ARCHAEOLOGICAL BORINGS AND TEST PIT MONITORING
SCHERMERHORN ROW BLOCK
BOROUGH OF MANHATTAN
CITY OF NEW YORK

by
Arnold Pickman

Submitted To:
THE SOUTH STREET SEAPORT MUSEUM

January 2000

TABLE OF CONTENTS

I. INTRODUCTION

A. Background

The South Street Seaport Museum is undertaking a program of renovation and new construction on Block 74 in the Borough of Manhattan, bounded by Front, South, Fulton and John Streets. This block, known as the Schermerhorn Row block, was designated as a New York City Landmark by the New York City Landmarks Preservation Commission in October 1968, and was approved for listing on the National Register of Historic Places in February 1967. It was also included within a larger South Street Seaport Historic District which was listed on the National Register of Historic Places in October 1972 and designated as a New York City Historic Landmark by the Landmarks Preservation Commission in May 1977 (Pokorny 1990). Structures stand on all of the lots within block 74, with the exception of a vacant lot at the corner of South and John Streets. The vacant property extends for approximately 90 feet along John Street and 60 feet along South Street.

The land which now constitutes block 74 was created ca. 1807 by the deposition of landfill in the East River. Structures were first erected on the block ca. 1810 by two New York City merchants, Peter Schermerhorn and George Codwise. Many of these structures, including the Schermerhorn Row buildings fronting on Fulton Street, have undergone relatively minor modifications. Others have undergone more extensive modifications, and on some lots the original structures were replaced by others later in the 19th century. The currently vacant lot contained four structures erected by George Codwise in 1810 that stood until 1956, when they were demolished and an automobile service station erected on the site. The service station was demolished during the 1970's.

The current construction program being undertaken by the Seaport Museum will proceed in two major phases. The first will involve renovations to standing structures, and construction of an atrium and entrance facilities in an area at the rear of the standing structures. The second phase of the project will involve the construction of a new six-story building on the vacant lot at the corner of South and John Streets.

After a review of the project, the New York City Landmarks Commission determined that an archaeological documentary study of the proposed building site at the corner South and John streets should be prepared. This study (Pickman 1999) was submitted to the South Street Seaport Museum in April 1999. The study objectives were to detail the history of the site, determine its sensitivity for the presence of potentially significant archaeological resources, determine the probable type, extent and significance of any such resources, and recommend any future archaeological field investigations which may be appropriate. The study concluded that the site had the potential to contain intact significant archaeological resources and that exploratory excavations should be conducted prior to construction to determine if mitigitive actions would need to be taken.

Review of records of prior soil borings taken in the vicinity of the site suggested that it is likely to contain approximately 20 feet of landfill deposited in the early first decade of the 19th century and that this fill would be underlain by some 10 feet or more of silts deposited on the river bottom by natural processes prior to the landfilling. Since preliminary construction plans indicated that only limited disturbance to the landfill and river bottom deposits would occur, it was anticipated that the exploratory excavations would be focused on the upper portion of the stratigraphic sequence on the site, which could include intact or partially truncated 19th century backyard features and/or the remains of piers and cribbing structures dating to the 18th and/or early 19th centuries.

After review, the Landmarks Preservation Commission approved the study recommendations. After discussions with the consulting archaeologist, the Museum decided that these exploratory excavations would be conducted after completion of Phase I of the renovation project, as it was anticipated at that time that this first phase would not involve subsurface disturbance to the proposed building site.

The 1999 documentary study did not include the remainder of the Schermerhorn Row block. Documentary research on the history of the standing structures had previously been conducted in connection with the preparation of an historic structures report (New York State Office of Parks and Recreation 1974). In addition, archaeological field investigations were conducted on this portion of the block in the late 1970's and early 1980's in connection with prior renovations of the buildings. In the first of two archaeological projects, conducted in 1977, the archaeologists recorded seven test pits excavated by a foundation contractor. Soil removed from the excavations by the contractor was screened and artifacts recovered (Larrabee and Kardas 1979). The second archaeological project was conducted intermittently between 1981 and 1983, but the report was not completed until 1991. During this project a number of units were excavated by the archaeologists in various portions of the block. Other units were excavated by the construction contractors and were recorded by the archaeologists after excavation (Kardas and Larrabee 1991).

B. Pre - Construction Borings and Test Pits

In December 1999 contractors retained by the Museum undertook preliminary investigations in advance of construction. These included five geotechnical borings conducted on the Phase II building site at the corner of South and John Streets. The South Street Seaport Museum agreed that this provided an opportunity for archaeologists to obtain preliminary information on the site stratigraphy, the cultural content of the landfill and river bottom deposits, and possibly confirmation of the presence of structural remains at the boring locations. The Museum also agreed that the boring contractors would provide the archaeologists with additional samples from these borings not otherwise required for geotechnical purposes.

The other pre-construction activity carried out by the Museum's contractors involved the excavation of four small, manually excavated test pits at the rear of the standing structures in order to examine the condition of the foundations of these buildings prior to installation of support columns for an atrium and entrance facilities as part of the Phase I renovation project. At the request of the Museum, archaeologists monitored the excavation of these test pits to assure that no significant archaeological deposits would be disturbed. The Museum's agreement with the contractors specified that the archaeologists would be able to record the test pit stratigraphy as they considered appropriate, and that excavations would cease or be altered should the archaeologists determine that significant archaeological resources were present at the test pit sites.

Observation and recording of the borings was conducted on December 6 - 9, 1999 and observation of the test pit excavations on December 8, 1999. The field work was conducted by the archaeological consultant, Arnold Pickman (RPA) and by South Street Museum archaeologist Diane Dallal (RPA). Laboratory processing of material recovered from the boring samples was conducted by Diane Dallal. The present report was prepared by the archaeological consultant.

C. Acknowledgments

We would like to thank Mr. Steven Kloepfer of the South Street Museum for his cooperation. Our thanks also go to the staff of Gregory Pillori Geotechnical Engineering; Warren George Inc., the drilling contractor; and Smith Brothers of Wharton, New Jersey, the general contractor for the test pit excavations, for their cooperation and assistance. Thanks also to Diane Dallal for processing the artifacts and reviewing a draft of this report.

II. ANALYSIS OF BORINGS

A. Methodology

The approximate locations of the five geotechnical borings were selected by the consulting engineer and geotechnical contractor. The locations as measured in the field by the archaeologists are shown on Figure 1. This figure also shows the projected locations of 18th and early 19th century piers and cribbing structures and the backyard areas of the structures erected on the site ca. 1810 as determined by analysis of historic period maps and other data (see Pickman 1999).

Borings B-1 and B-4 were located within the footprint of the building which formerly stood at 37 Burling Slip (John Street), boring B-4 was within the footprint of 90 South Street, B-3 within the footprint of 89 South Street, and B-5 within the footprint of 88 South Street. None of the borings were at the locations of the backyard areas of these structures. Maps of the area and other data reviewed by Pickman (1999) indicate that the surface elevation of the site is approximately 4 - 5 feet above mean sea level.

The borings were conducted using a two foot long, two inch (1 1/2 inch inner diameter) split-spoon sampler. In each of the holes the asphalt and concrete and associated bedding material which constituted the uppermost one foot of the boring column was penetrated by a rotary drill bit. By agreement between the South Street Museum and the contractors, in three of the borings (B-1, B-2 and B-3), samples were taken continuously from this point to a depth of thirty feet beneath the surface. In the other two borings (B-4 and B-5) the normal geophysical sampling procedure was followed and samples were only taken at five foot intervals. After a small portion of each sample was taken for analysis by the geotechnical contractor, the remainder of the sample was screened through 1/4 inch mesh. Cultural materials recovered were placed in appropriately labeled plastic bags and returned to the laboratory for analysis and tabulation.

A description of the soils encountered by and a tabulation of the materials recovered from each sample is presented in Appendix A to this report.

The procedure used by the drilling contractor during the continuous sampling was to obtain one to three successive samples. The sampling tube was then withdrawn from the hole and an approximately six inch diameter rotary "roller bit" drill inserted into the hole with water circulated down the drill hole in order to wash out the loosened soil. When the drill bit reached the maximum depth at which samples were previously obtained, it was withdrawn from the hole and the sampling tube reinserted. Two techniques were used to prevent the collapse of the soil around the hole. The first involved the addition of a thickening agent to the water circulated into the hole to prevent the external pressure from collapsing the hole. Where necessary, a metal casing was inserted into the previously drilled portion of the hole. As the depth of the hole increased as a result of subsequent drilling the casing was driven downward to the corresponding depths.

In assessing the results of the borings for archaeological purposes, the limitations of the techniques used, in addition to the small size of the sample obtained, should be noted. In only a few of the samples, for example, was the entire tube filled with soil. This could be due to several factors, including compression of the soil in the sampler, the presence of small rocks which blocked the "nose" of the sampling tube preventing additional soil from entering, and the fact that most of the soil was recovered from beneath the water table causing soil to be washed out of the sampler. In addition, frequently some of the overlying soil loosened by the drill bit is not washed out of the hole, and this soil is present at the top of the sample. In some cases, the intrusive nature of this material may not have been noted in the field. Therefore it is possible that artifacts recovered from a given sample may actually have derived from higher in the boring column. In some cases, however, artifacts were noted as firmly imbedded in the *in situ* soil at a given depth.

Since the sampling tube was often only partially full after withdrawal from the boring, the within-sample stratigraphy as presented in Appendix A has been approximated. If, for example, the sample tube contained less than two feet of a single soil type, we have assumed that the full two feet sampled consisted of that soil type. Where more than one soil type was present we have extrapolated the fraction of the sample represented by each type to the full two foot depth sampled. For example if approximately half the sample within the tube consisted of soil type A and the second half type B, we have assumed that the upper foot of the two feet sampled was type A and the lower foot type B, even though the tube may have actually contained less than the full two feet of soil.

In addition, the small sample size and the wet soil conditions may have led to some inaccuracies in the description of soil colors, and minor differences may have been overlooked in some cases.

B. Expected Stratigraphy

As discussed in the documentary research report (Pickman 1999), consideration of the history of the site and the results of the previous archaeological work conducted on the Schermerhorn Row block suggest that "primary" landfill deposited when the block was filled-in would be overlain by a "secondary landfill" deposit associated with the construction of the ca. 1810 buildings. These "secondary fill" deposits would be expected to be possibly overlain, in turn, by deposits associated with the filling-in of any cellars or crawl spaces which may have existed in the buildings which stood on the site, with the demolition of the ca. 1810 structures, and/or with the construction or demolition of the automobile service station which stood on the site between 1956 and the 1970's. The secondary fill deposits would be underlain by the "primary landfill" material that was deposited by 1807, prior to construction of the Codwise buildings. This primary fill deposit would be underlain in turn by silts and clays deposited at the bottom of the East River subsequent to the inundation of the site as a result of post-Pleistocene rise in sea levels. The river bottom silts and clays would be underlain by Pleistocene outwash strata which would not contain cultural materials.

C. Analysis of Boring Results

Some inferences about the site stratigraphy and cultural content of the landfill and river bottom deposits and the possible presence of structural remains can be made based on the boring results. It should be emphasized, however, that any conclusions based on such small samples can only be considered as tentative, and should be confirmed by archaeological testing where possible.

1. Upper Deposits

In the five borings conducted there appeared to be a change in soil type at approximately 9 - 11 feet below the present surface. The fill deposits below this depth were recorded as being gray/brown, red/brown or gray/red/brown in color. In general, the soils above this depth appeared to be browner in color. The deposits below this depth also appeared to have a higher silt content than the overlying deposits. The 9 - 11 foot depth of this soil change is somewhat greater than the base of the "upper fill" deposits as identified by Kardas and Larrabee (1991).

The cultural material obtained from the boring samples above the 9 - 11 foot depth were mainly construction-related. Many samples contained a large number of brick and mortar chips, most of which were discarded in the field and not included in the laboratory tabulations. Three nail and two window glass fragments were also recovered from this material. This would tend to support the conclusion that at least some of this material was deposited during construction of the buildings.

In three of the borings, deposits associated with activities which apparently post-dated the deposition of the "secondary fill" were encountered in the uppermost portion of the boring. In boring B-1, placed within the footprint of 37 Burling Slip, three distinct soil types were noted above nine feet; tan/brown sand between one and three feet, gray/brown silty sand between three and 6.5 feet, and light brown silty sand between 6.5 and nine feet. In boring B-4, also placed within the footprint of 37 Burling Slip, a layer of silty sand stained a black/brown color by the inclusion of coal fragments was encountered between 2 and 3 feet. These results suggest the possibility that a shallow basement or crawl space may have existed in this building.

Boring B-2, located within the footprint of 90 South Street, encountered a deposit of concrete rubble to a depth of 6.5 feet below the surface. The roller bit was used to drill through this deposit. It should be noted that the profile of a construction trench excavated in 1981 and recorded by archaeologists during the final portion of the then-ongoing archaeological project (see Pickman 1999, Appendix F) indicates the presence of a pit filled with concrete rubble some 40 feet west of the location of boring B-2. It is possible that both the deposit encountered in 1981 and that encountered by Boring B-2 represent a

trench or pits dug by the contractor to dispose of rubble at the time of the demolition of the automobile service station.

2. The Lower (Primary) Fill Deposit

Most of the samples obtained below the 9 - 11 foot depth were noted as consisting of sand or silty sand and were grayer and/or redder in color than the overlying deposits. This stratum is interpreted as representing the lower or "primary" fill deposit. It extends to a depth of 17 - 22 feet below the surface in all of the borings except boring B-2, where it extends to 29 feet. In boring B-2 a thin (ca. six inches) band of gray organic clayey silt similar to the material representing the river bottom deposits (see below) was encountered at 27 feet, two feet above the actual beginning of the latter deposits. This band of soil may been dislodged from the river bottom and incorporated into the landfill during its deposition during the first decade of the 19th century.

The results of the five borings indicate that the primary fill deposits encountered at these locations consist of a largely sandy matrix and do not appear to include significant quantities of boulders or large cobbles. Even the extremely small samples recovered from the borings suggest that this fill contains a significant quantity of artifacts. The recovered material includes two pearlware sherds. An additional pearlware sherd and three creamware sherds recovered from the river bottom silts also may have been originally deposited with the landfill (see below). Pearlware is a ceramic type manufactured in England between approximately 1775 and 1840 (Janowitz 1995) - dates which are consistent with the date of landfill deposition on this site. The landfill also yielded 17 small clam and oyster shell fragments, most likely representing food remains. The landfill samples also yielded 103 small brick fragments and thirty three wood fragments. In addition, two lithic fragments, worked and utilized by Native Americans were recovered from the landfill. One of these was a small chert "flake" removed from a larger cobble, which appears to have had one end modified as a graver tip. This flake also appears to show use wear. The other artifact is a small chert pebble which appears to have had flakes purposefully removed from one side. This artifact also shows use wear. The recovery of these artifacts suggests that the locations from which the fill material was obtained had been utilized by Native Americans, and their artifacts incorporated into the landfill. Such finds have also been reported from the landfill excavated at other lower Manhattan sites (see e.g. Rothschild and Pickman 1990).

3. River Bottom Deposits

Underlying the landfill, all of the borings encountered deposits of organic silts, clays and silty clays representing sediments deposited on the bottom of the East River prior to the landfilling of the site. Since continuous sampling was conducted only to 30 feet, the transition between these silts and the underlying Pleistocene deposits was encountered only in boring B-1. In the remainder of the borings the transition was not included in the samples obtained, but in all cases the base of these river bottom deposits was between 30

and 35 feet below the surface. Immediately underlying the silts is a deposit of gray sand and silty sand, representing a transition between the river bottom deposits and the underlying Pleistocene material. This transitional stratum was sampled in borings B-1, B-2 and B-4. It most likely also underlay the river bottom silts in unsampled portions of borings B-3 and B-5. The artifacts recovered from it in borings B-1 and B-4, including the large number of wood fragments recovered from boring B-1, apparently derived from the base of the overlying river bottom deposits.

As noted in the documentary research report (Pickman 1999), excavations at other lower Manhattan archaeological sites located closer to the original East River shoreline have sampled the river bottom deposits, and artifacts have been recovered from these sediments. Such artifacts would either have been deposited in the East River prior to the landfilling or have been included in the overlying landfill. In either case, the artifacts would sink into the soft clays and silts. Such artifacts were recovered from the borings conducted for this project, and were present throughout the river bottom deposits including its basal portion and the underlying gray sand and silty sand "transitional" material. These artifacts include the pearlware sherd and three creamware sherds noted above. Creamware was manufactured between 1762 and 1820 (Janowitz 1995) and also could have been deposited either with the landfill or prior to its deposition. Two pieces of bottle glass were also recovered from these river bottom deposits. Three additional pearlware sherds and one additional creamware sherd recovered from material washed out of the drill hole in boring B-3 most likely originated from the river bottom material.

Two small Native American pottery sherds were recovered near the bottom of the river bottom silts in boring B-2. We considered the possibility that these sherds may have derived from an *in situ* prehistoric site and have been incorporated into the river bottom silts at the time this site was inundated by the rising waters of the East River during the Holocene period. A number of sea level curves have been published which indicate the approximate sea level at various times during the Holocene. Such curves are produced by radiocarbon dating of organic material from the base of river bottom and/or marine deposits. The organic material represents vegetation which grew at the time that rising sea levels first inundated the land. The dates obtained are then correlated with the depth of the sample below present sea level. Figure 2 represents a curve based on samples obtained from the Hudson River in New York City. Using this curve, the approximately -30 foot elevation of the base of the river bottom silts as encountered in the five borings conducted corresponds with a date of inundation of approximately 6100 years before the present. Other curves examined give dates as recent as approximately 4750 B.P. Either date corresponds with the pre-ceramic Archaic period of prehistoric occupation. Therefore, the ceramic sherd recovered from boring B-2 would not have been associated with an *in situ* occupation, and was either deposited in the River during prehistoric times from a site along the shoreline, or was deposited with the landfill material and eventually sank into the underlying river bottom material.

Although five small fragments of clam shell were recovered from the river bottom deposits, eight small fragments tabulated and other fragments noted in the field were

oyster shell. This shell was most likely deposited as a result of cultural processes. Unlike clams, which live in such silts, oysters anchor themselves to hard surfaces and require water flowing over them.

Two nut and two seed fragments were also recovered from the river bottom samples, one identified as hazelnut and another as a melon or squash seed. While these remains could have been deposited in the silts as a result of natural processes, they most likely represent food remains.

The boring samples from the river bottom deposits yielded a large number of wood fragments. Most of these were very small fragments and could represent either cut or otherwise worked wood or unworked wood derived from twigs and dead trees. Some fragments appeared to represent tree bark. However, a substantial number of the wood fragments were definitely cut or otherwise altered by human agency. In some cases, the sampling tube had apparently penetrated larger pieces of wood, resulting in the disc shaped pieces noted in some of the boring samples. Some of the cut wood consisted of thicker pieces which apparently derived from wooden planking.

Most of the wood fragments were recovered from samples taken from borings B-1 and B-3. The greatest amount, including the "planking" fragments, was recovered from the base of the clayey silt and the top of the underlying transitional silty sand in boring B-1 and near the base of the clayey silt in boring B-3. In the latter boring the river bottom deposits also yielded a large quantity of vegetable fibers. These were included in the samples taken from 23 - 27 feet below the surface, and large quantities were washed out of the casing after drilling at this depth. The samples containing these fibers were immediately above those in which the wood planking was encountered. These fibers were much greater in size than the fine organic fibers included in samples of the river bottom strata in the other borings. Initial field examination suggested that they might represent the remains of marsh plants which grew at this location. However, this material was not recovered from the other borings, and it was considered unlikely that the marsh would be localized to this extent. After examination in the laboratory it appears that this material actually represents wood fibers, perhaps associated with the planking encountered in the succeeding samples. The fibrous material may have resulted from the natural decay of planking at this location (see also discussion in Chapter IV).

III. TEST PIT MONITORING

Four small test pits were manually excavated by construction personnel, under the supervision of the geotechnical contractor, in the area at the rear of 91 South Street (test pit 4), 6 Fulton Street (test pit 3), 10 Fulton Street (test pit 2) and 12 Fulton Street (test pit 1). The locations of these tests as measured in the field by the archaeologists are shown on a copy of the map indicating the locations of the archaeological work carried out in the late 1970's and early 1980's (Figure 3). It should be noted that test pit 2 was actually located slightly to the west of the planned location as shown on a map provided by the consulting engineers.

The locations at which these pits were dug were within the original backyard areas of these structures and as such would have been considered as archaeologically sensitive. However, the renovation project conducted in the late 1970's and early 1980's resulted in extensive disturbance to this area.

The late 1970's - early 1980's renovations included construction of a covered passageway with a concrete floor at the rear of the buildings facing Fulton Street. Test pits 2 - 4 were located in this area, with the concrete floor removed using jackhammers. Test pit 1 was placed in an open area at the rear of 12 Fulton Street, at the approximate elevation of the first floor of the building and at the base of a stairway which leads upward to the roof of the covered passageway noted above. A "flagstone" pavement present on the surface at this location was removed prior to excavation.

Each of the test pits measured approximately 3 - 3 1/2 feet on each side at the surface. However the size narrowed with depth so that the area disturbed at the base of the test was typically approximately two feet or less on each side.

Test pits 1, 2 and 4 exposed the upper portions of the original stone foundation walls of the ca. 1810 structures. As shown in an illustration based on the 1977 archaeological investigations and included in the 1979 report (Larrabee and Kardas 1979), these foundation walls typically consisted of three segments, becoming increasingly wider with depth. The stone wall was underlain, in turn, by wooden spread footers (see Figure 4).

In test pit 4, all three sections of the stone foundation underlying the rear wall of 91 South Street were exposed (see Figure 5). The uppermost section, on which the brick wall rests, extends for two feet below the base of the brick superstructure wall, with the second section extending for an additional 20 inches below the uppermost section, and the third section continuing downward from this point. Test pit 4 was excavated to a depth of some five feet below the concrete floor without reaching the base of this stone wall. However, probing by the excavators encountered what appeared to be spread footer planks at a depth of approximately 6 1/2 feet, which is approximately the depth at which they were noted by Kardas and Larrabee. The uppermost portion of the stratigraphy encountered in test pit 4 consisted of approximately 20 inches of tan sand apparently

deposited in connection with the construction of the one foot thick concrete floor. The sand was underlain to the base of the test pit by a deposit of reddish brown sandy silt, which contained fragments of brick and schist of the type used for the construction of the foundation. This may have been deposited at the time the building was constructed. Pieces of shell were visible in the walls of the test pit in this stratum, but no other artifacts were noted. During the excavation of this deposit the construction workers encountered and removed a piece of wood measuring 9 x 7 x 2 inches with two corroded nails or hooks embedded in it.

Test pit 1 exposed the upper portion of the foundation of the rear wall of 12 Fulton Street. At this location the brick superstructure wall extended to a depth of 27 inches below the existing surface. This was underlain by the uppermost section of the stone foundation, which was 12 inches high. Only the uppermost foot of the underlying second section of the foundation wall was exposed.

The southernmost portion of the test pit 1 stratigraphy had been disturbed by the installation of an iron pipe (see Figure 6). Additional disturbance to this area would have been caused by the construction of the brick "cantilever wall" on the west side of the test pit. This wall was apparently constructed during the ca. 1980 renovations and serves to support the covered passageway and the stairs noted previously. In the eastern wall of the test pit the two inch thick paving stones were underlain by an additional six inches of concrete followed by one foot of tan sand bedding material. This was underlain by eight inches of light brown sand containing pieces of mortar, followed by gray brown sand with brick and stone fragments to the base of the test. This latter deposit may represent an undisturbed portion of the upper fill deposits encountered in test pit 4. However, it should be noted that the map included in the 1991 Kardas and Larrabee report (see Figure 3) indicates that a trench had been excavated in this area during the archaeological project and the material encountered could represent soil backfilled into this trench.

Test pit 2 exposed the upper portion of the rear wall of 10 Fulton Street. At this location the base of the brick superstructure wall was separated from the approximately six inch thick uppermost section of the foundation wall by approximately one foot of mortar. The top of the underlying second section of the foundation wall was encountered at a depth of 38 inches below the surface (see Figure 7). The location of this test had been disturbed by the installation of a pipe located some three inches south of the foundation and encountered at a depth of 38 inches below the surface. Twenty two inches south of the brick superstructure wall two additional, four inch diameter, iron pipes were encountered at 17 - 19 inches below the surface. These pipes were underlain by concrete to a depth of 34 inches below the surface.

Test pit 3 was placed against the rear (south) wall of the covered corridor and exposed the concrete foundation of this wall. The entire area exposed by this test pit had been disturbed by the installation of two seven inch diameter iron pipes about two feet below the surface (see Figure 8). At a depth of approximately 50 inches, concrete was encountered extending some twenty inches outward from the concrete foundation to a

location beneath the southernmost of the two iron pipes. Probing by the excavators encountered the base of this concrete at approximately 62 inches beneath the surface. This concrete most likely represents an electrical duct. Probing by the excavators beneath the concrete floor immediately east of test pit 3 encountered what appeared to be another concrete duct extending northward from the rear wall of the corridor. What appears to be an electrical equipment room is located immediately south of the location of this test pit.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Borings at South and John Street

The results of the archaeological examination of samples recovered from five geotechnical borings at the site of proposed building construction at the northwest corner of South and John Streets confirmed the presence of approximately 20 feet of landfill deposits on this site, with the landfill deposits at one location continuing to a depth of 29 feet below the present surface. The results indicate that the landfill does not include large quantities of large cobbles or boulders and does not represent "clean" fill. The boring samples suggest that the landfill deposits include significant quantities of cultural material. In addition to domestic artifacts consistent with the period of landfill deposition, Native American lithic artifacts were also recovered from the small samples obtained from the borings.

Additional ceramics, other domestic artifacts, and shell and nut/seed fragments most likely representing food remains were recovered from the river bottom deposits. Two small Native American ceramic sherds were also recovered. These artifacts were either deposited in the river prior to the ca. 1807 landfilling or were deposited with the landfill and subsequently sank downward into the river bottom silts.

The recommendations included in the documentary research suggested that the primary landfill and river bottom deposits could be sampled during construction in conjunction with the planned deep augering for the installation of poured concrete support pilings. The boring results suggest that such sampling could yield significant quantities of artifactual material. It is suggested, therefore, that auguring of the upper portion of a sample of the holes excavated for the installation of piles be done under the supervision of an archaeologist. The soil removed by the auger from this portion of the hole would be screened and the artifacts recovered and processed in the laboratory. Approximate stratigraphic control could be maintained by noting the depth and soil type of the material removed by the auger. Specific procedures for this sampling would be determined in conjunction with Museum and construction personnel.

The results of the documentary research (Pickman 1999) indicated that a pier, known as the Bowne/Byvanck pier and initially constructed prior to 1767, was extended southward between 1776 and 1782 and would have been located at or immediately adjacent to the proposed construction site at the corner of South and John Streets. The location of this pier as reconstructed from 18th and early 19th century maps and other data was plotted on a map included in the documentary research report. This map is reproduced, with the boring locations indicated, as Figure 1 in the present report. As shown, two of the borings, B-1 and B-3, were placed at the plotted locations of this pier. Continuous samples were obtained from these borings. It may be significant that these were the only two borings in which large quantities of wood was encountered. This wood, including

what appear to be fragments of planking, was recovered from the basal portion of the river bottom deposits.

As discussed in the documentary research report the pier would most likely have been constructed using the "block and bridge" technique. This involved the sinking of stone filled timber cribbing at intervals (e.g. 30 - 40 feet) along the length of the pier. It is most likely that horizontal planking was attached to the sides of the cribs and extended between them, supported by piles driven into the river bottom. Deck planking would then have been laid transversely to this horizontal planking to form the surface of the pier. It was expected that the presence of *in situ* remains of the Bowne/Byvanck pier would be indicated by the presence of wood in the boring samples at the expected elevation of the deck planking, some five feet below the present surface.

It is possible that this deck planking was purposely removed prior to the deposition of the landfill to facilitate the landfilling process, or that the weight of the overlying landfill dislodged the planking from its original position. In either case, it is possible that after being removed from the surface of the pier, this planking sank into the soft river bottom silts and may be represented by the wood planking encountered at the base of the river bottom stratum in borings B-1 and B-3 and the large quantity of apparently decayed and shredded wood fragments recovered from the latter boring. The portions of the pier represented by the cribbing structures and the horizontal side planking may still remain *in situ*.

Although the stratigraphy as noted in the small boring samples must be interpreted cautiously, the boring results suggest that the uppermost "secondary" landfill deposit may have reached an elevation which is somewhat lower than that suggested by documentary research. This could indicate that the primary landfill deposits, and possibly the pier remains may be slightly deeper than previously assumed. Thus, during the recommended exploratory excavations, it may be advisable to extend at least some of the trenching to depths somewhat greater than initially planned.

During the monitoring of construction excavations in the early 1980's, a cribbing structure was noted at the corner of South and John Streets. This cribbing may have been associated with a wharf which extended along the north side of Burling Slip. Although the exact location of the observed cribbing is uncertain, its location as shown on the map included by Kardas and Larrabee (1991) is indicated on Figure 1. None of the borings were placed at this location. The closest, boring B-5, would have been located some 10 feet northwest of the location indicated on the Kardas and Larrabee map.

B. Schermerhorn Row Test Pit Monitoring - Summary

Three of the four small manually excavated test pits exposed the upper portions of stone foundations of the rear walls of the structures built on the Schermerhorn Row block ca. 1810. No features of archaeological significance were encountered by any of these test

pits. In three of the four test pits all or most of the excavated area had been disturbed by the installation of pipes or duct work during the construction conducted in the late 1970's and early 1980's.

V. REFERENCES CITED

Janowitz, Meta

1995 "Ceramics" in Sharla C. Azzizi, Diane Dallal, Mallory Gordon, Meta Janowitz, Nadia N.S. Maczaj and Marie-Lorraine Pipes "Analytical Coding System for Historic Period Artifacts. Cultural Resources Group, Louis Berger & Associates. pp. 5-62

Kardas, Susan and Edward M. Larrabee

1991 Summary Report of 1981-1983 Archaeological Excavation, The Schermerhorn Row Block. For Bureau of Historic Sites, New York State Office of Parks, Recreation, and Historic Preservation and New York City Public Development Corporation. Historic Sites Research.

Larrabee, Edward and Susan Kardas

1979 Report on Excavations at Schermerhorn Row. Ms. Prepared for the New York State Maritime Museum. Copy on File at the South Street Seaport Museum.

New York State Office of Parks and Recreation, Division for Historic Preservation, Preservation and Restoration Bureau

1974 Schermerhorn Row Preliminary Historic Structures Report. Parts 1 and 2. Ms. on file South Street Seaport Museum.

Pardi, Richard R.

1983 "Changing Sea Level and Shoreline" (Appendix II, Section II) in Historic Conservation and Interpretation, Inc. Westside Highway Cultural Resource Survey, Archeological Work Program: Cultural Resources Research. pp. A7-A22.

Pickman, Arnold

1999 Archaeological Documentary Study, Block 74, Part of Lot 20, Corner of South and John Streets, Borough of Manhattan, City of New York. Report Submitted to the South Street Seaport Museum. On File at the South Street Seaport Museum and the New York City Landmarks Commission.

Pokorny, Jan Hird

1990 Schermerhorn Row Block - Chronology of Events. Ms on File at the South Street Seaport Museum.

Rothschild, Nan and Arnold Pickman

1990 The Archaeological Evaluation of the Seven Hanover Square Block: A Final Report. Submitted to the New York City Landmarks Preservation commission. (6 vols.).

FIGURES

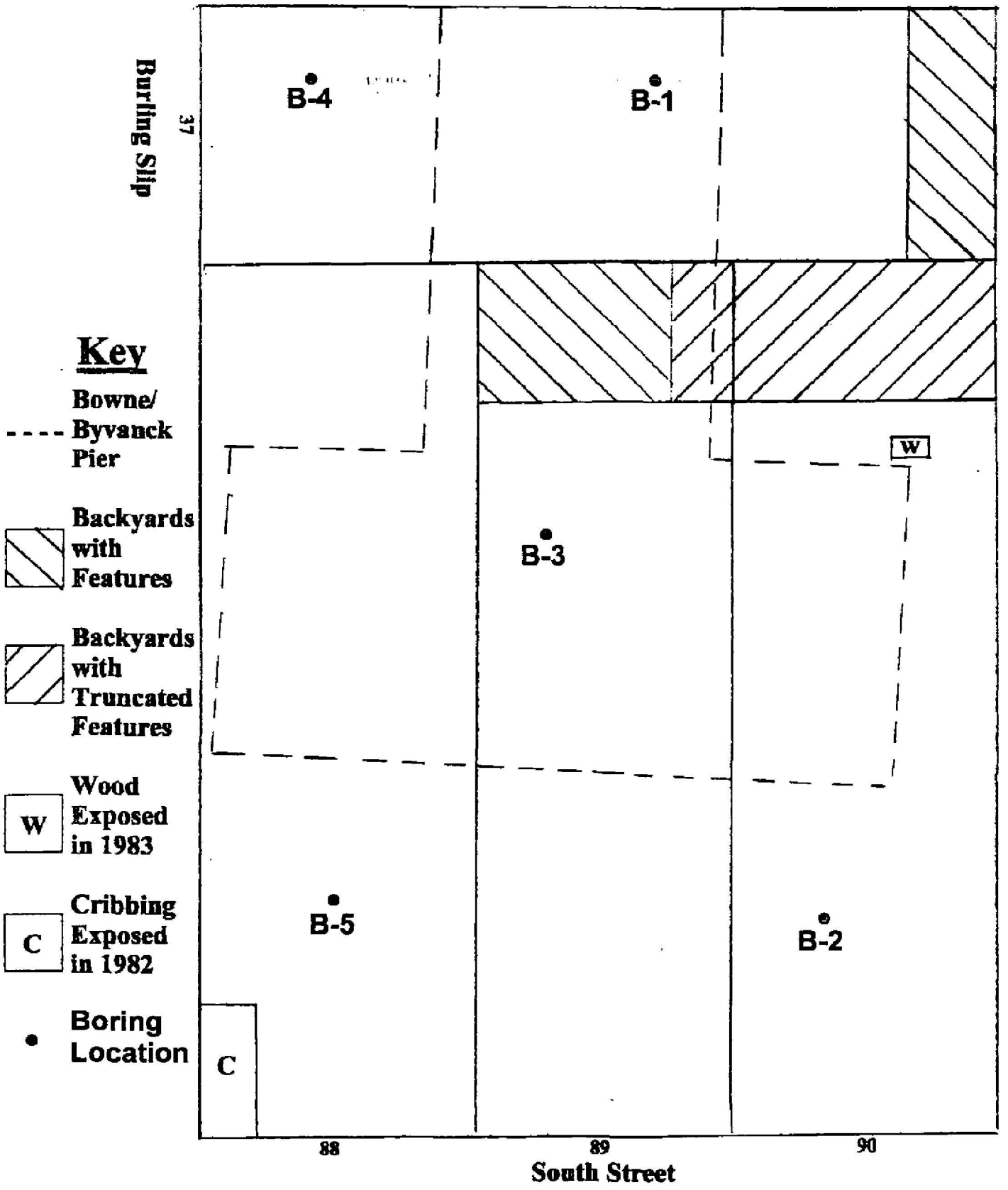

Figure 1
Location of Borings

Scale: 1" = Approximately 10.5'

Base Map From Pickman (1999, Figure 48)

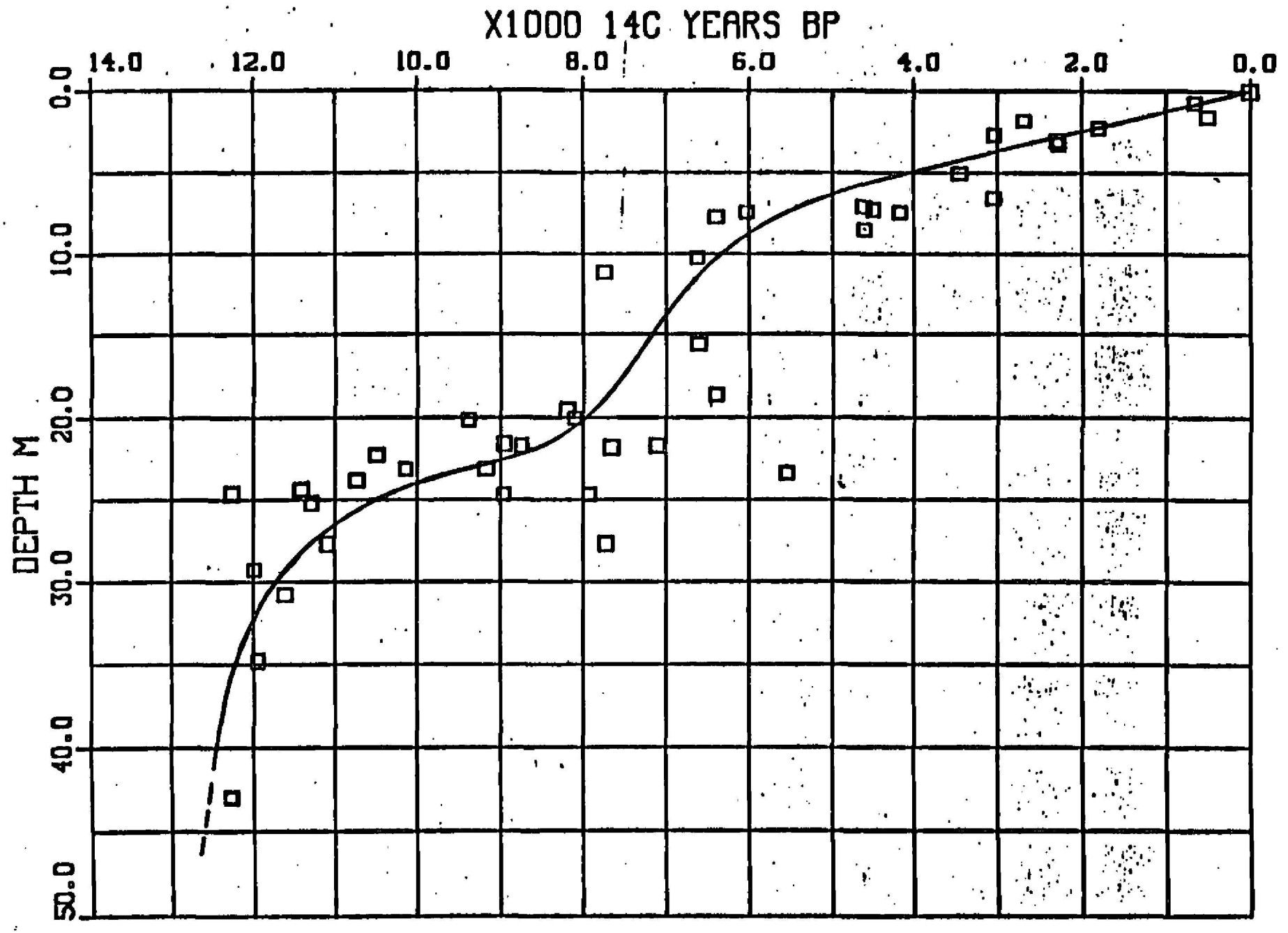

Figure 2
Local Relative Sea Level Curve - Hudson River
Source: Pardi 1983: A-11

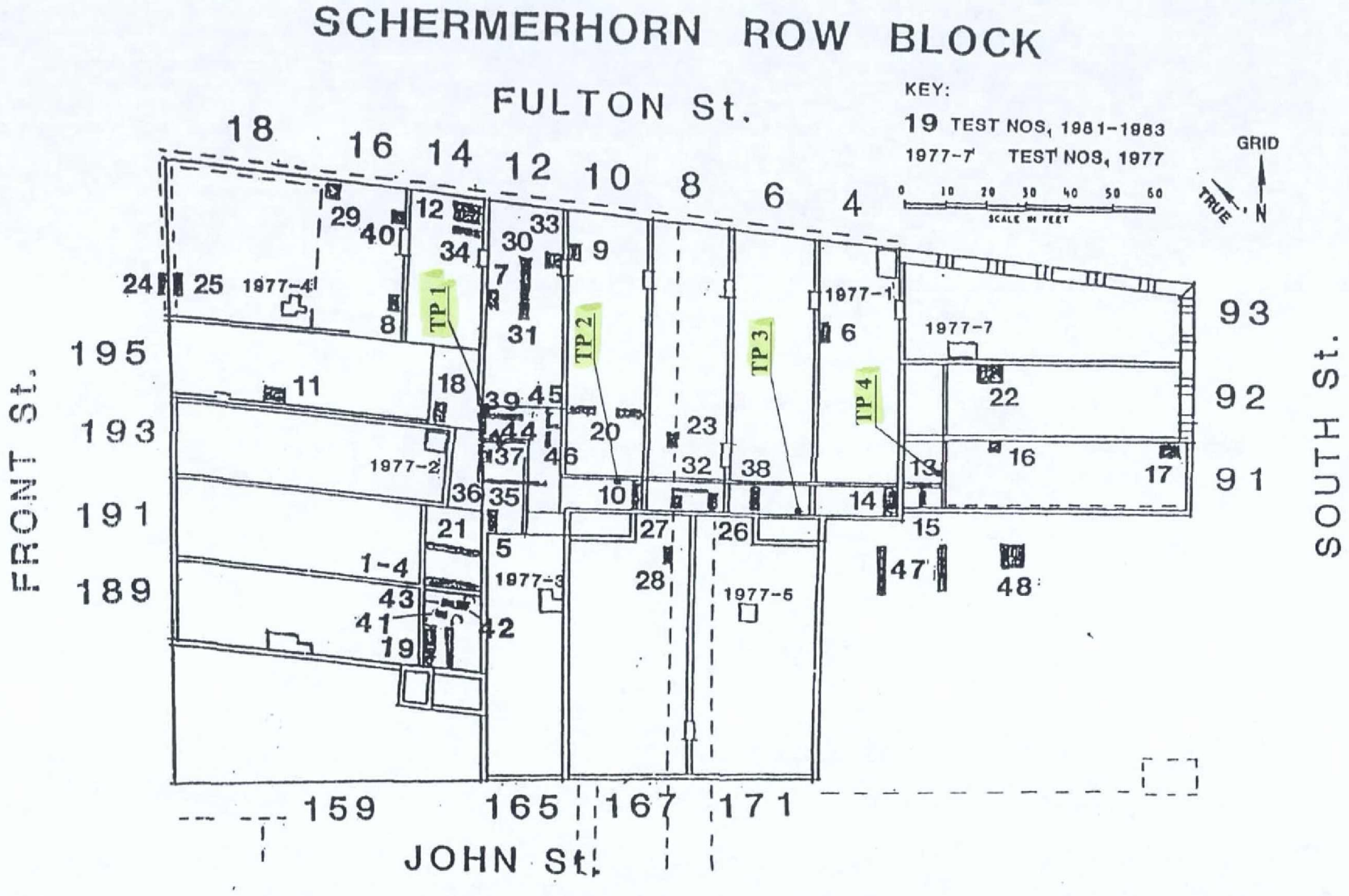

Figure 3
Test Pit Locations
1981 -1983 Schermerhorn Row Block Archaeological Site Map
From Kardas and Larrabee (1991:15)

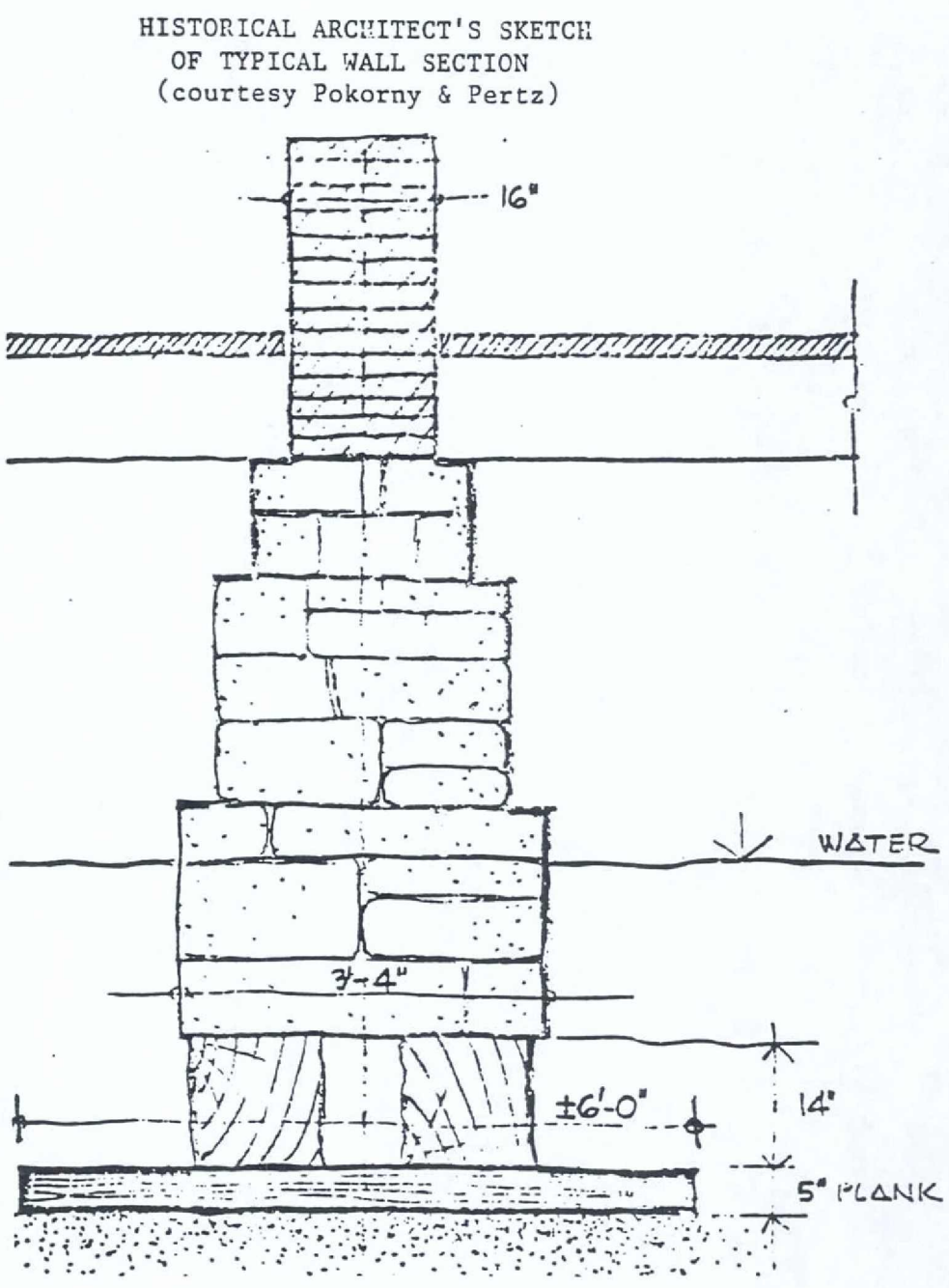

Figure 4
Schermerhorn Row Block - Typical Foundation Wall Cross-Section
Based on Results of 1977 Excavations
(Source: Larrabee and Kardas 1979)

Figure 5
Test Pit 4
View Facing East

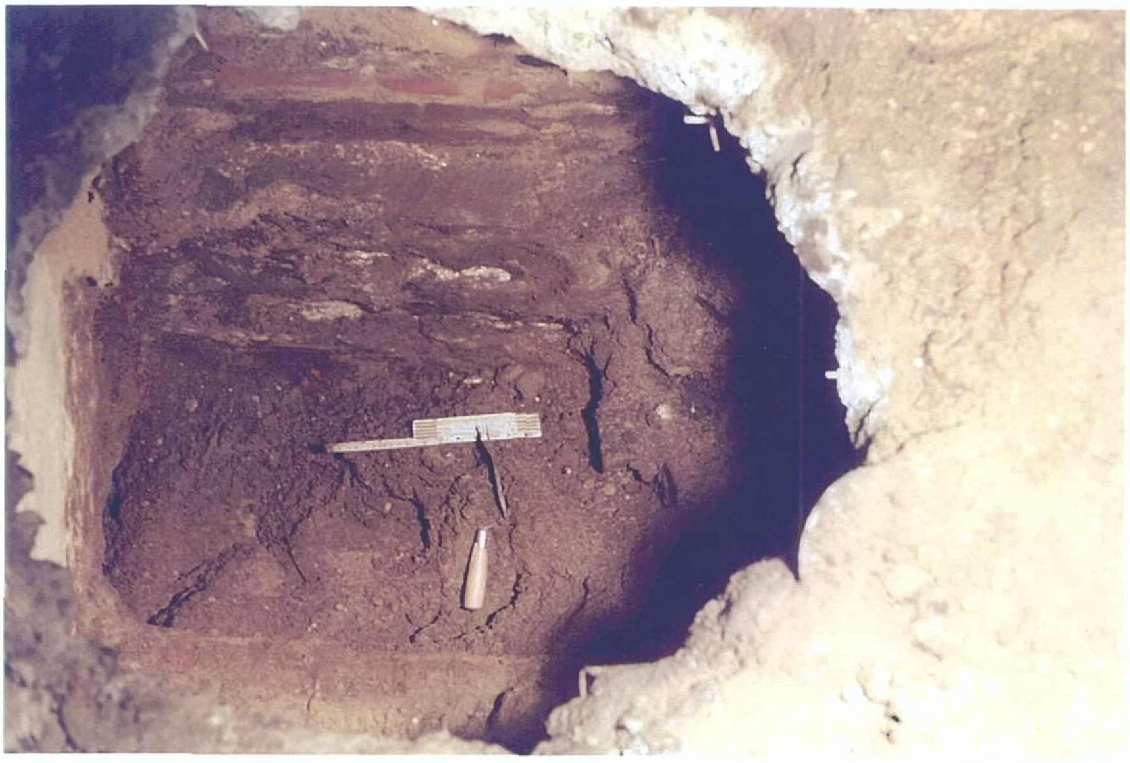

Figure 6
Test Pit 1
View Facing North

Figure 7
Test Pit 2
View Facing East

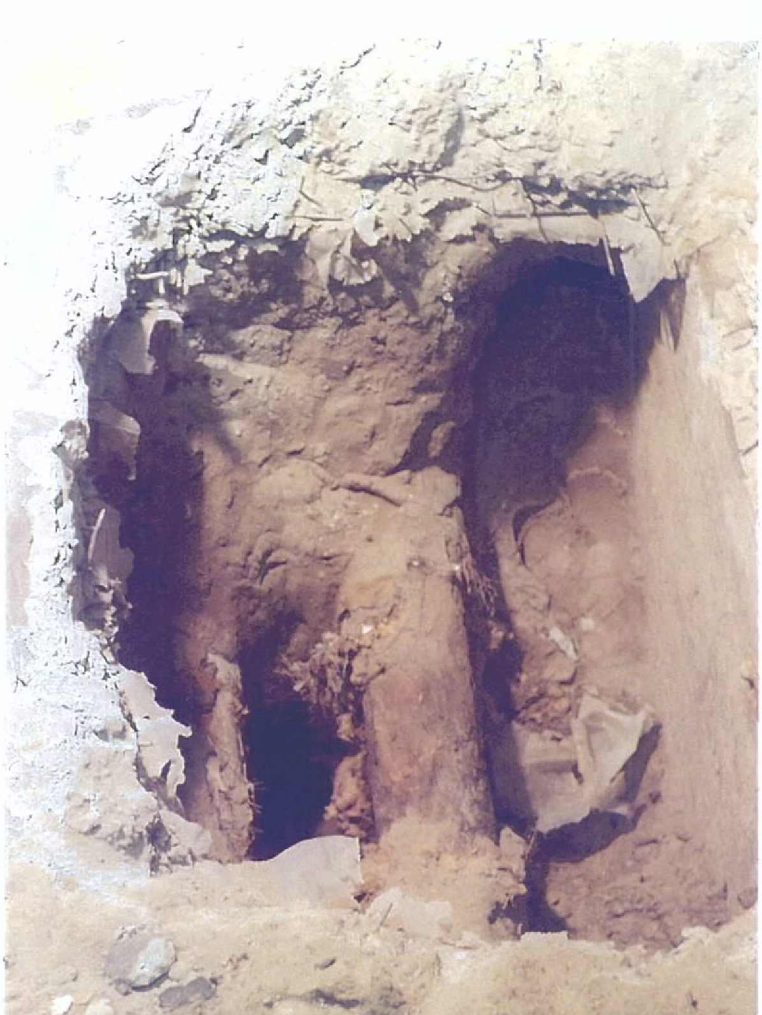

Figure 8
Test Pit 3
View Facing East

APPENDIX A

BORING STRATIGRAPHY AND ARTIFACT INVENTORY

BORING B-1

Sample #	Depth (Ft.)	Description	#	Cultural Materials
	0 - 1	Drilled through concrete surface		-----
1	1 - 3	Tan Brown Sand with brick chips and mortar	1 2 1	pc. bottle glass, pink red brick fragments coal
2	3 - 5	Gray Brown Silty Sand	2	nail fragments (mostly iron oxide)
3	5 - 6.5 and 6.5 - 7	Gray Brown Silty Sand Light Brown Sandy Silt	2 1 1 9	flat glass, clear red brick fragment mortar fragment wood fragments (appear cut)
4	7 - 9	Light Brown Sandy Silt	1	mortar fragment
5	9-11	Dark Gray Brown Silty Sand	1 3	modified and utilized chert pebble (Native American) 32mm x 23mm x 13mm wood fragments
6	11 - 12.5 and 12.5 - 13	Dark Gray Brown Silty Sand Dark Black Brown Sandy Silt	33 4 7	red brick fragments fragments plaster/mortar wood fragments (some cut)
7	13 - 15	Dark Gray Brown Sandy Silt	1 1	red brick fragment wood fragment
8	15 - 17	Dark Gray Brown Sandy Silt	1 1	red brick fragment mortar fragment
9 larger	17 - 19	Dark Gray Organic Silty Clay	5 44 2	red brick fragments wood fragments (some cut) disk-shaped wood pcs (mend - fragment of pc cut by sampling tube?)
10	19 - 21	Dark Gray Organic Silty Clay	1 15 22 1	disk-shaped pc wood (fragment of larger pc cut by sampling tube?) cut wood fragments wood fragments nut shell, hazelnut

11	21 - 23	Dark Gray Organic Silty Clay	1	ceramic sherd, earthenware, creamware
			1	pc. curved glass, clear
			1	disk-shaped wood pc (fragment of larger pc cut by sampling tube?)
			1	wood fragment, cut
			8	wood fragments
			1	red brick fragment
			1	pc slag
			1	pc coal
			1	pc unidentified material (appears to be glazed or vitrified)
			1	seed, squash/melon
			1	oyster shell fragment
13	23 - 25	Dark Gray Organic Silty Clay	6	wood fragments
14	25 - 26.5	Dark Gray Organic Silty Clay and	1	wood fragment
	26.5 - 27	Gray Sandy Silt		
15	27 - 28	Gray Clayey Silt	2	red brick fragments
			1	pc coal
			15	wood fragments (some appear cut)
	28 - 29	Gray Silty Sand with Wood	1	pc bottle glass, dark green, patinated
			75	pcs cut wood (including two large chunks - planking)
			52	pcs wood (some have bark-like appearance)
			4	red brick fragments
			2	mortar fragments
			2	shell fragments, slipper shell
			62	fragments unidentified material (probably clay, possibly from yellow brick - 1 pc with attached iron fragment and iron oxide staining)

16	29 - 31	Gray Silty Sand with Brick Chips and Shell	2 wood fragments 4 wood fragments (bark-like appearance) 23 red brick fragments 3 mortar fragments 5 fragments clam shell 3 fragments unidentified material (probably clay, possibly from yellow brick)
17	31 -32	Gray Silty Sand	1 wood fragment 5 wood fragments (bark-like appearance) 3 fragments yellow brick(1 partially burned) 8 fragments red brick (2 burned) 1 pc slag 1 fragment shell, oyster 1 fragment shell, clam
	32 - 33	Gray Red Silty Sand w. few sm. pebbles	-----
18	35 - 36 36 -37	Tan Pebbly Sand Red Brown Fine Sand w. Some Silt	-----
19	40 - 42	Red Brown Fine Sand w. Some Silt	-----

BORING B-2

Sample #	Depth (Ft.)	Description	#	Cultural Materials
	0 -1	Drilled Through Concrete Surface		-----
1	1 - 2	Light Brown Sand	1	sherd ceramic, earthenware, whiteware
			1	red brick fragments
			1	oyster shell fragment
				brick and mortar fragments (discarded in field)
	2 - 3	Drilled Through Concrete		-----
	3 - 6.5	Drilled Through Concrete Rubble		-----
2	6.5 - 8	Gray/Brown Sand	2	pcs yellow brick (architectural/decorative
		and		molded brick?)
	8 - 8.5	Gray/Brown Sandy Silt	1	red brick fragment
	8.5 - 9	Drove Casing/Drilled Through Concrete Rubble		-----
3	9 - 11	Reddish Brown Sand with small pebbles		-----
4	11 - 13	Reddish Brown Sand with small pebbles	3	red brick fragments
				brick chips (discarded in field)
5	13 - 14	Reddish Brown Sand with small pebbles	1	red brick fragment
		and		brick chips (discarded in field)
	14 - 15	Reddish Brown Silty Sand		-----
6	15 - 17	Red/Gray/Brown Silty Sand with pebbles (rock or brick at top of sample)		-----

7	17 - 19	Red/Gray/Brown Silty Sand with pebbles	1	chert flake, worked, graver tip, possible use wear, Native American (15mm x 13mm x 6 mm)
			1	metal fragment, (possibly lead or lead alloy), iron oxide staining
8	19 - 20.5	Red/Gray/Brown Silty Sand with pebbles		-----
	20.5 - 21	Reddish Brown Fine Sand		-----
9	21 - 23	Gray/Red/Brown Sand		-----
10	23 - 25	Gray/Red/Brown Sand		-----
11	25 - 26	Gray/Red/Brown Sand	7	wood fragments, cut
		and	1	red brick fragment
	26 - 26.5	Gray/Red/Brown Sandy Silt	1	pc. charcoal
		and	2	oyster shell fragments
	26.5 - 27	Dark Gray Clayey Silt with small organic fibers		
12	27 - 29	Gray/Red/Brown Silty Sand	1	sherd, ceramic, earthenware, pearlware
			1	red brick fragments
			3	oyster shell fragments
			*	see note 1
13	29 - 31	Gray Clay with shell pieces (shell concentration at top of sample)	1	mortar fragment
			2	oyster shell fragments
14	31 - 33	Gray Clay w. some organic fibers & a few small pebbles	1	sherd, Native American ceramic, grit temper, buff body, one side smooth (possibly brushed), 1 side with trace decoration (possibly scallop shell stamped), 12mm x 6mm.
10mm x			2	fragments prehistoric ceramic sherd (mend), grit temper, buff body, eroded
			1	red brick fragment
			1	oyster shell fragment

15	35 - 36	Gray Sand w. small pebbles	-----
	36 - 36.5	Red/Brown Coarse Sand	-----
	36.5 - 37	Red/Brown Fine Silty Sand	-----
16	40 - 42	Red Brown Sandy Silt w. gravel	-----

Note 1: 1 pipe stem fragment, white ball clay, bore diameter not measurable, recovered from material washed out of casing at approximately 29' depth

BORING B-3

Sample #	Depth (Ft.)	Description	#	Cultural Materials
	0 -1	Drilled Through Asphalt Surface		--
1	1 - 3	Dark Brown Silty Sand		brick and mortar fragments and small pcs. coal (discarded in field)
2	3 - 5	Dark Brown Silty Sand		brick and mortar fragments and small pcs. coal (discarded in field)
3	5 - 7	Dark Brown Silty Sand		brick fragments (discarded in field)
4	7 - 9	Dark Brown Silty Sand	1	bottle glass, aqua
5	9 - 10 1/2	Red Brown Sandy Silt		-----
	10 1/2 -11	Gray Silty Sand with Pebbles		-----
6	11 - 12 1/2	Gray Silty Sand with Pebbles		-----
	12 1/2 -13	Gray Silt with some Sand and Clay		-----
7	13 - 15	Gray Sandy Silt with Pebbles		-----
8	15 - 17	Gray Sandy Silt with Pebbles		-----
9	17-19	Gray Sandy Silt with Pebbles	1	sherd ceramic, earthenware, pearlware
10	19-21	Gray Organic Silt	11	wood fragments
			1	clam shell fragment
11	21 -23	No Recovery		
12	23 - 25	Gray Organic Silt with Vegetable (Wood) Fibers	1	sherd ceramic, earthenware, pearlware
			1	pc. charcoal (discarded in field)

13	25-27	Gray Organic Silt with Vegetable (Wood) Fibers	2 sherds ceramic, earthenware, creamware (1 rim sherd, probably from bowl or chamber pot) 5 pcs wood fibers * see notes 1, 2 and 3
14	27 - 29	Gray Clayey Silt with Wood	5 wood fragments, cut, from planking 18 wood fragments 3 wood fragments, "bark-like" appearance 1 chert chip (probably non-aboriginally fractured) 10mm x 8mm x 2.5 mm
15	29 - 30 and 30 - 31	Gray Clayey Silt with Pebbles and Wood and Gray Clay	27 wood fragments, some cut 2 red brick fragments 3 pcs coal 1 pc mortar/plaster 1 nut shell fragment, (hazelnut?) 1 seed, unidentified 1 clam shell fragment 1 unidentified shell fragment
16	35 - 37	Tan Sand with some Pebbles	-----
17	40 - 42	Tan Sand with Pebbles	-----

Note 1: Washed out of hole at depth of the gray clay with fibers stratum
1 sherd ceramic, earthenware, pearlware
2 clumps of wood fibers
1 small twig

Note 2: Found on surface when drillers were washing material out of hole at depth of gray clay with fibers stratum
1 sherd ceramic, earthenware, pearlware

Note 3: Noted in material shoveled out by drillers out of tub - provenience uncertain
1 sherd ceramic, earthenware, creamware
1 sherd ceramic, earthenware, pearlware

BORING B-4

Sample #	Depth (Ft.)	Description	#	Cultural Materials
	0 - 1	Drilled Through Concrete Surface		--
1	1 - 2	Red/Brown Sand	2	red brick fragments
		and	8	mortar fragments
	2 - 3	Black/Brown Silty Sand	1	nail fragment
		with Coal	9	pcs coal
2	5 - 7	Gray Brown Sand	4	red brick fragments
3	10 - 11 1/2	Red Brown Sand w. Silt	9	red brick fragments
		Inclusions and	1	mortar fragment
	11 1/2 - 11 3/4	Gray Black Silty Sand	1	fragment unidentified material (possibly slate)
		and		
	11 3/4 - 12	Red Brown Sand w. Silt Inclusions	1	pc coal
4	15 - 17	Red/Gray/Brown Sand with some Silt	4	wood fragments
			30	red brick fragments
			2	mortar fragments
			10	oyster shell fragments
5	20 - 20 1/2	Gray Brown Silty Sand w. Brick	23	red brick fragments
			1	wood fragment, cut
			1	oyster shell fragment
	20 1/2 - 22	Gray/Green Silty Clay with organic fibers	2	wood fragments
6	25 - 27	Gray Silty Clay	1	wood fragment
			3	red brick fragments
			1	mortar fragment
			3	clam shell fragments
			1	oyster shell fragment
7	30 - 32	Gray Sand w. some Silt and Pebbles	1	wood fragment
			1	red brick fragment
			3	clam shell fragments
8	35 - 37	Tan Sand		-----
9	40 - 42	Red/Brown Fine Sand w. some Silt		-----

BORING B-5

Sample #	Depth (Ft.)	Description	#	Cultural Materials
	0 - 1	Drilled Through Surface	---	
	1 - 3	Gray Brown Sand w. Pebbles	No Sample Taken	
	5 - 7	Gray Brown Sand with Brick Chips	Not Screened	
1	10 - 11	Gray Brown Silty Sand and	104	wood fragments, most are "bark-like"
	11 - 12	Brown Silty Sand	1	mortar fragment
			3	oyster shell fragments
2	15 - 17	Gray/Red/Brown Sand	2	oyster shell fragments
3	20 - 22	Red Brown Sand w. pebbles	-----	
4	25 - 27	Gray Clay	2	fragments cut wood
			2	shell fragments, burned, oyster or mussel
5	30 - 32	Gray Clay	4	red brick fragments
			1	wood fragment
6	35 - 37	Tan Medium Coarse Sand	-----	
7	40 - 42	Tan Medium Coarse Sand	-----	