

USF
276m

1984

G.H.

Assay Office Site

CEQR

1984

Assay Office

③

RESULTS OF TESTING AND
RECOMMENDATIONS FOR
MITIGATION IN LOTS 6
AND 44, BLOCK 35 SITE.

83-299m (MANHATTAN)

GREENHOUSE CONSULT., INC.

①

Diana diZ. Wall
Roselle E. Henn

320

Introduction

This report summarizes the results of the archaeological testing and presents the recommendations for mitigation in the "Backyard Area" in Lots 6 and 44 on Block 35, New York City. Our interim report on the rest of the site, submitted on June 6th, did not include these lots, as they were not accessible for testing until May 21, 1984.

The Testing Strategy and Its Results

In preparing Lots 6 and 44 for testing, the front end loader and backhoe were used to remove the twentieth-century demolition debris and the grade beams associated with the Assay Office Building down to the basement floors of the nineteenth-century buildings on the lots. These floors were then removed and the area was cleaned by hand.

The testing in the backyard of Lot 6 was begun with the hand excavation of Test Cut AC, a two by ten foot unit oriented north-south across the backyard area. This unit was placed to look for features and/or stratified deposits. A rectangular, stone-lined privy was found in excavating this unit. This feature was sampled as Test Cuts AE and AJ. The uppermost part of the privy contained concrete and stone, which had to be removed with a pneumatic hammer. Nightsoil-like deposits were found below these materials. The deposits from the eastern half of the privy were excavated, and indicated that this feature had been in use in the mid-nineteenth century.

Test Cut AG, a three by three foot unit, was placed in the backyard of Lot 44 to test for stratified deposits. No such deposits were found.

The north-south line of wharf, which was uncovered in Lots 7 through 9, was also exposed in Lot 6. Test Cut AL, a ten by two foot unit, was placed on top of the wharf. In addition, an east-west wharf was uncovered near the southern edge of Lots 6 and 44. This wharf is possibly Bache's Wharf, which is indicated on late eighteenth-century maps.

At the intersection of the two wharves and to the south of the Lot 6 privy, a large ca. 8.3 foot by 11.3 foot wooden box-like structure was found. Two of the walls of this feature were made of horizontally-laid planks supported by upright posts on the interior. The other two walls (the south and west walls) are formed by the east-west wharf and the north-south wharf, respectively.

The box-like feature was tested with Test Cut AK, a two by 4.6 foot unit located in the northeastern corner of the box, and Test Cut AM, an

8.3 by 2.2 foot trench exposing the feature's western wall and part of its southern wall. The deposits encountered in each of these units, which were excavated to depths of almost four feet, consisted of three major strata. Uppermost was a layer of rubble fill. This was underlain by a stratum of dark brown silt, which contained a dense deposit of large pieces of ceramics and organic material. Below this stratum was a layer of gray sand with a sparse concentration of artifacts.

The function of this feature is unknown; the horizontally-laid wooden planks extended below the depth to which the units could be excavated at this time, due to the high water table.

An east-west bulkhead was encountered abutting the northern line of Lot 6. It is constructed of horizontally laid planks supported by upright posts. Test Cut AP located at the eastern end of the northern lot line, was excavated to determine whether the bulkhead extended into Lot 44. No eastern extension was encountered.

The north-south line of pilings which had been uncovered in Lot 43 also continued into Lot 44. These pilings are located beneath the spreadfooter beams that supported the back wall of an earlier building on the lot.

Recommendations for Mitigation

In our professional opinion, further archaeological work is warranted to mitigate the impact of the construction of Financial Square on the archaeological resources in Lots 6 and 44. In the discussion that follows, resources that we feel require further work are reviewed.

1. The Privy of Lot 6

The contents of the privy located in Lot 6 were sampled in the course of testing (Test Cuts AC, AE, and AJ). The remainder of the contents of this feature should be excavated so that its time of abandonment and subsequent filling can be documented and the artifacts discarded in it can be retrieved. It apparently was abandoned in the second and/or third quarter of the nineteenth century, during the period when the block was being used for strictly commercial purposes. In addition, the stone wall of the privy should be dismantled and the soil matrix between the stones should be screened, so that the time period of its construction may be documented. *partially*

2. The "Box" in Lots 6 and 44

As indicated above, the function and nature of the "box"-like feature in Lots 6 and 44 is not understood as yet. Our recommendations anticipate two possible situations. The "box" could be associated with the landfilling of this part of the block. Alternatively, it could have been a feature relating to the occupation of the lot. Our mitigation strategy would have stratigraphic excavation continue within the "box" until this distinction could be made. This area would be maximally 11.3 feet by 8.3 feet. If further excavation indicates that the "box" is an occupation feature then stratigraphic excavation would continue until landfill and/or the bottom of the horizontal planks are encountered. If the internal deposition is found to be part of a landfill episode, a bulk 100 gallon sample will be taken, wet screened and the artifacts retrieved. Then, the remaining fill will be removed with the backhoe. In either case, the construction of the "box" and its relationship to the two wharves examined and recorded.

3. The Wharves

The construction of the northern face of the east-west wharf on the southern edge of Lots 6 and 44 should be exposed to harbor bottom and recorded. The construction of the part of the north-south wharf that extends into Lot 6 should also be recorded as outlined in our Interim Report recommending further work on this wharf in Lots 7 through 9.

4. The Bulkhead

The east-west bulkhead near the northern edge of Lot 6 should be exposed down to harbor bottom and its construction recorded.

5. The Landfill

As outlined in our recommendations for mitigation in the northern lots in our Interim Report, bulk samples of at least 100 gallons should be taken from each landfill area, as defined by lines of bulkhead, in Lots 6 and 44.

6. The Pilings

The location of each of the pilings in each of the north-south lines should be recorded.

Budgeted Time

We feel that the time we tentatively allocated for mitigation work in Lot 6, ten people for 15 days, is adequate for the first part of the Mitigation Phase, during the five week period of slurry

wall completion. However, there will be a need for additional person days in the four week period after the slurry wall is completed. The tasks to be accomplished during this period would include 1) exposing the east-west wharf on the southern edge of Lots 6 and 44 down to harbor bottom and recording its construction; 2) similar work on the east-west bulkhead near the northern edge of Lot 6; and 3) completing the excavation and recording of the "box"-like structure in Lot 6. These tasks should take an additional ~~12 people~~ 12 days. We hope to be able to accomplish this work by taking on additional crew members and supervisors rather than extending our length of field time. We feel our budgeted laboratory and report writing allocations will be adequate to incorporate the additional material and information.

50 Trinity Place
New York, New York
10006/212 514-9520

18 June, 1984

Dr. Sherene Baugher
Urban Archaeologist
Landmarks Preservation Commission
20 Vesey Street
New York, New York 10007

Dear Sherene,

Enclosed please find our revised budget for the Mitigation Phase in the "Backyard Area" of the Block 35 Site. As per our discussion on Wednesday, 13 June, we have adjusted our original estimates to reflect the time already approved in the Testing Phase budget and time already spent in preparing our Interim Report.

As we discussed last week, our mitigation budget treats the cannon which were recovered from the slurry wall, as a subcontracted item. Their analysis will have to follow conservation, a process which may take up to two years. We anticipate that we, as Co-Principal Investigators, will spend an additional month preparing the report of these finds upon completion of their treatment.

We hope that with the receipt of the revised budget you will be able to respond to our Interim Report as soon as possible in order to avoid project delays.

Sincerely,



Roselle E. Henn
Co-Principal Investigator



Diana diZerega Wall
Co-Principal Investigator

"Backyard Area" Mitigation Budget

Scope Development and Coordination

Project Manager, 40 hours
Co-Principal Investigators, 80 hours
Word Processing, 8 hours

Field Work

Project Manager, 160 hours
Co-Principal Investigators, 540 hours
Field Supervisor, 360 hours
Site Surveyor, 180 hours
Crew Chiefs, 1440 hours
Photographer, 360 hours
Technicians, 7200 hours
Consultants, 30 hours
18th and 19th century construction consultant

Concurrent Laboratory

Laboratory Director, 360 hours
Laboratory Assistant, 360 hours
Technicians, 2520 hours
Conservation Technicians, 720 hours
Conservation Consultant, 80 hours

Analysis and Report Preparation

Project Manager, 136 hours
Co-Principal Investigators, 2160 hours
Laboratory Director, 1120 hours
Field Supervisor, 800 hours
Site Surveyor, 320 hours
Crew Chiefs, 1760 hours
Laboratory Assistant, 800 hours
Artifact Analysis, 3520 hours
Technicians, 4680 hours
Photography, 960 hours
Draftsman, 640 hours
Computer Consultant, 112 hours
Conservation Technicians, 1280 hours
Conservation Consultant, 128 hours
Data Entry, 640 hours
Historian, 200 hours
Word Processing, 128 hours
Preparing Final Report, 160 hours

Project Expenses

- Laboratory Equipment
- Expendable Supplies, Field and Laboratory
- Transit Rental
- Conservation and Curation
- Museum Cabinets (12)
- Photographic Facility and Supplies
- Drafting Facility and Supplies
- Photocopy
- Plates and Reproduction
- Air Travel
- Per Diem

Subcontracted Items

- Flotation Sorting and Analysis
- Cannon Conservation and Curation (5)
- Backhoe, Amoruso Company, 10 weeks
- Backhoe Operator, Fred Harvey
- Backhoe, demobilization
- Other Heavy Machinery

original

Block 35
"Backyard Area" Mitigation Budget

Scope Development and Coordination

Project Manager, 40 hours
Co-Principal Investigators, 80 Hours
Word Processing, 8 hours

Field Work

Project Manager, 160 hours
Co-Principal Investigators, 540 hours
Field Supervisor, 360 hours
Site Surveyor, 360 hours
Crew Chiefs, 1440 hours
Photographer, 360 hours
Technicians, 7200 hours
Consultants, 30 hours
18th and 19th century construction consultant

Concurrent Laboratory

Laboratory Director, 360 hours
Laboratory Assistant, 360 hours
Technicians, 2520 hours
Conservation Technicians, 720 hours
Conservation Consultant, 80 hours

Analysis and Report Preparation

Co-Principal Investigators, 2912 hours
Project Manager, 144 hours
Laboratory Director, 2080 hours
Field Supervisor, 1040 hours
Crew Chiefs, 2080 hours
Laboratory Assistant, 2080 hours
Artifact Analysts, 3520 hours
Technicians, 7200 hours
Photographer, 1040 hours
Draftsman, 1040 hours
Computer Consultant, 112 hours
Conservation Technicians, 1280 hours
Conservation Consultant, 128 hours
Data Entry, 640 hours
Historian, 240 hours
Word Processing, 160 hours

Project Expenses

- Laboratory Equipment
- Expendable Supplies, Field and Laboratory
- Transit Rental
- Conservation and Curation
- Museum Cabinets (12)
- Photographic Facility and Supplies
- Drafting Facility and Supplies
- Photocopy
- Plates and Reproduction
- Air Travel
- Per Diem

Subcontracted Items

- Flotation Sorting and Analysis
- Cannon Conservation and Curation (5)
- Backhoe, Amoruso, Company, 10 weeks
- Backhoe Operator, Fred Harvey
- Backhoe, demobilization
- Other Heavy Machinery

"Backyard Area" Mitigation Budget

Scope Development and Coordination

- Project Manager, 40 hours
- Co-Principal Investigators, 80 hours
- Word Processing, 8 hours

Field Work

- Project Manager, 160 hours
- Co-Principal Investigators, 540 hours
- Field Supervisor, 360 hours
- Site Surveyor, 180 hours
- Crew Chiefs, 1440 hours
- Photographer, 360 hours
- Technicians, 7200 hours
- Consultants, 30 hours
- 18th and 19th century construction consultant

Concurrent Laboratory

- Laboratory Director, 360 hours
- Laboratory Assistant, 360 hours
- Technicians, 2520 hours
- Conservation Technicians, 720 hours
- Conservation Consultant, 80 hours

Analysis and Report Preparation

- Project Manager, 136 hours
- Co-Principal Investigators, 2160 hours
- Laboratory Director, 1120 hours
- Field Supervisor, 800 hours
- Site Surveyor, 320 hours
- Crew Chiefs, 1760 hours
- Laboratory Assistant, 800 hours
- Artifact Analysis, 3520 hours
- Technicians, 4680 hours
- Photography, 960 hours
- Draftsman, 640 hours
- Computer Consultant, 112 hours
- Conservation Technicians, 1280 hours
- Conservation Consultant, 128 hours
- Data Entry, 640 hours
- Historian, 200 hours
- Word Processing, 128 hours
- Preparing Final Report, 160 hours

Project Expenses

- Laboratory Equipment
- Expendable Supplies, Field and Laboratory
- Transit Rental
- Conservation and Curation
- Museum Cabinets (12)
- Photographic Facility and Supplies
- Drafting Facility and Supplies
- Photocopy
- Plates and Reproduction
- Air Travel
- Per Diem

Subcontracted Items

- Flotation Sorting and Analysis
- Cannon Conservation and Curation (5)
- Backhoe, Amoruso Company, 10 weeks
- Backhoe Operator, Fred Harvey
- Backhoe, demobilization
- Other Heavy Machinery

50 Trinity Place
New York, New York
10006/212 514-9520

Dr. Sherene Baugher
Urban Archaeologist
Landmarks Preservation Commission
20 Vesey Street
New York, New York 10007

15 June, 1984

Dear Sherene,

Enclosed please find our Interim Report with the revisions which we discussed with you on Wednesday. Our adjusted budget will be submitted to you shortly. We hope that, as in the past, you will be able to review and respond to our report as soon as possible to avoid project delays.

We have also enclosed a copy of a letter sent to Morse/Diesel, the construction management firm supervising work on the Block 35 Site. In this letter we confirm your verbal clearance for the protection of the archaeological site during slurry wall construction on Gouverneurs Lane. We would appreciate a written confirmation of this arrangement when you can get to it. Our letter to Morse/Diesel also outlines our schedule for mitigation, pending your approval of our Interim Report.

Sincerely,



Roselle E. Henn
Co-Principal Investigator



Diana diZerega Wall
Co-Principal Investigator

50 Trinity Place
New York, New York
10006/212 514-9520

Matthew Fagnani
Morse/Diesel
Financial Square/Block 35 Site

Re: Protecting Archaeological Site during Slurry Wall Construction on
Gouverneurs Lane and Mitigation Schedule

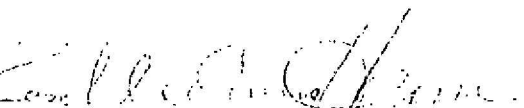
June 14, 1984

Dear Mr. Fagnani:

Enclosed please find a copy of our letter of 3 June to Dr. Baugher requesting verbal clearance for backfilling on Lots 9, 8, 41 and 42. We received verbal clearance to proceed with backfilling in the afternoon of June 4.

As per the conversation you had this morning with Roselle Henn and Valerie DeCarlo, we are still waiting for Landmarks to respond fully to our Interim Report. At this point in time we only have permission to proceed with mitigation in some features. We have estimated, in that report, that the actual mitigation work will require four weeks after the slurry wall is completed and we can remove the backdirt and other protective surfaces in all of the northern lots. We have also incorporated your six week estimate for completion of the slurry wall in our projected work schedule. As we are sure you understand, final clearance and release of the archaeological portion of the site must come from the Landmarks Preservation Commission.

Sincerely,



Roselle Emma Henn
Co-Principal Investigator



Diana diZerega Wall
Co-Principal Investigator

cc: Barry Greenhouse
Sherene Baugher
Arthur Zanotti

50 Trinity Place
New York, New York
10006/212 514-9520

THE RESULTS OF THE ARCHAEOLOGICAL TESTING
AND THE RECOMMENDATIONS
FOR MITIGATIONS FOR
THE "BACKYARD AREAS" IN
LOTS 7, 8 & 9; 41, 42 & 43;
BLOCK 35, NEW YORK CITY

Diana DiZerega Wall
Roselle Emma Henn

Introduction

This report summarizes the results of the archaeological testing and presents the recommendations for mitigation in the "Backyard Areas" of Lots 7, 8, and 9, and 41, 42, and 43 on Block 35, New York City. The results of testing and recommendations for mitigation in Lots 6 and 44 are not included in this report, as the beginning of the testing phase was delayed in these lots, which were used as a staging area for the installation of the slurry wall on the perimeter of the block. The testing program in the backyards was begun on April 13th, 1984, and completed on May 25th, 1984, with the exception of the work in Lots 6 and 44. Testing in parts of the latter two lots was only begun on May 21st, and parts of the lots have yet to be released for testing because of slurry wall work.

This report includes and expands on the information included in our report on the results of testing and recommendations for mitigation in Lots 9 and 41, submitted on May 23rd, as some of the questions raised in this report have since been resolved. It should be noted that the present report contains only a summary of the work completed during testing, and that our interpretations of these results are tentative, pending our analysis of the stratigraphy and the artifacts in the laboratory.

The Testing Strategy and Its Results

Lot 7. In preparing Lot 7 for testing, the front end loader and backhoe were used to remove the twentieth-century demolition debris down to the level of the basement floor of the most recent building on the lot. This floor was then removed, and a combination of backhoe scraping and hand excavation was begun. Although the building records did not record a late nineteenth century backyard area in this lot, an early back wall was uncovered under the basement floor. This wall defined the mid-nineteenth century backyard area to its east. A total of three excavation units were placed in the backyard of Lot 7, and three features (a privy, a wall, and a wooden box-like structure) were uncovered and tested in this area.

The testing of the backyard was begun with the hand excavation of Test Cut T, a two by 12 foot unit oriented north-south across the backyard area. This unit was excavated to test for features and/or stratified deposits (such as earlier ground surfaces) related to the occupation of the lot. The remains of a flagstone paved surface were uncovered in the north of the area, but this had been heavily disturbed and no evidence of earlier ground surfaces was found in the rest of the area. Parts of three features were uncovered in this trench, which was extended in order to test these features further.

Approximately one half of the round privy exposed in the northern end of Test Cut T and an area to the west of the feature were excavated (as Test Cuts U, V and part of Test Cut T). The materials in the nightsoil in this feature date its last period of use to the mid-nineteenth century.

The lowermost part of a stone foundation wall, possibly part of an outbuilding, was uncovered in this yard. This wall had been built through the privy.

In addition, a wooden box-like structure was uncovered in the southern part of Test Cut T and was further tested as Test Cut T2. This feature is made of upright planks, set vertically into the ground, and is ca. four by at least three feet in size. The bottom of the wooden planks and the eastern wall of this feature have not yet been exposed. The materials in the feature date to the early nineteenth century.

A section of a cobb wharf was uncovered by backhoe scraping in the area to the west of the backyard area. This wharf is part of the wharf complex that extends through Lots 6 through 9 on the west side of the block.

The area to the west of the wharf and to the east of the sheeting defining Test Trench West was scraped with the backhoe in order to look for truncated features. This scraping was extended to depths ranging from 3.12 to 4.83 feet below mean sea level. (It should be noted that the pumping done on the site in conjunction with the archaeological testing phase has lowered the water table by several feet, so visibility was not a problem at these depths.

Lot 8. In preparing the backyard area of Lot 8 for testing, the front end loader and backhoe were used to remove the twentieth century demolition debris down to the level of the basement floor of the most recent building on the lot. This floor was then removed, and a combination of backhoe scraping and hand excavation was begun. Although the building records did not record a late nineteenth-century backyard in this lot, back wall was uncovered under the basement floor. This wall defined the nineteenth-century backyard area to its east. Three excavation units were placed in this backyard, uncovering two features, a privy and a bulkhead.

Test Cut M, a two by 15 foot unit, was placed parallel to the back wall of Lot 8 in order to test for the presence of features and stratified occupational deposits. None of the latter were found, but a large, shallow, round privy, located in the northern part of the backyard, was uncovered. Approximately one half of this feature was sampled as Test Cut W. The deposits in this feature contained a high density of construction rubble, associated with the abandonment of this feature, and a paucity of nightsoil.

A shovel test, Test Cut E, was placed to the west of the backyard area in Lot 8 in order to test for stratified occupational deposits. Only construction rubble was found to a depth of ca. 1.5 feet, where wood was encountered and the test was terminated.

The backhoe was then used to scrape down this rubble to the west of the backyard area. This procedure uncovered a section of the cobb wharf complex that extends from Lots 6 through 9. (The wood encountered in Test Cut E was presumably part of this wharf). In addition, part of an east-west bulkhead, located between the wharf and the sheeting for Test Trench West was found. This bulkhead, which was exposed to river bottom; in Test Trench West, was made of a line of vertical planks, set on end. To our knowledge, no similar bulkhead has been recorded in lower Manhattan.

The area to the west of the wharf in Lot 8 was scraped to look for truncated features. None were found. A one hundred gallon sample from the landfill in this area was screened. In all, this area was scraped to depths ranging from 3.2 to 5.53 feet below mean sea level.

A final feature located in Lot 8 must be considered here: the deposits on the basement floor of the structure that was destroyed in the 1835 fire. These deposits and the back wall of this building were encountered first in installing the sheeting and later again in excavating Test Trench West. It was decided, in consultation with Sherene Baugher of the Landmarks Preservation Commission, that the excavation of the trench should not be slowed down by testing these deposits in the trench itself. Two additional units were placed to the west of the trench to test this deposit.

Test Cut K, a three by three foot unit, was excavated on the floor of this structure. However, the excavation of this unit exposed an architectural feature (a central pillar support) associated with the most recent structure on Lot 8. Another unit, Test Cut P, measuring two by five feet, was placed to the south of Test Cut K. Only a very thin stratum of burned materials was found in this test cut.

Lot 9. In preparing Lot 9 for testing, the front end loader and backhoe were used to remove the twentieth-century demolition debris down to the level of the basement floor and a higher courtyard area in the backyard. The basement floors were then removed, and hand excavation was begun. A total of five test cuts were placed in Lot 9.

Test Cut C, a four by 3.25 foot unit, was placed in the modern courtyard area in the southeast corner of the lot in order to test for features and stratified occupational deposits (such as earlier ground surfaces). According to maps (eg., Perris 1854) and building records, this area had never been built upon.

The excavation of this unit revealed, however, that this area had been heavily disturbed by the installation of spread footer complexes under the side and back walls of the building in Lot 9. The deposits in the unit dated to the mid- to late nineteenth century.

After the basement floors were removed, Test Cut L, a two by 14 foot trench located parallel to the back property line of the lot, was excavated in order to look for features and/or stratified deposits related to the occupation of the lot. No such features or deposits were found in Test Cut L.

The backhoe was then used to scrape Lot 9 in the area to the east of Test Trench West. Four features were found: a deposit with a heavy concentration of bottle glass, which may be a trash pit; a section of a cobb wharf; a plank complex used to support an interior, central column in the structure on Lot 9, and a series of planks which form a platform or surface extending through the width of the lot.

Test Cut J, a three by three and a half foot unit, was excavated to sample the trash pit. The deposits in this unit contained a heavy density of bottle glass, apparently dating to the second quarter of the 19th century. Lot 9 was occupied by grocers during this period, and the deposit appears to be related to their use of the lot. This pit extends over an area roughly 7.5 by 6.5 feet.

A section of the cobb wharf was also uncovered in Lot 9. This feature extends north-south through Lots 8 and 9 and is connected to another wharf uncovered in Lots 6 and 7. Test Cut Q, a six by 13.5 foot unit, was placed on top of the wharf to sample a deposit with a heavy concentration of oyster shells and pantiles.

The third feature encountered in scraping Lot 9 was a series of planks, laid in two layers, which was apparently used as a platform to support a central column inside the most recent building on Lot 9. The construction of this support platform has been recorded.

The fourth feature uncovered in this lot consisted of a series of planks, one layer thick, which were laid east-west, forming a rectangular platform or surface oriented north-south, covering the width of the lot. These planks may have been placed to provide a stable surface on the primary landfill. This feature has been recorded.

Lot 9 was scraped to a level below that of the underlying planks of the spread footer complexes along the side walls of the most recent building on the lot, in order to look for truncated features. This scraping was extended to depths ranging from 1.27 to 2.99 feet below sea level.

A final feature located in Lot 9 must be considered here: the deposits on the basement floor of the structure that was destroyed in the 1835 fire. These deposits and the back wall of this building were encountered in excavating Test Trench West. It was decided, in consultation with Sherene Baugher of the Landmarks Preservation Commission, that the excavation of the trench should not be slowed down by sampling these deposits in the trench itself. Rather, an additional unit was placed to the west of the trench to test these deposits. Test Cut D, a three by three foot unit, was placed in that area for this purpose.

The excavation of this unit revealed four strata of deposits: the uppermost layer consisted of a solid basement floor of the most recent structure on Lot 9. The underlying stratum consisted of a layer of construction rubble that was apparently used as a bedding for this floor. Below the rubble was a thick layer of burnt deposits which contained high densities of bottle glass as well as ceramics and bone. This stratum presumably resulted from the 1835 fire on the lot, and was underlaid by the wooden basement floor of the earlier structure.

Lot 41. The front end loader and backhoe were used to remove the twentieth-century demolition debris down to the basement floor in Lot 41. No elevated backyard area was found in this lot. The floor was then removed, and a spread footer complex used to support the central pillars of the most recent building on the lot was revealed. This feature, which extended throughout the east-west portion of Lot 41 that lay to the west of Test Trench East, was recorded. In addition, a substantial plank platform, three courses thick, was revealed in the back part of the lot. This platform was used to support a stone and concrete feature which was recorded on top of the basement floor. This feature may have been used as a platform for heavy machinery in the basement of the Lot 41 structure. The construction of the wooden platform under the basement floor was recorded, and the area under the platform was scraped with the backhoe to look for truncated features. No such features were found in this area.

Test Cut H, a three by three foot unit, was placed between the central and northern spread footer complexes in order to see if stratified occupational deposits (such as earlier ground surfaces) remained intact in that area. No such deposits were found.

Test Cut N was placed in an area where preliminary scraping with the backhoe revealed a heavy concentration of ceramics. This unit, which was six by 3.6 feet, contained an artifact-rich black silty deposit with heavy concentrations of late eighteenth and early nineteenth century domestic materials, such as ceramics, bone, and glass. The soil matrix was similar to nightsoil, indicating the deposit may have been associated with a privy. However, as no feature walls have been encountered, it is probable that these deposits were part of the primary landfill on the block.

Test Cut X was placed in an area on the northern side of the lot where preliminary scraping with the backhoe revealed a heavy concentration of crown glass. This unit, which measured six by two feet was later extended by a trench three feet by two feet to explore a configuration of stone that was uncovered. Test Cut X2 was excavated to determine whether this deposit was a trash pit associated with the occupation of the lot or part of the landfill matrix of the block. The excavations revealed that both the artifactual deposit and the stone configuration were part of the landfill; these strata slope down steeply to the east on the eastern side of the block. The deposit was sampled in the course of excavation.

As we reported in our summary of the results of the testing in Test Trench East, the line of pilings encountered on the Lot 41 and 42 property lines extends further to the west, and additional pilings have been uncovered along the property lines dividing Lots 41 and 42, and 8 and 9. These pilings may have been associated with Gouverneur's Wharf. Additional pilings may exist under the remaining spread footer complexes along these property lines.

The backhoe was used to scrape Lot 41 down to a depth of more than 3.75 feet below sea level in Lot 41. No other features were found.

Lot 42. In Lot 42, preparation for testing was accomplished by using the backhoe and front end loader to remove twentieth-century demolition debris and to expose the basement floors. After removing the basement floors, hand excavation began. In total, six test units were excavated in Lot 42. Backhoe scraping reached depths of .84 feet below datum in the eastern part of the lot and 4.28 feet below datum in the western portion.

The backhoe was used to test in the area west of Test Trench East for the back wall of the early nineteenth-century structure. The backhoe exposed an area 15.5 by 11.5 feet to a depth of almost seven feet. No back wall was identified in this test. No stratified deposits were encountered above the spread footer complexes associated with the lot wall between Lots 41 and 42, and the central building supports in Lot 42. These architectural remains were extensions of those found in Test Trench East. The exposed stratigraphic profile was drawn and photographed.

In the western end of this backhoe test, a barrel was encountered ca. 10 feet west of Test Trench East. The internal matrix of the barrel was excavated as Test Cut F. It contained few artifacts and had an organic deposit in the bottom.

The recovery of the barrel between the spread footers suggested that intact deposits might remain below or between the architectural remains. However, scraping between the other spread footer complexes on the southern part of Lot 42 did not

reveal additional intact deposits.

Test Cut B, a two foot by 15 foot trench, oriented north-south, was located to the west of the back wall of the mid-nineteenth century structure. The unit, which was excavated to a depth of 2.5 feet below datum over most of its extent, and to seven feet below datum in the center of the trench, was intended to test for features and stratified occupational deposits. The upper seven feet of the unit indicated that this part of the lot had been disturbed. The soils there consisted of deposits which seemed to be related to the late nineteenth-century extension of the structure into this, the western part of the lot. The only feature encountered in the upper strata was a small (1.5 feet in diameter), round, brick structure which has been tentatively interpreted as a sump. Wood was encountered at seven feet below datum in Test Cut B along the west wall. After recording the stratigraphy in the trench, the upper portion was removed with the backhoe. This facilitated closer examination and further exposure of the wood. The latter turned out to be a horizontal plank held upright by square posts positioned on the eastern side of the planks. The posts, .2 by .4 feet, were located toward the north end and middle of T.C.B. They were spaced ca. 2.2 feet apart. Excavation below this level indicated that the wooden structure extended down into landfill. Parts of three wooden, horizontal planks positioned below each other were exposed in profile. Each plank was .1 feet thick and .9 feet wide. We have tentatively identified this structure as a north-south bulkhead.

Test Cut S was 3.2 feet by 4.5 feet square. It was located directly to the south of Test Cut B, abutting the spread footers belonging to the lot wall between Lots 42 and 43. This unit was excavated in order to determine if the bulkhead encountered in Test Cut B extended south, past the lot wall and/or whether it formed a corner with an east-west structure. An east-west wooden bulkhead, also made of a horizontal plank held in place by vertical square posts, was found in Test Cut S. The bulkhead continued in both east-west directions beyond the limits of the unit. Test Cut S was excavated on both sides of this bulkhead. Materials from the south side of the bulkhead contained a high frequency of bone and shell in a dark brown organic matrix. The area to the north of the bulkhead contained mixed 19th century materials and construction debris similar to that found to the north in the upper portion of T.C.B.

In the eastern third of Test Cut S, at a depth of 2.7 feet below datum, a two foot section of a large log running north-south was uncovered. Further excavation within the unit exposed the profile of the log, which was .8 feet in diameter. However, one of the subsequent tests in the backyard area exposed more of the log. It is possible that it is related to the north-south bulkhead encountered in Test Cuts B, S and Y or to some other fill retention structure.

Test Cut S was excavated to a depth of ca. 3.5 feet below datum.

Test Cut Z was a three foot by 4.5 foot unit abutting Test Cut S's eastern wall. It was intended to expose the eastern part of the wooden, east-west bulkhead found in Test Cut S. A corner, joining the east-west bulkhead with that of the north-south bulkhead identified in Test Cut B, was located in Test Cut Z. Based on the portion exposed by excavation, which proceeded to a depth of 3.6 feet below datum, the corner was constructed as follows: A square post was found to the south of the end of the north-south plank. Another post was found to the west of the first post, immediately abutting it, and the the south of the east-west bulkhead plank. The two horizontal planks, although they did not touch, formed an angle which was close to 90 degrees. There was a third post in Test Cut Z further to the north, supporting the north-south plank on its east side.

Test Cut Y was a 3.9 by 5.21 square foot unit excavated to 3.31 feet below datum to the north of Test Cut B. This unit was intended, as in the case of Test Cut S, to expose more of the wooden bulkhead and/or to determine if it ended or made a corner with another bulkhead running east-west along the northern line of Lot 42. No indication of a northern extension of the bulkhead had been found in Lot 41. Excavation of test Cut Y suggested that the bulkhead ended on the lot line between Lots 41 and 42. A wooden post located near the southern wall of Test Cut Y held the horizontal plank in position.

Pilings were encountered under the spread footer complexes on the lot wall between Lots 41 and 42. They were arranged in a staggered, east-west pattern similar to that in Test Trench East, and are probably an extension of that line. The pilings had been trimmed to fit below the spread footers associated with the lot wall.

A stone wall with underlying beams was uncovered by backhoe scraping. It was located approximately 20 feet west of Test Trench East, and perpendicular to the side walls in Lot 42. We have tentatively identified this as the back wall of an earlier nineteenth-century building. In cleaning off to prepare for profile, a dark burned area was identified to the east of the wall and the west of the barrel. Test Cut AD was excavated to evaluate this deposit. The results of this test suggest that there had been considerable disturbance by construction. Test Cut AD was 2.5 feet by three feet and excavated to a depth of 2.97 feet below datum. The presence of a burned deposit, even in a disturbed context, suggests that the building defined by the stone wall to the west was the early nineteenth century structure destroyed in the 1835 fire.

Lot 43. In Lot 43, preparation for testing was accomplished by using the backhoe and front end loader to remove twentieth-century demolition debris and to expose the basement floor. After

removing the floor, hand excavation began. In total, four test units were excavated in Lot 43. Backhoe scraping reached a depth of 3.25 feet below datum in the middle part of the lot and approximately six feet in the west area.

The initial backhoe scraping below the basement floor proceeded from west to east. Scraping revealed wooden beams on the west, or back lot line. These were clearly associated with the back wall of the most recent structure. Approximately 6.5 feet east of the wooden beams, a line of stones, later determined to be remains of a north-south wall, was uncovered running north-south.

Test Cut I was placed equidistant from and parallel to the stone wall and the wooden beams. It was a north-south trench, two feet by 11 feet, excavated to a depth of approximately 2.5 feet below datum. This unit was intended to test for stratified deposits and/or features which might remain between the two walls. The materials recovered and profiles recorded indicate that the area had been largely disturbed by the construction episodes associated with the two walls. Excavation below these deposits and the spread footer complexes exposed dark grey-brown silt which has been interpreted as landfill.

Test Cut AA was a 2.2 feet by 3.5 feet unit within a brick structure located within the Lot 43 building in its southwest corner. The brick structure was rectangular in shape (nine feet by 6.4 feet) and was above the basement floor. It was six courses high and three courses wide. Test Cut AA was excavated to a depth of 1.7 feet. The materials within the unit were primarily hard-packed soils with high densities of mortar with brick rubble, and a few pieces of pipe stem. After recording the stratigraphy in Test Cut AA, the brick structure was removed with the backhoe. A circular shovel test, Test Cut AB, 1.4 feet in diameter, was excavated below Test Cut AA. The mortar and rubble continued for another foot and was underlaid by a brown silty sand with a very low artifact density.

Test Cut AI was a long, narrow trench (one foot by 45 feet) extending east-west through Lot 43. It was intended to probe below the depth of a shallow backhoe trench to determine if other fill retention structures existed on the eastern side of the site. No such structures were encountered. The profile was recorded and diagnostic materials collected. Landfill deposits, consisting of a dark, grey-brown silty sand, were encountered in the western part of the lot at a depth of four feet below datum.

A wooden post was located in the west end of Lot 43. The post was approximately eight inches by three inches, and was encountered below the level of the spread footers for the back wall of the lot. No bulkhead has been identified as yet in that area. However, it has not been possible to test under the spread

footers without undermining the features in the backyard area of Lot 7.

An east-west bulkhead was identified on the south lot wall of Lot 43. It may articulate with other bulkheads but it is necessary to remove spread footers in Lots 7 and to complete testing in Lots 6 and 44 before this can be established.

Test Cut AH was located in the eastern part of Lot 43. It was defined by the perimeter of a barrel, encountered during the backhoe scraping between the spread footer complex associated with the northern lot wall and central support. The barrel, which appears to be intact, was placed in a clay lined pit. A 10 gallon sample of the interior matrix was wet screened. It produced a few pieces of ceramic.

Wood pilings were found below north-south beams located approximately 20 feet west of Test Trench East. It is likely that the beams are the remains of the back wall to the early nineteenth-century structure. No spread footer planks were found below the beams which rested directly on the pilings. The pilings were arranged in a staggered, north-south pattern, and had been trimmed, apparently to accommodate the beams.

Interpretation and Recommendations

In our professional opinion, further archaeological work is warranted to mitigate the impact of the construction of Financial Square on the archaeological resources on the site. In the discussion that follows, resources that we feel require further work are divided into two categories: 1) those related to the use of the site both before and while it was being filled; and 2) those associated with the subsequent occupation of the site.

Resources related to the use of the block both before and while it was being filled. Block 35 is unique in that four different kinds of wharves and bulkheads have been found on the site. In addition, as the mitigation phase of the archaeological program will be implemented only after the installation of the slurry wall around the perimeter of the block (thus reducing the problem of water control), it will be possible to record these structures and to document the landfilling sequence in a way that has not been possible on any of the other sites excavated in lower Manhattan.

1. The Wharves. Sections of two, separate cobb-type wharves were uncovered during testing. Together, these wharves extend from Lots 9 through 6 to the east of Test Trench West's sheeting. The wharf in Lots 6 and 7 is several feet wider than that in Lots 8 and 9, and there is a definite division between them in the southern part of Lot 8. Apparently, the one in Lots 6 and 7 was installed first, as the east-west bulkhead extending to the west (and exposed in Test Trench West) connects to this wharf. We have tentatively interpreted that this wharf line formed the

extent of the area of the part of the block that was filled between 1775 and 1782, and that this wharf line continued to serve as a sea wall until after 1797.

The presence of these wharves on the site provides the opportunity to record the construction of two examples of this kind of wharf. Although similar wharves were found on the Telco Block and 175 Water Street sites, their location (extending beyond the site perimeter on the Telco Block and under the backyard area of the 175 Water Street site) precluded the possibility of adequately recording their construction. These wharves were made in a vernacular tradition that has not been fully described in the literature. Therefore, the only way to learn about the construction techniques used in building these structures is to record them in an archaeological context. Information learned about these construction techniques will apply directly to one of the research questions outlined in our proposal on recording the technology used in landfill structures. In addition, the recording of these construction techniques may also provide insight into the craft traditions being practiced in New York City in the 1770's and 1780's.

We recommend that the following tasks be carried out to document the construction of these wharves:

a. These wharves should be recorded in plan and section drawings and photographs. Special attention should be paid to recording construction details such as joinery. A consultant, versed in eighteenth-nineteenth century construction technology, should help to oversee the recording, to ensure that no relevant details are omitted.

In order to record the plans of these wharves, the spread footer complexes (used to support nineteenth century foundation walls) that have been built on top of the wharves should be removed. In order to record the sections of these wharves, the backhoe should be used to remove the landfill surrounding them down to the harbor bottom, so that their relation to the harbor bottom and method of installation can be recorded. We estimate that harbor bottom should be between 10 to 15 feet below datum, or 8 to 13 feet below the top of the cobbwharf.

b. In addition, parts of the interior of each of these wharves should be excavated, and the material retrieved should be screened. Sections of the interior of the wharves should be drawn and photographed. This information should help in dating the construction of the wharves, and also provide more details on their method of construction. The fill used in each of the wharves appears to be different, with rounded cobbles used in the one located in Lots 8 and 9, and angular stones in the one located in Lots 6 and 7. The area to be excavated will be determined by the structure of the wharves. If the wharves are constructed in horizontal sections, or cribs, then the contents of one of the section in each of the wharves will be excavated. If the wharves are not constructed in cribs, then an area of not

more than ca. 12 feet (half the width of a lot) by ca. 10 feet (the average width of the wharves) will be excavated. In either case, the materials inside the wharves will be excavated stratigraphically, screened, and artifacts, following the procedures used in the Testing Phase, will either be retrieved and/or weighed and discarded in the field.

2. The Bulkheads. We have tentatively identified five wooden features as lines of bulkheads, used as fill retaining structures. These features are: the east-west vertical plank structure located along the Lot 7/8 property line to the west of the wharf, and uncovered in Test Trench West; and four horizontal plank structures. Two of these are oriented east-west along the Lot 7/8 and 6/7 property lines respectively, to the east of the cobb wharves, while the other two are oriented north-south, in the back of Lots 42 and 43. The backhoe should be used to expose these features down to harbor bottom so that their function can be confirmed and their construction recorded. The consultant versed in eighteenth and nineteenth-century construction techniques will also be used to oversee the recording of these features. It has been noted that the technology used in constructing such features varies with the conditions of the under water surface in which they are being installed (Michael Raber, personal communication; Andrea Heintzelman-Muego, paper presented at the Society for Historical Archaeology meetings, 1983). This technology is only evident at the bottoms of these features. The construction of these features is also relevant to the research question outlined in our proposal in the technology of fill retaining structures.

3. The Pilings. Two sets of pilings have been exposed on the site. These are: a) oriented east-west along the property lines dividing Lots 8 and 9, and 41 and 42; and b) oriented north-south midway through Lots 43 and 44. The east-west pilings were exposed in Test Trench East, and two of these pilings were pulled. Their ends had been sharpened to points, which had been reinforced with iron straps, presumably for installation. These pilings had been driven through harbor bottom. The remaining spread footers covering these pilings should be removed, and the locations of the pilings should be recorded. We have tentatively interpreted that these pilings are part of Gouverneur's Wharf.

The function of the other set of pilings, oriented north-south in Lots 43 and 44, is somewhat unclear. The back walls of earlier buildings on these lots were placed over these pilings. These walls, unlike others found on the site, were built on spread footer beams. The underlying spread footer planks, usually included in these constructions, were omitted. This suggests two possible interpretations: 1) the pilings were installed to support the spread footer beams (an architectural solution to the problem of building on unstable landfill; this technique has not, to our knowledge, been recorded in lower Manhattan); or 2) the pilings were originally installed as part of a north-south wharf, and were adaptively re-used to support the spread footer beams when the buildings were later built. There is no documentary

evidence indicating a wharf at that location. This problem in interpretation should be resolved.

If these pilings were installed as an architectural solution, they presumably would have been used to support the side walls of the structures. The spread footer complexes of the more recent buildings along the Lot 42/43 and Lot 43/44 property lines should be removed in the area to the east of the pilings and to the west of Test Trench East, and this area scraped to see if pilings are present. (It should be noted that pilings were not found along these property lines in Test Trench East). In addition, the back wall of the earlier structure in Lot 42 was built in line with those in Lots 43 and 44. However, the construction of this wall in Lot 42 included the use of spread footer planks as well as the overlying beams. This complex should be removed, and the underlying area scraped to look for pilings. If pilings are found here, it would suggest that the pilings were part of a wharf, and were adaptively re-used to support the back walls in Lots 43 and 44, while the spread footer planks were added in Lot 42. Furthermore, the preservation of these pilings in Lot 42 might suggest that the wharf extended south from Gouverneur's Wharf, located in Lot 41. If no pilings are found in Lot 42, it might suggest either that they had been installed in Lots 43 and 44 as an architectural solution or that they were part of a wharf that extended north from Bache's Wharf, located further to the south, probably on Lots 5 and 45.

If the pilings were initially part of a wharf, there should be another line of them further to the east (we have already scraped down Lots 42 and 43 and have not found any further to the west). The area to the east of the pilings and west of the sheeting for Test Trench East should be scraped down to look for more of them.

In summary then, the work involved in determining the function of these pilings consists of the removal of the north-south spread footer complex in Lot 42 and the east-west ones on the Lot 42/43 and 43/44 property line to the east of the exposed pilings and to the west of Test Trench East. In addition, the area between the pilings and Test Trench East should be scraped down to see if another line of these pilings is present. The locations of each of the pilings found should be recorded. Furthermore, one of them should be pulled, if possible, to determine how their points were prepared and how far they were driven into the ground. Presumably, pilings installed after landfilling for architectural purposes would not necessarily have been driven through the harbor bottom, whereas those installed prior to landfilling, for wharf construction, definitely would have been.

4. The Landfill. The configuration of wharves and bulkheads uncovered on the site tentatively suggests that this part of the block may have been filled in five separate filling episodes: 1) the area to the west of the cobb wharf in Lots 6 and 7, south of the vertical plank bulkhead; 2) the area to the north of this bulkhead and west of the cobb wharf in Lots 8 and 9; 3) the area to the east of the cobb wharf in Lot 8 and west of the north-

south bulkhead in Lot 42; 4) the area to the east of the cobb wharf in Lot 7 and west of the probable bulkhead in Lot 43; and 5) the area to the east of the north-south bulkheads in Lots 42 and 43 and east of the cobb wharf in Lot 9. Stratifying the site into these landfill areas, adequate bulk samples of landfill (of at least 100 gallons each) from each of these filling episodes should be excavated with the backhoe and screened.

In addition, the domestic deposits sampled in Test Unit N in Lot 41 require further work. Although this material apparently was deposited as part of the landfill, the nature of the soil matrix suggests that it originated as nightsoil deposited in a privy. The artifacts in this deposit comprise an assemblage of early nineteenth-century domestic materials.

The artifacts recovered through these processes should provide temporal information to document the filling sequence on the block, and may also provide data to be used in addressing the issue of the development of the cult of domesticity in late eighteenth and early nineteenth-century New York City, as outlined in our proposal.

Resources associated with the occupation of the site. In addition to the resources outlined above that were associated with the landfilling of the block, the site also contains resources related to the block's subsequent occupation. Six of these sets of resources require mitigation phase work.

1. The privies. The contents of two privies, located in Lots 7 (Test Cuts U, V and T) and 8 (Test Cut W), were sampled in the course of testing. The remainder of the contents of these features should be excavated, so that their time of abandonment and subsequent filling can be documented and the artifacts discarded in them can be retrieved. They apparently were abandoned in the second and/or third quarter of the nineteenth century, during the period when the block was being used for strictly commercial purposes. In addition, the stone walls of these privies should be dismantled and the soil matrix between the stones should be screened, so that the periods of the privies' construction may be documented.

2. The barrel. The barrel (Test Cut AG) located east of the early back wall in Lot 43 and sampled during testing, also requires further work. The contents of the barrel should be completely excavated, so that its function and period of filling may be documented. In addition, the clay which lines the pit in which the barrel was installed should also be excavated, in order to document the period when the barrel was installed.

3. The spread footer complexes. The extensive spread footer complexes that were found under most of the stone walls on the site should be recorded, so that the sequence of construction of these walls and their associated buildings can be documented.

4. The burnt deposits on the wooden floor in Lot 9. The burnt deposits on the pre-1835 wooden floor in Lot 9 should be sampled up to its Front Street property line and the construction of the floor should be recorded. We recommend that a 50% sample of the deposits on this floor should be excavated in five foot squares placed in a checkerboard pattern. A maximum of 25 such units will be excavated. This building was being used by a grocer at the time of the Great Fire. The recovery and recording of the variability and distribution of the materials on the floor will provide insight into early nineteenth-century merchandise handling practices.

5. The backyard of Lot 7. The backyard of Lot 7, in addition to containing the privy referred to above, also contains part of a wall, possibly associated with an outbuilding, and the remains of a wooden box-like structure. This is the best-preserved backyard examined on the site. We recommend that further excavations be conducted in this yard to determine the function and time of abandonment of the box-like structure and to document the construction of the stone wall, so that its function and, perhaps, the dimensions of this building can be determined. The maximum area to be examined in this backyard will not exceed 200 square feet.

6. The trash pit in Lot 9. The feature tentatively identified as a trash pit in Lot 9, sampled in Test Cut J, should be fully excavated. Its horizontal extent is not great, and total excavation is warranted to determine the variability in the deposit. These deposits are the only ones which have been encountered as primary domestic refuse on the site.

The logistics of implementing this archaeological mitigation program will have to be worked out on an ad hoc basis. In many cases, the occupational resources in the backyard areas will have to be excavated and/or recorded before the underlying landfill retaining structures can be excavated and/or recorded and the samples of landfill retrieved. In addition, the archaeological work will have to be tightly integrated with the construction schedule on the site, to ensure that this work is completed as expeditiously as possible.

Appendix

The logistics and estimated level of effort for the mitigation phase for Lots 7, 8, 9, 41, 42, and 43 on Block 35 are presented below. This appendix assumes that the installation of the slurry wall will take ca. six weeks from 4 June 1984 to complete, and that work can begin on the northernmost four lots (Lots 8, 9, 41, and 42), with the exception of the backyard of Lot 8, only after this work is completed. Work will begin on Lots 7 and 43 as soon as clearance is given by Landmarks, preferably on June 11, at the beginning of the second week of slurry wall construction. Work will begin in Lots 6 and 44 after testing is completed and clearance for mitigation is given by Landmarks. Work will begin in the backyard of Lot 8 at the end of the fifth week of slurry wall work. The appendix also assumes that the archaeologists will have access to the northernmost four lots (Lots 8, 9, 41, and 42) for at least four weeks after the completion of the slurry wall.

The Five Weeks of Slurry Wall Construction

Lot 7: work to begin as soon as clearance is given by Landmarks.
Tasks:

1. the privy (Test Cut T, U, and V), three people for ten days to excavate contents and wall.
2. the wooden box-like structure, three people for ten days.
3. the wall area of the outbuilding, three people for ten days.
4. record spread footers, two people for two days.
5. remove spread footers, two people for two days with backhoe.
6. excavate part of wharf, four people for eight days.
7. excavate upper portion alongside wharf, two people for two days with backhoe.
8. record upper portion of wharf, two people for six days.

Lot 43: work to begin as soon as clearance is given by Landmarks.
Tasks:

9. remove reinforced concrete floor and overburden from top of barrel (Test Cut AG), one person for one day with hammer and backhoe.
10. excavate contents and clay lining of barrel feature, three people for eight days.

11. record spread footers, two people for two days.
12. remove spread footers on Lot 43/44 property line to look for pilings, two people for two days with backhoe.
13. scrape to look for pilings, two people for one day.
14. try to pull piling, one person for one day with backhoe.
15. scrape to look for pilings between north-south line of pilings and sheeting for Test Trench East, two people for three days with backhoe.
16. excavate and screen samples of landfill from Lot 7 (between cobb wharf and possible north-south bulkhead) and in Lot 43, east of bulkhead, two people for four days with backhoe for one day.

Lots 6 and 44: mitigation to be determined at end of testing; fifteen days with a crew of ten tentatively scheduled.

Lot 8: work to begin in backyard of Lot 8 in sixth week of slurry wall construction. Task:

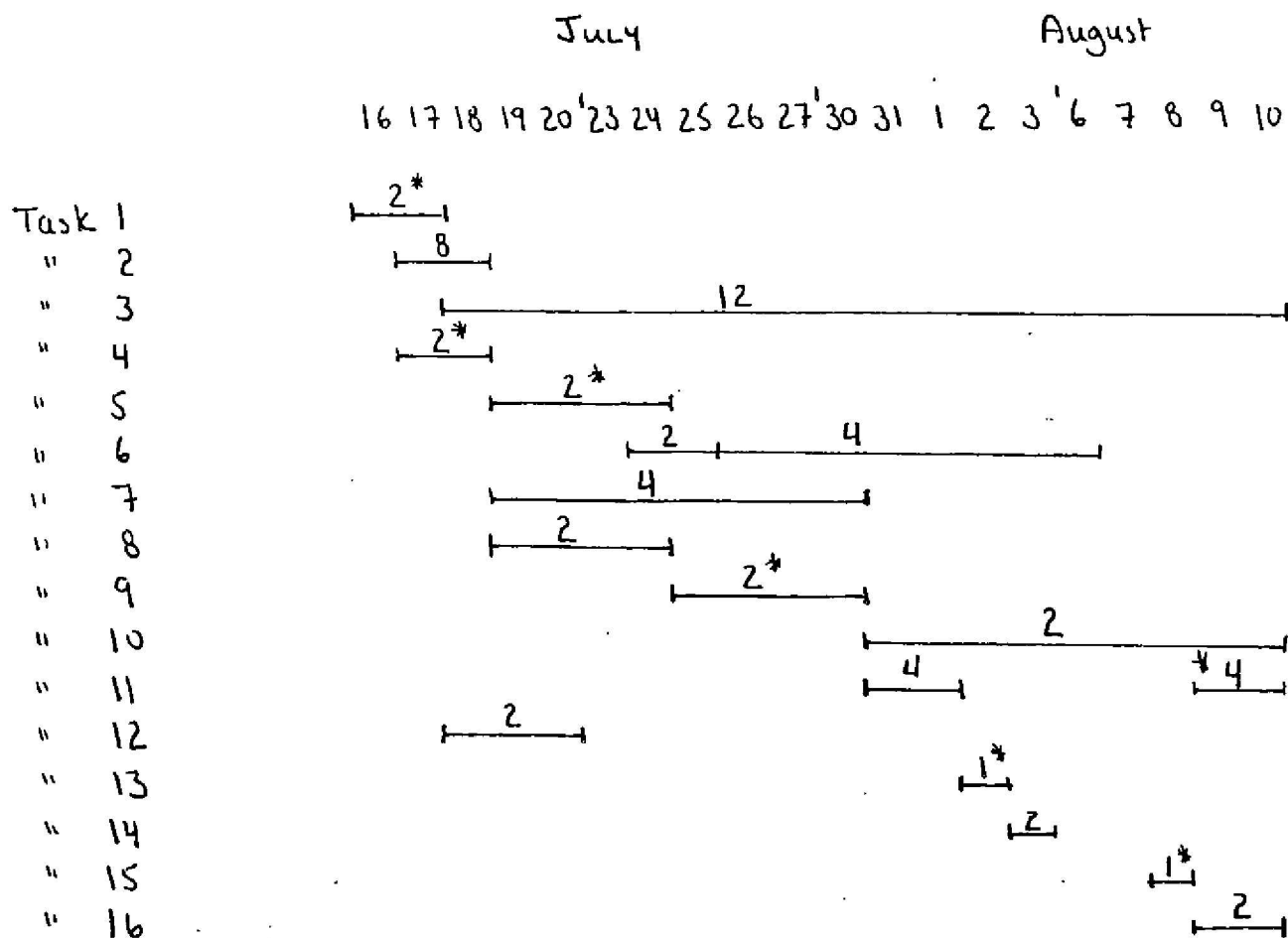
17. excavate privy (Test Cut M) contents and wall, five people for five days.

The Ca...Four Weeks After the Slurry Wall is Completed

Lots 9, 41, and 42 and the rest of Lot 8: Tasks:

1. remove backfill from Lots 8, 9, 41, and 42 with front-end loaders, two people for two days.
2. remove salt hay and plastic from areas to be excavated, eight people for two days.
3. excavate 50% sample of burnt floor deposits in Lot 9, ca. 18 five by five foot units, 12 people for 18 days with pneumatic hammer.
4. remove spread footers from backyard area, two people for two days with backhoe.
5. excavate alongside wharf to expose it down to harbor bottom, two people for four days with backhoe.
6. record outer construction of wharf, two people for 10 days and two people for eight days.

7. excavate section of wharf in Lot 8 or 9, four people for eight days.
8. plan bulkheads in Lots 7, 43, 8, and 42, two people for four days.
9. excavate alongside bulkheads to expose them down to harbor bottom, two people for four days with backhoe.
10. record bulkhead construction, two people for eight days.
11. sample and screen landfill in backyard of Lot 8 and Lots 41 and 42, four people for four days.
12. Test Cut N. in Lot 41, complete excavation, two people for three days.
13. remove spread footers from Lots 8/9 and 41/42 property line to look for pilings, one person for one day with backhoe.
14. scrape to look for and record pilings, two people for one day.
15. remove north-south spread footers in Lot 42 to look for pilings, one person one day with backhoe.
16. scrape to look for and record pilings in Lot 42, two people for two days.



*-machinery needed
no-- number of crew

Figure 2. Projected schedule and estimated level of effort for mitigation work during the ca. four week period after the slurry wall is completed.