | 7/.27 |

## Stadt Huys Block A, Historic Lower Manhattan

Archeobatanical Hood Charcoal: [nunt/Height (grame).


Frunus 5p. (Rpsaceat) Cherry
These traps produce edible fruits, ake good ornanontais and are valuable for their wood.

This qenus \#as represonted in the flatation saximes by just. two individuals, possibly trom different species, with suth a snall seed peptiation, identification on the species level is tenudus. Likely candidates inelude the pin cherry (P. gensylyanical and the sour cherry iP. cerasyel.

The sour cherry, of 'pie cherry, nrows along roadsides, fenees and borders of moods. Lang cultivated in the mid morld, it is now naturalized in the eastern and northmectorn United 5tates. The pin cherry, or 'fire cherry', prefers moist soils in turned areas or clearings, its cherries can be ade into a jelly,

Gubys iocsidentalic? Rosaceael Raspberry
These trandle bushes are noted for their edible fruits. They grow gven on barren soils. The fruits gay be nado into jass ar desserts.

Buge crisgus \{Polygonaceat\} Curly Dock
This Eurnpean wed is now widespread throughout the United 5tates. It preters olditiolds and waste plares.

Sptaria lutecgens (Poaceac)
Bristlegrass
This grass weed groms in cultivated soils, waste areas, roadsides and other disturbed ground. The plant was introduced from Europe.

This nenus ineludes cultivated and wild plants. Wind blueberries are often found in wet areas. These bushes provided an ioportant fond source for wildife and hasans.

Vitis sp. SWitateae! Grana
These clifaning vinge are important for their fruite, which are gaten by humans and mildilife alike.

Archeabotanical Seed feazins.

| Provenience |  | Polygosig | Polygonum | Pritula | Rugex | Eleusine |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. No. | Context | Rersicaria | 5p. | 57. | crispus | indica | lutascens | braminde |
| $1710$ | street/ <br> sidemalk |  |  |  |  |  |  |  |
| 1724 | street/ <br> sidemalk | 1 |  |  |  |  |  |  |
| 1729 | straet/ <br> sidemalk |  |  |  |  |  |  |  |
| 1738 | street/ <br> sidemalk |  |  |  |  |  |  |  |
| 1739 | str get/ <br> sidemalk | 1 |  |  |  |  |  |  |
| 1740 | street/ <br> sidemalk |  |  |  |  |  |  |  |
| 1742 | street/ <br> sidewalk | 1 |  |  |  |  |  |  |
| 1743 | street/ <br> sidewalk |  |  |  |  |  |  | 1 |
| 1753 | street/ <br> sidewalk |  |  |  |  |  |  |  |
| 1759 | street/ <br> sidenab: | 4 |  |  |  |  |  |  |

* Materials uncarbonized except where noted by asterisk.


## Stedt Huss Elock Butgric



* Materizls uncarbonized encest where futed by asterisk.

Archeobotanical Seed fenains and Flant Farte.

| Provenience | Lanicere | Carembe | bidentified | Gramitae | Flant |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. No. Context | sp. | EF. | Seed Fragments | Farts | Parts |


| 1710 | street/ <br> sidewalk |  |  | 14 |
| :---: | :---: | :---: | :---: | :---: |
| 1724 | street/ <br> sidenalk. |  |  |  |
| 1723 | strest/ <br> sidewall: |  |  |  |
| 1738 | stregti <br> sidewalk |  |  |  |
| 1739 | street/ <br> sidemalk |  |  |  |
| 1749 | 5treet/ <br> sidewalk |  | 1 |  |
| 1742 | stregt/ <br> sidemaik |  |  | 3 |
| 1743 | street/ <br> sidemalk | 1 | 1 | 1 |
| 1753 | street/ <br> sidemalk |  |  |  |
| 1759 | strent/ <br> sidemalk |  |  |  |
| 1765 | streat/ | 19 |  |  |

## TAE른

## Stadt Huss Elori EaHistoric Lower Manhatan

Archeototanical Seed fenains and Plant Farts.

| Froverience |  | Lonicera | Corpinus | Unidentified | Graninae | Flant |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| [at, No. | Contery | 5p. | 5 p . | Seed Fragoents | Farts | Parts |
| 1768 | stregt/ <br> sidewalk |  |  |  |  |  |
| 1765 | street/ <br> sidewalk |  | $3 *$ | $6 *$ |  |  |
| 1772 | street/ <br> sidemalk |  | 2 * |  |  |  |
| 1773 | street/ <br> sidewalk | 48 |  |  |  |  |
| 1774 | street. <br> sidemalk |  |  | 9 |  |  |
| 1781 | 5trent/ <br> sidewalk |  |  | 24 |  | 1* |
| 178. | street/ <br> sidemalk |  |  |  |  |  |
| 1807 | street/ <br> sidemalk |  |  |  |  | 3 |
| 1810 | streeti <br> sidenalk |  |  | 9 |  | 2 |

## TAELEE.E.

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Archeototanical Seed Remaiss.


* Materials uncartonizad except where noted by asterisk.


## TAELE 5

Archeobotanicai Segd Fenains.

| Provenience |  | Folygonum | Polygonum | Portulaca | Chengegdig | Ameranthas |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. No. | Sontext | gersigeria | 59. | sp. | 58. | sp. | Asteratage |
| FS 1 | \andfill |  |  |  |  |  |  |
| FS 2 | landfily | 2 | 8 | 1 | 1 | 1 | 1 |
| FS 3 | landfill |  | 20 | 8 | 1 | 5 |  |
| FS 4 | landfill |  | 12 | 1 |  | 14 | 2 |
| FS 5 | landfill | B | 19 |  |  | 2 |  |
| Fs 6 | landfil: | 5 | 3 | 1 | 1 |  | 1 |

* Haterials uncarignized except where foted by asterisk.


## TAEEE

## 64 Pearl Streetini

Archeobotanical Segd gemains and Miscellaneous Plant Parts.

| Frovenience | Lycopus | [aturd | Unidegtified | Flant | Suniper | Cedar | Hongegt |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. Ho. Conteut | Extericans | stranonius | Seed Fragnents | Parts | branchlets | branchlets | t |


| FS 2 | landfill | 4 | 2 | 11 |  | 1 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FS 5 | landfill |  | 12 | 9 |  |  |  |  |
| FS 4 | landill | 1 | 4 | 8 |  |  |  |  |
| FS 5 | landfill | 1 |  | 11 | ! |  | 12 | 4 |
| F9 6 | laridfill | 1 |  | 10 |  | 1 |  |  |

* Materials uncarbonized except where noted by asterisk,


## TAELE 6

## 

Archeabotanical Seed Rereins,


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## 

Archegtotanica! Sead Reaains.

| Frayenience |  | Agbrgsia | Chengegiun | [atura | Polygonu | Pretuiara | Uridentified |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. No. | Context | 5 P . | 5. | stramgiun | nersicariz | 59. | Seed Frapaents |
| 175 | cistern 6 |  | 2 |  |  |  |  |
| 293 | privy d | 1 |  |  | 1 |  | 33 |
| 845 | cidden |  |  | 7 |  | 1 | 5 |

## TAEE 7

7-Hanoyec Gruare Histecic lower Mahattan
Archoobatanical Hood Charcoal: Count/Wight (grass).

|  | Context | Ruprege (red groupi | Quercus (mhite group) | $\begin{aligned} & \text { Euercus } \\ & \text { sp. } \end{aligned}$ | Garya 5p: | Gonifer | Dix Porgus | Ear |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 175 | cistern 6 |  | 11/.60 | 21.08 |  | 1/.05 | 1/.07 |  |
| 198 | cistern G |  | 71.58 |  | 27.68 | 71.09 | $5 / .45$ |  |
| 293 | privy d | E13.98 |  |  |  | 13/10.83 |  |  |
| 760 | basement floor |  |  |  | 81.22 | 21.12 | 10/4.37 |  |
| 845 | midden | $5 / 2.84$ |  | $1 / .57$ | 6/1,36 | 1/218 | 5/1.88 | 11.26 |
|  | tal 5 | 11/6. 82 | 18/1.18 | 3/.65 | 16/1.66 | 20/11.27 | 21/7.25 | 11.26 |

## 7 Henover Spuare Historic Lower Mabhattan

rcheobotanical Hoad Charcoal: Count/Weight Gransl.

** Diseaseds fuggal infestation,

## 

Nonvequtal Coaponents: Present (ă).

| Pruve Cat. Ho. | ence Content | Bone Fragoents | Fish Scales | 5 Stal <br> Shells | Nodules |
| :---: | :---: | :---: | :---: | :---: | :---: |
| I Herover fouare |  |  |  |  |  |
| 175 | cistern f | k | $x$ |  | X |
| 198 | cistern ${ }^{\text {g }}$ |  | \% | $\chi$ | K |
| 293 | privy d | * |  |  |  |
| 766 | basement <br> floor |  |  | X |  |
| E45 | gidden |  |  |  | 4 |
| Stadt Hivy Elock A |  |  |  |  |  |
| 775-782 | 17th rentury meil |  | $y$ | $x$ | $\underline{y}$ |
| luth, 1030 | 16th century |  |  | $\%$ | * |
| 1149 | privy |  | $x$ |  | K |

TeEx

## 

Nonvengetal Conponents: Prespot (X),

| Proygience |  | Fish Scales | Snail <br> Shells | Insect <br> Parts | Coal | Approxieate --Csunt Nodules |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. No. | Context |  |  |  |  |  |
| 1710 | street fi |  |  |  |  | 70 |
|  | sidemalk |  |  |  |  |  |
| 1724 | street/ |  |  |  | * |  |
|  | sidewalk |  |  |  |  |  |
| 1729 | 5trget $/$ |  |  |  | x | 20 |
|  | sidemalk |  |  |  |  |  |
| 1738 | street/ |  |  | K |  | 40 |
|  | sidemalt |  |  |  |  |  |
| 1734 | street/ |  |  |  |  |  |
|  | sidemalk |  |  |  |  |  |
| 1740 | street/ |  |  |  |  | 2 |
|  | sidewalk |  |  |  |  |  |
| 1742 | strept/ | * |  | * |  | 20 |
|  | sidenalk: |  |  |  |  |  |
| 1743 | strent/ |  |  |  |  | 14 |
|  | sidanalk |  |  |  |  |  |
| 1753 | street/ |  |  |  |  | 15 |
|  | sidemalk |  |  |  |  |  |
| 1759 | street/ |  | \% |  |  | 10 |
|  | sidemalk |  |  |  |  |  |
| 1765 | strept/ |  |  |  |  | $1000{ }^{\prime}$ |
|  | sidemalk |  |  |  |  |  |

Nonveģetal Cogponents: Fresent ini.

| Provenience |  | $\begin{aligned} & \text { Fish } \\ & \text { scales } \end{aligned}$ | Snail <br> Shells | $\begin{aligned} & \text { Insect } \\ & \text { Parts } \end{aligned}$ | Coal | $\begin{aligned} & \text { Approxiate } \\ & \text { Count } \\ & \text { Nodules } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. No. | Context |  |  |  |  |  |
| 1768 | street/ |  |  | l |  | 10004 |
|  | sidemaik |  |  |  |  |  |
| 1789 | strept/ |  |  | X |  | 4000 |
|  | sidemalk |  |  |  |  |  |
| 1772 | streat/ <br> sidemalk |  |  |  |  | 50 |
| 1773 | street/ <br> sidewalk | $\underline{1}$ |  | $\gamma$ |  | B00 |
| 1779 | street/ <br> sidewalk |  |  | * |  | 200 |
| 1781 | street/ <br> sidewalt |  |  |  |  | $1000^{\prime} 5$ |
| 178.3 | streat/ <br> sidemalk |  |  |  |  | 100 |
| 1807 | strept/ <br> sidenalk | $x$ |  |  |  | 150 |
| 1810 | street/ <br> sidenal: |  |  | k |  | 10 |

## 64 Prard Street Histaric Lower Manhatton

Nonvegetal Components: Present ( $x$ ).

| Provenience |  | Insect | Approximate Count |
| :---: | :---: | :---: | :---: |
| Cat. No. | Context | Parts | Nodutes |
| FS 1 | landfill |  |  |
| FS 2 | landfil! |  | 10 |
| FS3 | landfill | \% | 30 |
| F5 4 | landfill |  | 12 |
| FS 5 | landfill | $k$ |  |
| FSt | landfill | X | 10 |

## Hictoric Lower Manhatun

Fraquency of Recurtence of Paleobotanical Seeds, in Rank Order

Stat Hyy Block A.
Tetal Number of Samplas Analyzad $=3$
Nuater of Samples in
Specips
Which Species Appeared

Wugus sp .
3

Fragaria virginiana
3

Erensica 5月. 2

Chenogediun sp, 2

Fritulaca 5月. 2

Pelyonte gersicaria

Folygon:ix sp. 1

Eleusine indica 1

## Histaric tower Mantitan

Frequency of Docurrence of Palanbotanical Seeds， in Rank Drier

| Species | Total Number of Sanples Analyzed $=20$ <br> Nunber of Samples in施ich Species Appeared |
| :---: | :---: |
| Rubus 5. | 15 |
| Framaria virginiana | 7 |
| Erasicita 57. | $t$ |
| Polygnug gersicaris | 6 |
| Eramine | 5 |
| Chencredius 50. | 4 |
| Lyserus 3 Ecricanus | 2 |
| Fortulate 5 P： | 2 |
| Lenitara 59. | 1 |
| Carginus sp． | 1 |
| Hestyphe sp． | t |
| A5teraceas | 1 |
| Polygonu⿷匚 $5 p$. | 1 |
|  | 1 |
| Elonsing indica | I |
|  | 1 |

Frequency of Drcurrence of Paleobotanical Seads, in Hank Groer

64 Perintret

|  | Total Nunber of Gappias Andyzed = 6 |
| :---: | :---: |
| Speries | fiurber of Sadples in Whith jpecies Appered |

Reltag Ef . 5
Frataria vicainiana 5
Elvegug 5p. 5
Uaceinuag $5 \rho$. 4

Fortulara 5 . 4
Ameanthus sp. 4
Hature stragniul 3
Chengediug sp: J
Pglygnar ersicaria 3
Getaria lutastens 3
Astraricege z
Vitis 5 P. $\quad 2$
Citruilus wulqaid 1
Eleungine indice !

## Historic_Lener Manhaten

Frequency of Gccurrence pf Faleobotanical Seeds ${ }_{3}$ in Fink Drder
7 Haguye Spuare
Total Nuber of Samples Analyzed $=5$
Kuaber of Sagies in
Which Species Appeared
Eubus 50.5
Fragarie virginiana ..... 5
Yitis $5 p$. ..... L
Erenus sp. ..... t
Lonicera 5 . ..... 1
Àghrosia 5 . ..... 1
Chenogodite 5 . ..... 1
[itura strapogiua ..... 1
Eglegmug persicaris ..... 1
Folvorie 5 F. ..... 1
Fortulaca 50. ..... I

## Historic Lager Mabatan

Paleobatanical Seeds: Euntity and species Hiversity, by sample.

| Sagales | Nuaber of Samples Present* | Number of Seeds Fresent* |
| :---: | :---: | :---: |
| 1710 | 0 | 0 |
| 1724 | 2 | 2 |
| 1728 | 1 | 3 |
| 1738 | 1 | 21 |
| 1737 | 2 | 20 |
| 1740 | 2 | 9 |
| 1742 | 4 | 5 |
| 1743 | 4 | 12 |
| 1753 | 1 | 10 |
| 1759 | 2 | 5 |
| 1755 | 8 | 61 |
| 1768 | $\underline{1}$ | 3 |
| 1769 | 4 | 11 |
| 1772 | 4 | 12 |
| 1773 | 5 | 68 |
| 1779 | 3 | 10 |
| 1791 | 3 | 37 |
| 1785 | 4 | 36 |
| 1807 | 3 | 12 |
| 1810 | 4 | 107 |
|  | 3 Average | ple 444 Total |

*Counts froe 2 quart samples
32

## Historic Lower Mantattan

Paleobetanical Seads [uantity and Speries diversity, by samid.

| Sanples |  | Number of Gamples Present: | Nubber of Seeds Presenta |
| :---: | :---: | :---: | :---: |
| F5 1 | landfill | 2 | 7 |
| FS 2 | landfill | 11 | 72 |
| FS 3 | landfill | E | 79 |
| F5 4 | Landfill | $9 * *$ | 90 |
| F5 5 | landfill | 10 | 111 |
| FSb | landfill | 10 | 41 |
|  |  | 9.3 Average <br> Per Sample | 4000 Total |
|  |  |  | 66.7 Ayer zge Fer Salale |

+ Muwbers rafiect tounts fron 2-quart sanples.
* Count from a 1 -guart safie and nat corrected.


## Histaric Loner Mantetan

Pelpobatanical Seters: Quantity and Speries biversity, by Fexture.

5tat Huy illacik

| Faxture | Number of Samples Presenty | Number of Seeds Prasentit |
| :---: | :---: | :---: |
| 17th century well | 7 | 41 |
| ieth tentury well | 3 | 29 |
| privy | 4 | 20 |
|  | 4.7 Averange <br> For Sample | 90 Total |

30 Aver age
Fer Saple
7. Hanover Square.

| Feature | Number of Somples Fresent** | Number of Seeds Fresent |
| :---: | :---: | :---: |
| Listern | 2.5 | 19.5 |
| privy | 7 | 245 |
| basement floor | 2 | 8 |
| 的dden | 4 | E |
|  | 3.9 Average <br> fer Sample | 280.5 Tntal |
|  |  | 70. 1 Average Fer Sample |

## Histaric Lquep Manhatan

Sumary Table: Sead Counts by Site and Category (number of seds) percentage of totai nuaber of seeds from that sitel.

|  | SHE-A | SHE-5 | 649 | THS |
| :---: | :---: | :---: | :---: | :---: |
| Emponic flants |  |  |  |  |
| Citredics |  |  | 3/.8\% |  |
| Fregaria | $31 / 32 \%$ | 8/ 24 | 142/26\% | 72/214 |
| Frunes |  |  |  | $216 \%$ |
| Fibtes | 22/23\% | 231/48\% | $31 / 8 \%$ | 198:59\% |
| Yectinien |  |  | 21/5\% |  |
| Pitis |  |  | 2/.5\% | 16) 54 |
| SUBTOTAL | 53/55\% | 289/50\% | 199/90.3\% | 288/85, 6 |


| Acalyete |  | 1/.2\% |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Agaranthes |  |  | 22/5.6\% |  |
| E日brgsia |  |  |  | 1/3\% |
| Bsterateag |  | 1/.24 | 4/1\% |  |
| Frassica | $2 / 27$ | 38i 8 |  |  |
| Chengegdiug | 13/13\% | 9/24 | 3/.84 | 2/.6\% |
| Datura |  |  | 18/4.67 | 21.63 |
| Eletsine | 11\% | 3/6\% | 2\%.5\% |  |
| Polyqunue $\beta$. | 6/6\% | 12/2.54 | 15/4\% | 1/3\% |
| Polygenti 50. | 18:18\% | 11/2\% | 62:16\% | 11.33 |
| Portulaca | 2/2\% |  |  |  |
| Ewng |  | 17/3.5\% |  |  |
| Setaria |  | 17.2\% | 12/ 3\% |  |
| SIBTGTAE | 42/47\% | $93 / 15 \%$ | 1384135.57 | 7/2,1\% |

## Historic Inwer manhtten

Sumary Table: Segd Counts by Site and Category (number of seeds/ pertentage af tutal number of seeds fram that sitel.

|  | SHE-A | SHE-B | 649 | 749 |
| :---: | :---: | :---: | :---: | :---: |
| Hildflowers |  |  |  |  |
| LYCOELS |  | 94/19\% | 712\% |  |
| SUETOTAL |  | 94/19\% | 7/2\% |  |
| Chrubs end Traes |  |  |  |  |
| Careinus |  | 3/16\% |  |  |
| Lonitera |  | 4/18\% |  | 5/1.2\% |
| Suterotal |  | 7/1:4\% |  | 5/1.5\% |
| Unidentified | 2124 | 42/16\% | 47/12\% | 38/11\% |

Iotal Nuber oid seeds
$97 / 99 \% \quad 481 / 99.94 \quad 395 / 99.84 \quad 338 / 100.24$

Tqual Rung pry figles

| 3 | 20 | 6 | 5 |
| :--- | :--- | :--- | :--- |

Aygrane Nomer of seds fer fantle
$32.3 \quad 24.1 \quad 65.5 \quad 67.6$

## Historic Lower Mantettan

Suadary Table: Seed Counts by Categiory for All Sites
(number of seeds/percentage of total number of seefs fron all four sites).

- Exagic Plants

| Citrulus | 3/.24 |
| :---: | :---: |
| Framaria | 253/17\% |
| Prunis | 21.1\% |
| Rebus | 482/37\% |
| Yactinitw | 21/1.84 |
| Yitis | 18/1.42 |
| Silbiotal | 779/59,36 |



## Historic Lower Manhatさ=

Sugnary Table: Seed Counts by Category for All Sites
(nueber of seeds/persentage of total nueber of seeds from all four sites).

- Mildilowers

Lycgese $\quad$ 101i8\%
SUETOTAL 101/84

Sbryty and Irees
Cargings $\quad 3.26$
Loniger $9 / .74$
GIFTOTAL 12\%.9\%
$B$
Unidentified $13 / / 10 \mathrm{~L}$

Igtal Nubher of Seds
$1309 / 100.95$

Tgtal Huber gísaglas
34

Averare Hugher of Speds Per Sangle
38.5

This panus cortars about 200 spacios, These are coemon weads in Patitres, gardens and mate piaisa in the southern linited statea, and to a lesser extent in the northeast united States. The
 aperias are min propogated as hase piants.
 Finugad is componthoughot the baited gtates. The remarkable surcess of this weed in the United attates is due in part to its trempadous seee praduction: Pigued prefers the cultiveted snils at garders and archards, but does quite well in adste places,
 foreigh. Tho few spacies indigenous to the united States mere Frebatly native only to the Geat Flains. These seads are an isportant source of iond for songhirds.

Meny species of raguegd are both widesnread and atondent. The fiant is narticularly partial to fields, roadsides and maste areas in the northeast and miderest lnited States. The oil rich achenes are a waluable food to song and gase hirds during the tali and winter.

Aster, [asisy or Gunilower Fanily
This large, worldwide tanily includes snpe 920 nenera and 19 iofo speries; including wany genogic and ornamental plants. Thase terbaceous plants are notable for their small fiowers whirg are organized into a iarger head resenbiinc a single, synoetrical flower head ringed by green bracts.

Erasica sp. CBraseicacade Mustard
Six species in this qunus ocrur in the eastern linitad Etates. Mustard prefors figld and waste areas, This genus contains many conacn garden vegetables: cabtane, cauliflower, troccoli, and trussel sprouts. The gede are eaton by songbirds,

The wistard identified rey be Er niqra, hiack qustard. This Eropear isuigrant produres seeds usaful for seasoning in pickles and tustari sauce. These seeds are also tound in comercial bird food. flostard gil has been used in medicines and sozp.

Agrendix 1-2.
Carginus caroliniana? !Eetulareae) Ironwond - Hernbeag

Ironword is found in the eastern United Statas, profering moist rith soils, offen along streass and ravines. The charcoal was feportediy once used in the anafacture of gunpowder. The fruits (rutlats) are eaten by quaebirds and soae squirrels.

Cedar
(Cupressaceap)
Cegar
Cedars arg conacn in woist or boggy areas.
Changedius 5p, (Chnopodiaceas) Lambsquarters - Goosefnat
Hineteen species of this genus are found in the eastern llnited States. The genus prefers disturbed or cultivated land and roedsides. Most of these prelific and prevalent meeds are foreign annuals. Ferennial goosefoot was introduced from Eurasia as a potherb and is still gronn or gathered today for grems.

## Citrulus vulgaris <br> Watermelon


This weed is faund in heste places, fields and barnyards throughout the United Staters. All parts of the plant are very poisonaus. The name 'jimsnomed' is presumeahly a corruption of Jamestom where the plants grew near the coionists' hones. The plat is also called stinkmed due to the rank odor eatted ty crush leaves.

## Elpysing indica Pracazel fonsegrass

This grass, naturalized froin the gid \#orld, grows in waste plates, fields, gardens and roidsides. This plant is a common weed, particularly in the warmer regions of the United states,

Eragaria virginigag (fosaceat) Strawberry
The stranderry, known for its skegt, edible recortacle which is covared by eatedded fruits, occurs uild and its hybrid is growt comergially.

This juniper is most probably duniperus yirginiana, considering its gorghological charactoristics and its geographic distribution. This tree preters anist to swapy soils, but can occur anywhere from dry uplands to flood plains and shamps. It can eften be seen in abandoned fields and fance raws.

Early accounts indicato that the trog was prized by colonists for tuilding furniture, rail fencos and lon cabins as early as 1564 in Wirginia, The arofatic mond is favored for cedar chests and cabinetwork: The rearfies" are eaten by a yariety of wild life,

Af feh species of this shruh are corsidered weeds.

## Lycress agoricanys (Laniaceagi Eugleweed - Horehound

This non-arematic qint prefers inist sites and wetlands, hence the rane "nater horehound'.

This abundant weed is cowann in the United States, and is most frequently found along roads, in danp clearings and in cultivated grosnd. fhe seads provide a valuahle saurce of fond far gampand songbirds.

Folygonese 5 . (Polygnaceae) knotwed
 abundant and midespread in the United States now. The plants are cooenon fests in gardens and lahns.

Fg:tulaca $5 卩$. Portularaceas
Pursland

This weed is both widespread and nell-knoun. Apparently, it was introduced fron Europe. The plant has sone nutritive yalue far humans: at one tive it was used as a potherla because of its bigh iron content.

## APFENITY 2

Garye sp.
(Wuglandaceag)
Hiekory
Snee le specios of hichories accur in this arga of the United States. Many of these species preter moist or met soils, a few actually grow in shaps, but some may be town in drier upland soils.

Host of these spacies produce a nut which wildife consumes, and a fen speries produce nuts which are considered edihle by hueans. The pignet hickory we naged after the custor of feeding its nuts to hogs. The nets also produce oils for lanps, and the husks dyes, the timber has value as a ran oaterial for buiding furniture and toois; for fuels and for senting neats.

Dififise Porgus
This group of woods includes many hardunads incluning maples
 (getula sp.i, sycaore felatomes sp.l, therry (Frynus sp.),


Quarctis 5F. (Fagaceat) Dak
Thi subgenera of oaks are distinguishahlet white and red athe. White oaks produce acorns which mature in one season whose neat is nat as bitter as the red oal acorns and is sometimes ofible, Fed oak acorms take two seasons to heture, and the meat is bitter.

The white oal group includes white nak ( 8 . albal: chestnut oak

 10. Egctingal, and pio oak ig. galustrisi.

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7 Hanover Square, Part 6 of 6
Appendix L.Artrfoct Codes

Appendivem - Artifact Inventory Intosinilex

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Appendix O-Concordance Tables

APPENDIX L
Artifact Codes

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FFRFIIIESTOILETHY MEL． 2 MADE NO PONIIL POST 1857



misembanedug undecorated glass



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## APPENDIX M

## 7 HANOVER SQUARE--ARTIFACT INVENTORY

This appendix presents an inventory of artifacts recovered from each specific context number excavated within the various test units discussed in the text. It consists of print-out from the SHAARC computer system used to analyze the results of the excavation. The inventory is presented in two sections. The first presents a listing of artifacts and faunal remains; the second a more detailed listing of the ceramics. For each section the data is grouped by test cut, with totals presented for each test cut. The context numbers associated with particular deposits discussed in the text are listed in Appendix $N$.

Since the text discusses a number of the exploratory "shovel tests," we have also included the data for the context numbers contained within these tests, together with a list which indicates which context numbers are associated with each shovel test.

It should be noted that there are 88 context numbers from the 7 Hanover Square site which refer to miscellaneous contexts such as stray finds, artifacts recovered from backhoe trenches etc. The artifacts recovered from these contexts were not, in general, referenced in our analysis of the site and these have not been included in the inventory. These artifacts have, however, been entered into the computer system and can be retrieved from it. They have been included in the
site-wide artifact totals mentioned in the text.

## Artifact Inventory

The coding system used within the SHAARC system consisted of 303 separate artifact/faunal codes. To simplify presentation and analysis, similar artifacts and faunal materials are combined so as to present data in 94 columns, which fall within fourteen broad groupings: household items, clothing and personal ornaments, other personal items, weapons, auxiliary items, manufacturing related items, other non-architectural items, architectural artifacts, building materials, miscellaneous materials, burned materials, bone, shell and vegetal materials. For example, beads were entered into the system under six different code numbers according to the material of which they were manufactured; all beads are tabulated in column 18 of the print-out. The data for each catalog number are presented on three pages of the print-out.

Each column on the print-out is headed by an abbreviated title describing the artifact type or types that are included. The left-most column of the print-out gives the context number, the second column gives the numeric equivalent of the test cut designation (i.e. $T C A=1, B=2$, etc.). The third column provides the numeric equivalent of the stratum and level within the test cut (i.e. Stratum $I$, Level $a=11$, Stratum XII, Level $f=126$ ). An entry of 00 in the third column indicates that the context number refers to $a$ miscellaneous context within the test unit not assigned a
stratum designation such as wall clearing or post-hole auger test. It should be noted that within each test cut the strata are not necessarily listed in numerical order. In addition, some excavation units were designated as extensions to previously excavated units. These units have not been assigned separate numerical identifiers within the computer system. Thus, for example, the various context numbers for TC $O$ and for TC $O$ extension are listed together under TC 15. Thus, the same stratum/level designations (third column of the print-out) can appear more than once under the same test cut number. In such instances, separate context numbers differentiate between the stratum/level from the test cut and the test cut extension. In the heading at the top of the print-out, "site \#1" refers to the 7 Hanover Square site.

Where an asterisk replaces the number of artifacts or weight of materials in a particular column, this indicates that the quantity of weight exceeds the number of places allocated on the print-out. For example, four places were reserved for the weight of coal (column \#68). If more than 9999 grams of coal were recovered from a given context number, four asterisks would be printed. The exact weight recovered is available in the project records, on file at columbia University in the Strong Museum of Anthropology, and at the South Street Seaport Museum.

To further identify the artifact categories included within each column of the print-out, we have included a print-
out of the artifact code list sorted by column. The first column of the list shows the column of the print-out in which the artifact type is tabulated, the next column identifies the artifact type, and the last column of the list shows the code number under which the specific type of artifact was entered into the system.

## Ceramics

As with the artifact print-out, the left-most columns of the ceramic print-out list the context number, the numeric equivalent of the test cut designation, and the numeric equivalent of the stratum/level designation. The ceramics are listed under fourteen major headings: redwares, salmon/buff/white-bodies earthenwares, delftwares, red-bodied slipwares, buff-bodied slipwares, gray-bodied salt-glazed stonewares, brown-bodied salt-glazed stonewares, white-bodied salt-glazed stonewares, non-salt-glazed stonewares, creamware, pearlware, yelloware, whiteware, and porcelains. The 202 code numbers under which ceramic types were entered into the system are combined so that the data are shown in 94 columns on three pages. For example, shell-edged and feather-edged pearlware were coded separately according to color; all of these pearlwares are listed in column 60 of the print-out.

The ceramic code list included by the inventory is in order by code number. The number of the column in which the ceramic type is included on the inventory sheets is given in the fifth column of the code list. The ceramic code list also
gives the initial and final dates of manufacture for each ceramic type which were used in the calculation of mean ceramic dates as well as a description of each ceramic type. The column headed "Gr \# on the code list refers to the larger ceramic groupings which were discussed in the Appendix of this report.

## Shovel Tests

The print-outs for the shovel tests are organized as for the test cut print-outs. However, the second column on the left hand side of the page, reserved for test cut designations, is always shown as 00 for the shovel tests. The third column of the shovel test print-outs does not designate stratum and level. The first digit is always a 9, and the following digits indicate the number of the lot in which the shovel test was placed.

## Hanaver Square Shavel Temte

| Ghovel Test $\ddagger$ | Lrt | Cetalog Mumbers |
| :---: | :---: | :---: |
| 1 | 15 | 16 |
| 2 | 13 | 22 |
| צ | 14 | 26 |
| 4 | 15 | 99 |
| 5 | 10\% | 45 |
| E | 13 | 439 |
| 7 | 12 | 437 |
| E | 15 | 440 |
| 9 | 19 | 447 |
| 10 | $1 \%$ | 472 |
| 11 | 12 | 480 |
| 42 | 1.3 | 48 |
| $1 \Xi$ | 1.5 | 486 |
| 14 | 10\% | 467 |
| $1:$ | 15 | 489 |
| $1 \dot{0}$ | 27* | 507, 509, 516, 542, 789 |
| 17 | 11. | 1024 |
| 10 | 12 | 102, 1.0 2 |
| 19 | 1.4 | 945 |
| 20 | $10 \%$ | $\begin{array}{lcll} 1084, & 123 \\ 1251, & 125 \end{array}$ |
| 21 | 27\% | 1148 |
| 22 | 27* | 1150, 1151 , 1162 , 1196 , 197 |
| 2 S | $27 *$ | 1202 |
| 24 | 27\% | 1241 |

Hanover Square Ehovel Tests (Dontimued)

| 25 | $27 \%$ | 1244 |
| :--- | :--- | :--- |
| 26 | $27 \%$ | 1247 |

APPENDIX N

Artifact and Ceramic Inventory

Artifacts from test Cuts, pp. 1-78 Artifacts from shovel tests, pp. 79-81
Ceramics from test cuts, pp. 82-154
Ceramics from shovel tests, pp. 155-157



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|  |  | 80 | B | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4510 | 0 | 4576 |
|  |  | 89 | － | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2435 | 17 | 1511 |
|  |  | 97 | E | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1932 | 351 | 343 |
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|  |  | 107 | 日 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 491 | 47 | 130 |
| －\％ |  | 113 | － | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | $\square$ | 1375 | 1030 | 0 |
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| 里乐4． |  | 140 | B | 71 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 1 | 0 | 20 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 30 | 1 | 0 | 2 | 4 | 30 | 0 | 0 | 0 | 0 | 2324 | 471 | 7 |
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| 4\％ | 0 | 145 | 日 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | $\bigcirc$ | $\bigcirc$ | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | $\bigcirc$ | 0 | 1 | 0 | 509 | 43 | 190 |
| d |  | 153 | － | 73 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 13 | 0 | 3 | 0 | 0 | － | 0 | 0 | 1 | $\bigcirc$ | 0 | 0 | 0 | 10 | 0 | 0 | $\bigcirc$ | 0 | B7\％ | 578 | 43 |
| ， |  | 157 | － | 81 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 2 | 0 | 0 | 0 | 0 | 97 | 374 |  |
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| －${ }^{2}$ |  |  |  |  |  | BLD | MET | 口 |  | ＋18． | L | DR | AD | O Ab | A ${ }^{\text {a }}$ | HH | MAL | D 1 | H | DE | ／R | HSC | DEN | es | 51 | TB | FN | SMEL． | ors | SHEL | HC | Hf | （GMS） | St | RF | co | AW | nr |
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| \％ $0^{4}$ ） |  | 19 | 1 |  | 411 | 109 | 184 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | $\bigcirc$ | 0 | 6 | 0 | 0 | － | 0 | 0 | 104 | $\bigcirc$ | － | 2 | 1 | 727 | 10 | 8 | $\bigcirc$ | 0 | $\bigcirc$ | 0 | － | $\square$ | － | 0 |
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| －wex mox |  | 60 | 1 |  | 95 | － | 360 | 0 | 0 | 0 | 0 | o | 0 | 0 | 7 | 3 | 24 | 5 | 15 | 0 | 0 | 0 | 21 | 0 | 0 | 49 | 3 | 7 773 | 0 | 46 | － | 13 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 |
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$0000+00000$ $\begin{array}{llllll}0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 3 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 9 & 7 \\ 4 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & B & 0 & 27 & 73 & 0\end{array}$ $\begin{array}{llllll}0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 3 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 9 & 7 \\ 4 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 27 & 73 & 0\end{array}$ $\begin{array}{llllll}0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 3 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 9 & 7 \\ 4 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 27 & 73 & 0\end{array}$ 14
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HOUSEHOLD ITEMS




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| 1114 | 42 | 22 | 95 | 39 | 1 | 29 | 0 | $\bigcirc$ | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | - | 0 | 0 | $\stackrel{\square}{0}$ | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1139 | 42 | 23 | 92 | 44 | ¢ | 29 | 0 | 0 | 23 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | O | 0 | 0 | 0 | - | 0 | 0 | 0 |
| 1173 | 42 | 24 | 51 | 11 | 1 | 5 | 0 | 0 | 10 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1143 | 47 | 25 | 50 | 11 | 0 | 1 | 0 | 0 | b | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | o | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | $\bigcirc$ | 0 | - | 0 | 0 | 0 | 0 |
| 1194 | 42 | 31 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | o | 0 | $\bigcirc$ | 0 | - | $\bigcirc$ | - | $\bigcirc$ | $\bigcirc$ | 0 | 0 | 0 | 0 | o | $\bigcirc$ | $\bigcirc$ | 0 | 0 |
| 1164 | 42 | 26 | 41 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | - | $\bigcirc$ | 0 | 0 | $\bigcirc$ | - | 0 | $\bigcirc$ | $\bigcirc$ | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1168 | 42 | 32 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1175 | 42 | 37 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | $\bigcirc$ | 0 | $\bigcirc$ | - | 0 | 0 | 0 | $!$ | 0 | 0 | 0 | 0 | 0 |
| 1176 | 42 | 27 | 16 | 0 | $\bigcirc$ | 0 | 0 | 0 | 2 | 0 | - | 0 | 0 | 1 | 0 | 0 | 0 | - | - | 0 | - | 0 | 0 | o | $\bigcirc$ | 0 | 0 | 0 | - | - | - | 0 | 0 | 0 |
| 11 me | 42 | 34 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | $\bigcirc$ | 0 | 0 |
| 1190 | 42 | 41 | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | $\bigcirc$ | 0 | 0 | - | $\bigcirc$ | - | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | - | $\bigcirc$ | $\bigcirc$ | 0 | $\bigcirc$ |
| 1194 | 42 | 35 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | - | - | 0 | 0 | - |
| 1204 | 42 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | $\bigcirc$ | 0 | - | 0 | 0 | 0 | 0 | 0 |
| 1212 | 42 | 61 | 3 | 0 | - | - | - | 0 | 4 | 0 | - | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | - | - | 0 | 0 |
| 123 | 42 | 71 | 2 | - | 0 | $\bigcirc$ | 0 | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | $\bigcirc$ | 0 | $\bigcirc$ | $\bigcirc$ | - | - | $\bigcirc$ | 0 | 0 | 0 | 0 | $\bigcirc$ | $\bigcirc$ |
| 1234 | 42 | B1 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | - | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | $\bigcirc$ | $\bigcirc$ | - | - | 0 | 0 | 0 | 0 | 0 | 0 | - |
| 1330 | 42 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | $\bigcirc$ | 0 | 1 | 0 | 0 | - | 0 | 0 |
| 1275 | 42 | 101 | 4 | 0 | - | $\bigcirc$ | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | - | - | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | D |
| 1238 | 42 | 1:1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | - | 3 | - | o | 0 | 0 | - |
| 1239 | 42 | 121 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 1242 | 42 | 131 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL |  |  | 470 | 112 | $\pm$ | 109 | 0 | $\bigcirc$ | 65 | 3 | 0 | 7 | 3 | 1 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | $\bigcirc$ | 0 |
| 1086 | 43 | 11 | 13 | 1 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | - | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 1097 | 43 | 12 | 12 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | - | - | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1099 | 43 | 21 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | $\bigcirc$ | - | 0 | 0 | $\bigcirc$ | 0 |
| 1100 | 43 | 31 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 1117 | 43 | 13 | 20 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | - | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 |
| 1129 | 43 | 41 | 16 | 1 | $\bigcirc$ | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 |
| 1134 | 43 | 51 | 6 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1146 | 43 | 61 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1149 | 43 | 71 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | - |
| 1166 | 43 | 81 | 3 | $\bigcirc$ | 0 | 0 | 0 | 0 | 2 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | $\bigcirc$ | 0 | 0 | 0 | 0 | 5 | 0 | - | 0 | 0 | 0 |
| 1172 | 43 | 91 | 26 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | - | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 |
| 1192 | 43 | 101 | 1 | 0 | 0 | 0 | $\bigcirc$ | 0 |  | 0 | $\bigcirc$ | 0 | 0 | - | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | $\square$ | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 1189 | 43 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | $\bigcirc$ | 0 | - | 0 |
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|  | 385 | 15 | 101 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 |  | 0 |  |  | 0 | 0 | 0 | 0 |
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| 为乐： | 406 | 5 | 121 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 |  | 0 |  |  | 0 |  | － | 0 |
|  | 4，97 | 15 | 131 | 0 | 0 | 0 | 0 | 0 | 0 | － | － | 0 | 0 |  | － |  |  | 0 | 0 | 0 | 0 |
| $8{ }^{6}$ | ．11 1 | 15 | 141 | 0 | 0 | 0 | 0 | 0 | 0 |  | － | 0 | 0 |  | 0 |  |  | 0 | － | 0 | 0 |
| \％ | 4121 | 15 | 151 | 0 | 0 | 0 | 0 | 0 | 0 | － | － | 0 | 0 |  | 0 |  |  | 0 | 0 | 0 | 0 |
| 5 | 413 | 15 | 132 | 0 | 0 | 0 | － | 0 | $\bigcirc$ | － | 0 | 0 | 0 |  | 0 |  |  | － | － | 0 | 0 |
|  | 417 | 15 | 161 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | － | 0 | 0 | － | 0 |  |  | 0 | 0 | 0 | 0 |
|  | 418 | 15 | 171 | 0 | 0 | 0 | 0 | 0 | 0 | － | 0 | ¢ | 0 | － | 0 | 0 |  | 0 | 0 | 0 | 0 |
| 108 | 422 | 15 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | － | 0 | 0 |  | 0 | 0 | － | 0 |
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| \％ | 429 | 15 | 31 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |  | 0 | 0 | 0 | o |
|  | 442 | 13 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | － | 0 | 0 | － | 0 | 0 | 0 | 0 |
|  | 431 | 15 | 191 | 0 | 0 | 0 | 0 | 0 | 0 | a | 0 | 0 | 0 | 0 | － | 0 |  | $\bigcirc$ | $\bigcirc$ | 0 | 0 |
| i 6. | 432 | 15 | 日a | 0 | 0 | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | － | 0 | 0 |  | 0 | 0 | 0 | 0 |
|  | 460 | 15 | 471 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | － |
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|  | b | 15 | 71 | 0 | 0 | － | 0 | 0 | 0 | 0 | 0 | 0 | o | 0 | 0 | － | 0 | 0 | 0 | 0 | 0 |
|  | 473 | 13 | 121 | 0 | 0 | 0 | 0 | － | － | 0 | 0 | 0 | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | 0 |
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| \％ | 563 | 15 | 121 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 |
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#### Abstract

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(Strata I, II, III)
Mortar and hard packed reddish brown sand with yellow mottling below brick floor
(Stratum VI)195

Red/brown sandy silt lens - NW portion of T.C. - landfill
Yellow green sandy silt with yellow ..... 186, 196, 202, 220
mottling - upper landfill
(Stratum V) ..... 194, 206
Intrusive pit - Southeast portion of T.C.
Red sand band - landfill
(Strata VIII and IX) ..... $215,218,225,229$
Yellow/green sandy silt and green silt with
(Stratum XI)
Green sandy silt with pockets of brown and
black clay - landfill233, 257. 281
(Stratum XII)292, 307, 322
Brown sand - landfill?
(Stratum XIII)$176,177,184$(Stratum VI)Red/brown sandy silt lens - NW portion ofT.C. - landfill

(Stratum IV)
(Stratum VII) ..... 211
red sand pockets - lower landfill
Red sand - river bottom

## Lot $9 *$ Temet Cut AN

Erown sandy silt with rubble - within ..... 10791085and morth of cistern
Cistern Floor ..... 1091
Gistern Wall ..... 1106
Erown Sandy Si]t (southeest) - ..... 1120
Disturbance for wall
Decayed Wood - beneath cistern ..... 1095
Orange sand - north of cistern ..... 1089
Dert: brown mottled, yellow and gray, ..... 1098
and red/brown sand and sandy silt -north of cistern
Fee brown sand mottled with yellow and ..... 1110gray $=j 1 . t$
Fied/orange sand with pockets of ..... 1122 black/brawn and yellot silt --" andfill
K ..... AA

1. Brick floors and sand below floor
2. Strata above stone wall TC
3. Distrubed areas af cobble floor711
4. Sand stained with charcoal above cobble floor
5. Soil associated with pillar supports ..... 724, 734, 804
6. Soil among cobbles
7. Red sand bedding for cobble floor ..... 710
8. Red/brown and yellow/brown sand (AA) ..... 754, 755, 767 and brown sandy silt (AC) below cobble floor
9. Greenish gray sandy silt - ..... 247, 251, 253 801, 843
10. Green brown sandy silt -266, 267869
11. Gray and dark gray/black silt - (deposit GBS) ..... 270, 271 ..... 893, 906
12. Greenish gray sandy silt - (landfill deposit GS2)
274, 277, 282, ..... 925286
13. Brown silty sand - ..... 296
(landfill ?)
14. Brown/orange, gray and tan coarse ..... 298, 302 and fine sands (river bottomdeposits?)

## LOT 10* - FRONT PORTION

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| 4. | 663, 737, 753 | 666 | 457 |
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| 6. | 720 |  | 467 |
| 7. | 757 |  | 469 |
| 8. |  | 713, 725 |  |
| 9. | $768,798,813$ | 714, 743 |  |
| 10. | 848, 866 | 772 |  |
| 11. |  |  |  |
| 12. | 885 | 832 | $\begin{aligned} & 471,477,482 \\ & 483 \end{aligned}$ |

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LOT 10* - SOUTH PART
TC X
Rubble between brick floor and wood planking
Red/brown sand - southeast 644 corner of T.C.
Wood floor670, 684, 695
Dark gray silty sand below floorwest portion of T.C.
Deposits below wood floor level - ..... $708,717,726,723$,
east and central portions of T.C.(may be associated with stonepillar supports)
Brown silty sand with charcoal ..... 834
(west portion of T.C.)
Red/brown sand (landfill) ..... 847, 852, 860
Yellow, tan, and gray silt ..... 868 (landfill)
Red/brown sand \#2 ..... 891
(landfill)
Gray brown sandy silt with shell ..... 897
(landfill)
Brown and rust silty sand ..... 900(landfill)
LOT 10* - SOUTH PART TC LRubble between brick floors232, 235, 238Brick floor and underlyingbrown mottled clayey siltand red/brown sand
Greenish gray sandy silt - landfill deposit GS2 ..... 250, 254, 258, 265, 268, ..... 272, 275
Red sandy silt (landfill)245, 248
Gray/green/ black sandy silt
(landfill)
(landfill) ..... 287280, 285
Mottled gray/orange silty
sand
(river bottom deposits?)
Stratum I - surface rubble ..... 77
Stratum II - brown silty sand ..... 80, 89
Stratum III - greenish brown sandy silt
Stratum IV - light brown sand ..... 121
Stratum V - dark brown sandy silt ..... 128
with shell, bone, and charcoal
(possible occupation deposit)
Stratum VI - dark brown sand - wall trench ..... 137, 145
Stratum VII - tan sand - ..... 140, 144, 153landfill
Strata VIII and IX - brown and tan sand - 157, 163, 167, ..... 173 landfill
Stratum X - wood stain ..... 179
Stratum XI and XII - tan sand and mixed tan ..... 183, 185gray sand - landfill?
Stratum XIII - red sand "river bottom" ..... 188, 191
Concrete floor and sandy soil ..... 745 with rubble
Trench for wall - S portion of T.C. ..... $746,786,805,825$
Layer of rocks ..... 785
Pit for installation of brick feature ..... 809
Decaying mortar and shell ..... 797, 818; 978
Miscellaneous contexts825, 870
Gray and black silt with charcoal ..... 845, 856, 881, 987, 1003
domestic midden deposit
Transitional midden/landfill ..... 898
Soil within circular brick feature ..... 928, 934, 948, 977, 940
Wall trench east of feature$66,75,116$
Strata II and V
Deposits outside and above top ..... $62,70,74,72,79$,
of feature
Strata I, III, IV, VI
Deposits within feature and area ..... 87, 94
above feature - Strata VIIa and VIIb
Deposits outside and below top of ..... $109,117,122,125$
feature - Strata IX, X, XI
102, 130, 139, 147 ..... 102, 130, 139, 147
Brown sandy silt in feature
Stratum VIIc - VIIf
146, 149
Blackish brown sandy silt in feature
Stratum XII
Blackish gray clayey silt in feature ..... 156, 161, 165
Strata XIII and XIV
Brown/tan and gray fine sand in feature ..... 170, 175, 181
Strata XV and XVI
South wall trench cutting through south ..... 105, 136, 178
part of feature - Stratum VIII
Gray brown sandy silt within feature ..... 182, 189, 198
Strata XVII, XVIIIa, XVIIIb
Sandstone slabs and brick feature ..... 201
Stratum XVIIIc
Brown sandy silt below feature wall and below ..... 213, 217, 222
slabs - Stratum XIX
Dark brown silty sand at base of feature ..... 223
Stratum XX
Gray silt below feature ..... 244
Stratum XXI
Overburden ..... 764
Dark gray brown silty sand with charcoal ..... 784, 792
mortar and brick overlying mortar floor - floor \#1
Orange/tan silty sand - demolition debris from ..... 806
building associated with wooden floor -
floor \#2 (Van Vleck house?)
Shallow "pit" dug through southwest corner of ..... 862
floor \#2 - Orange/tan silty sand
Wood and yellow and orange silt - floor \#2 ..... 853, 884, ..... 888
(Van Vleck?floor)
Light brown fine sand between floors \#2and \#3 ..... 854
Gray ashy silt lens between floors \#2 and \#3 ..... 872
Gray/brown sandy silt and artifacts on mortar ..... 919, 920 floor \#3 (Lakerman floor?)
Dark brown mottled sandy silt underlying floor \#3 ..... 931 landfill
Overburden ..... 524
Brown silty sand below overburden ..... 540, 551, 591
Dark brown/black sandy silt - trench ..... 548above "trough"
Soil above north south planking (brown mottled, yellow mottled and

592, 607, 554, 557

564, 577red/orange)Wood planking and underlying brown silt
Brown silty sand above bulkhead - landfill ..... 698, 707, 765

698, 707, 765
Green silt above bulkhead - landfill
Green silt north of bulkhead - landfill ..... $799,816,820,827$ ..... 850

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Pocket of red sand north of bulkhead - ..... 855 landfill.Brown and gray sand south of bulkhead -landfillRed/brown sand south of bulkhead - landfillGray silt and clay (not screened)river bottom deposits576, 628, 639652, 656, 660, 685730766, 788

576, 628, 639 730
$778,787,865,873$
778, 787, 865,
901, 903, 916, 985 ..... 985
Concrete floor and cinder bedding - ..... 10 Stratum I
Reddish/brown sand - Stratum II ..... 11
Black sand - Stratum V (part of TC) ..... 23
Intrusive burrow - Stratum IV ..... 19, 28, 40, 45, 49
Red sand - Strata VI and VII ..... 25, 27
Yellow hand packed silt - Stratum VIII ..... 32
Red sand - Strata IXa - IXh (landfi.il)37, 44, 48, 55, 66,$65,73,82$
Brown sand with clay mottling - Stratum IXi ..... 83
(landfill) - west portion of TC
Red sand mottled with green/yellow silt - ..... 91
Stratum X - east portion of TC
Gray sand among rocks - east portion of TC - ..... 111 Stratum XIa
Mottled green/yellow silt with some gray sand ..... 131
in NW corner - Strata XIb and XIT (LF-DW):
Gray sand with pebbles and green silt lens - ..... 135, 142
Stratum XIc - XId - northwest corner (RB-DW) ${ }^{2}$
Gray/brown sand with pebbles - northwest corner ..... 150
Stratum VIII ("river bottom" deposits)

## Lot 26-TEST EUT AJ



```
                    I
Lot 2G* Test Cut AS
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Feddish Erown Sandy Sist - Dverburden & 1085 & & & & & \\
\hline Erownich sendy - inandfil. & 1105 & 1112 & 1121 & 1123 & 11.2 & 1138 \\
\hline Grayish silty - Landfill & 1158 & 1. 161 & 1167 & 11.7 & & \\
\hline Fied sand near north stone wall & 1187 & & & & & \\
\hline Fied and Drange/Fust sand - Lemdfill & 1192 & & & & & \\
\hline Bray silty mand & 1203 & & & & & \\
\hline Gray Silt - Fiver Eottom Silt & 1216 & 1231. & not & にreer & ed) & \\
\hline
\end{tabular}
```


## Lot 2心* - Test Cut AB

```
Erict: floor (southern portion of TO) 1099
Fied Sand (southern portion) - bedding 1100
for floor
Erown silty Eand with rubble - deposjt 1086 1097 1117
above and inside trough
Dark gray olay and sand at bottom of 1146
trough
Wooden trough and associated soil 116e
Gtones and rubble at top of stone wall 1149
Gray sendy silt, tan silt, orange 1129 1134
sand (eamt gf trough) -- landfill
Various colored sandy silts and silty 1172 1182 1189 1210 1222
samds - landfill 1205 1213 1225*
```

(*deposit not screened)

TC AO ..... ST 16 ..... ST 22
Overburden ..... 1150
Red/brown and brown ..... 1162 gray sandy silt north portion
Rubble between brick ..... 1075
and wood floors ..... 1080
1082
Soil between burned ..... 1093 ..... 507
floor and ceramic ..... 1096 ..... 509
deposit ..... 1103542
Disturbed ceramic deposit ..... 1108
west portion - dark brown ..... 1112
silty sand with rocks ..... 1126
Red/brown sand with ..... 1127
ceramics (undisturbed ..... 1147

516
783 1151 ceramic deposit)
Below mortar floor11601178

## Lot 27* - Test Cut AT

```
Brown silty sand with mortar
(trench to install feature)
Brown sand witm tricl: and racks 1144 1170
(pit below feature)
Mixed deposit= #1 (mostly brown 1119 1124
Mixed deposits #2 (brown silty sand, 11ड1
yellow silt, gray clay)
Mixed deposits ## (mostly yellow silt, 115S 1159
blue gray clay;
Blue/gray mlay 1171
Feddish brawn sand (l.andfill) 1180 1198 1195 1200
```

Deposits between floor \#12and floor \#2 (rubble)
197, 200 ..... 252, 255
Floor \#2 ..... 207 ..... 260
Between floors \#2 and \#3(brown/gray silty sand)
Floor \#3210, 224, 227, 276, 283234,241
230
289, (barrels)294
Deposits under floor \#3
242, 311, 249, 299, 305, ..... 310
315, 269 ..... 313, 314
Strip near north wall ..... 320
Privy deposit- level 1 ..... 256
west side
Privy deposit level 2 ..... 261
west side
Privy deposits levels 1 ..... 279
and 2 - east side
Privy deposit - level 3 ..... 293
Privy deposit - level 4 ..... 430
Orange/tan/rust sand ..... 434, ..... 492below privyMottled red, brown, orange,sand bands (landfill)

Lens of dark brown/black organic silt (landfill)
Gray silt (river bottom376393

493, $316,324, \quad 312,321,326$, $325,328,340,338,352,361$, $344,350,360,366,377,382$, 369 389

341, 349 376
TCJ ..... TCM


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