

4962K

PLEASE RETURN TO  
LIBRARY  
LANDMARKS PRESERVATION  
COMMISSION

Stage 2  
ARCHAEOLOGICAL SURVEY

The Archaeology and History of the  
Empire Stores, 2-14 Main Street, Brooklyn

CONTRACT 1A  
RED HOOK WATER POLLUTION CONTROL PROJECT  
BROOKLYN, NEW YORK

for

Underpinning and Foundation  
Constructors, Inc.  
to Red Hook Constructors, Joint Venture  
Change Order No. 1A-1

OWNER-CITY OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY

Ralph S. Solecki, Phd.

597 Piermont Road

Demarest, New Jersey 07627

(with appendices by M. Alterman, A. Donadeo, & J. Geismar)

271

January 12, 1980

## Table of Contents

Abstract.....	ii
Introduction.....	1
History of the Empire Stores or "Coffee Warehouse".....	5
Description of the Empire Stores Warehouse.....	20
Main Street Pavings and Elevations.....	23
Sewer Tunnel and Geological Profile at Main Street.....	24
A Resumé of the Structural Problems of the Empire Stores.....	28
Work of the Constructors at the Empire Stores.....	35
Parks and Recreation Commission Archeological Findings.....	41
Summary of the Archaeological Investigations at the Empire Stores.....	49
Summary Description of Finds by Pits.....	56
Miscellaneous.....	61
Summary of the Artifact Analysis.....	62
Summary and Conclusions.....	66
List of Appendices.....	68
Appendix 1.....	69
Appendix 2.....	75
Appendix 3.....	115
Appendix 4.....	130
Appendix 5.....	143
Appendix 6.....	147
Appendix 7.....	157
Appendix 8.....	190
Appendix 9.....	193
Bibliography.....	200
Plates.....	202
Figures.....	208



Abstract

Studies showed that the construction of a new sewer tunnel in Main Street, Brooklyn, part of the Red Hook Water Pollution Control Project Contract 1A, might adversely affect the Empire Stores building, a historic landmark dating from 1885. Specifically the foundation pilings were discovered to be in bad condition. The defect was corrected during November and December, 1978. To comply with federal regulations, the excavations for the new supporting members of the east wall of the warehouse were done with an archaeologist in attendance. The archaeological findings are an example of historic fill archaeology, yielding artifacts dating from the late 18th century well into modern times. There appeared to be at least four fill episodes before the construction of the warehouse, presently property of the New York State.

## Introduction

This report concerns the excavation and recovery of archaeological materials from historic times in front of and under a warehouse called the Empire Stores on the Brooklyn water front. The work was done as part of the Red Hook Water Pollution Control Project, Contract 1 A during the fall and winter 1978-9. My connection with the project was through the firm of Underpinning and Foundation Constructors, incorporated, who learned of my work with Mason and Hanger-Silas Mason Co.

According to the information from the Landmarks Preservation Commission of the City of New York, the Empire Stores are reportedly among the most interesting and important buildings in the Fulton Ferry Historic District (Figs. 1, 2). They are said to constitute among the most impressive structures of its type left of the 19th century warehouses in New York City (Plates 1,2). The warehouses were built in two separate stages in 1870 and 1885. Although the background history of the Empire Stores given below treats the whole structure as a unit, of particular concern in this report is the latest building construction, the 1885 five storied warehouse, fronting on Main Street between Plymouth and Water Streets. The Empire Stores are identified as Nos. 53-83 on Water Street and Nos. 2-14 on Main Street (Landmarks Preservation Commission Report, 1977) (Fig. 3, Plates 3-6). Numbers 53-83 Water Street are not part of the problem, although No. 83 is noted in many of the contractor's reports and correspondences as a mis-identification.

Early in the history of the area, the water front faced quite naturally on present Water Street, with dockage at Main and Water Streets to accommodate the Catherine Street ferry, the newer competitor of the Brookland Ferry of the 1790's, later the Fulton Ferry (Fig. 4). The Catherine Street ferry stood where No. 1 Main Street stands today (Plate 3). The area was landfilled from about the early 1800's, possibly about 1835, since the street was paved on Main Street about 1842. There must have been some building activity on the reclaimed land behind the newly constructed bulkheads on the East River as indicated in the available land records. There may have been a ferry slip up Main Street to Water Street if landfill proceeded around the ferry house up until the time of the street pavement. The expansion of Main Street from the narrow thoroughfare

south of Water Street north to the broad 100 foot width between Water and Plymouth Streets may have been the result of the enclosure of an original ferry slip accomodating wide ferry boats side by side (Plate 3, Fig. 3).

Mention is made of warehouses in the records in this area by the middle of the 1800's. Construction activity was recorded there about the 1860's. A big fire in 1869 wiped out a number of the water front warehouses in the district, including those occupying the Empire Stores lots. The Nesmith family, which later owned the Empire Stores, entered the warehouse business in this area in the 1850's, buying property up gradually. The property between Dock Street and Main Street was especially favorable, since it fronted on the East River (Plates 7 & 8), close to the Fulton Ferry and the Catherine Street Ferry, with easy communication to New York. As mentioned above, one part of the Empire Stores, the major four story western part, was built in 1870, and the other (the Coffee Warehouse) was built in 1885. Thus, reconstructing the historic events we have (1) an early 19th century fill zone with a terminus date of ca. 1840, (2) the construction of buildings ca. 1850, (3) a burning of these buildings in 1869 followed by (4) construction of buildings dating from ca. 1870 (which may not be seen in this part of the Empire Stores area), and then (5) the construction of the 5 story Coffee Warehouse in 1885, and lastly (6) any modern intrusive construction since the erection of the 1885 building. With this past history as a guide, one of the problems is to see whether there is archaeological evidence substantiating or qualifying in any way what we know of the past history of the Empire Stores and its environs.

The archaeological evidence confirms this history, with one piece of additional information that there were at least two land fill episodes involved. The first was pre-1860, and the second was post 1869 (so far as can be judged), when the warehouses burned down.

I had made an archaeological survey report for Mason and Hanger on the route of the route of the then projected sewer under Contract 1A R.W.C.P. in the area of the Empire Stores earlier in 1977. My survey indicated that the 102 inch sewer would have minimal effect on the archaeology in the area of Main Street, since it would be

tunneled through well below the area of any possible archaeological remains (Solecki, n.d.). A realignment of the tunnel called for in the spring of 1978 by the Red Hook Constructors, the builders of the sewer in the area of the Empire Stores, called for its possible impact on this building. This structure, a historic landmark, was situated in part on the tunnel route on Main Street. The investigation by consulting engineers indicated that the structure's foundations were unstable to the point of labelling the building as a hazard to the traffic. The Underpinning and Foundation Constructors corporation was called in to make further investigations and tests. On the basis of their findings coupled with other confirming opinions, this organization was directed to make the foundation supporting the east wall of the Coffee Warehouse at 2-14 Main Street strong enough so that there was no possibility of collapse in that quarter.

Since I had been previously involved with the archaeological phase of the project with Mason and Hanger, I was asked and accepted the job of following up the archaeology involved in the Empire Stores foundations excavation. To assist me in the work, three graduate students from the Department of Anthropology, Columbia University, were employed. These included two field archaeologists, Mr. Michael Alterman and Miss Anne Donadeo, and one laboratory archaeologist, Mrs. Joan Geismar, who did the analysis of the artifacts.

The archaeology on the site may be divided into three stages. The first stage comprised four days work in May, 1978, when the Underpinning and Foundation Constructors put exploratory tests along the Main Street wall of the Coffee Warehouse. A New York State archaeologist, Mr. Paul R. Huey, was in attendance during the first stage. Mr. Michael Alterman collected archaeological data during a brief interim in the excavation of test pits inside the Coffee Warehouse in October. The third stage involved the larger project, when archaeologists Alterman and Donadeo stood the day and night shifts each from November 15 to December 14, when there was no further excavation at the site.

In this report, the background history of the Empire Stores is given, followed by a description of the Empire Stores warehouse, and its physical environs including the Main Street pavings and elevations and the geological profile along the route of the

tunnel along Main Street. This is followed by a resumé of the structural problems of the Coffee Warehouse leading up to the present investigations. The next section deals with the work of the constructors at the warehouse and what procedures were necessary in order to prop up the building foundations. This section is followed by a summary based upon the field report of the Parks and Recreation Commission's state archaeologist, Mr. Paul R. Huey, who was their representative in the excavation of three tests in May, 1978. This is followed by a summary of the work of the Columbia University archaeologists. This includes the field reports of Mr. Alterman and Miss Donadeo, and the artifact analysis by Mrs. Geismar, which are summarized here. Mention is also made of the finds in the excavation of Manhole No. 5 in Main Street, and the artifacts recovered by the construction workers in the tunnel penetrating the fill. The field reports of Alterman, Donadeo and the laboratory analyses of Geismar are given in the appendices. There are 9 appendices in this report. The summary and conclusions follows the archaeological reports.

I made a total of ca. 20 site visits to the Empire Stores for the purposes of excavation inspection, conferral with the field archaeologists, and for photography. For the documentation of the history, I researched in various libraries and institutions, including the Long Island Historical Society, the New York Historical Society, the New York Maritime Museum on John Street, Columbia University, Brooklyn Borough Hall, the Landmarks Preservation Commission, the James A. Kelly Institute at St. Francis College, and the Department of Transportation at 40 Worth Street.

I am obliged to a number of persons for their assistance, including Mr. Chris Nobriga, Resident Engineer of the company of Mason and



Hanger-Silas Mason, Mr. John Ruggiero, Deputy Resident Engineer with the New York City Department of Environmental Protection, and Mr. Edward MacNamara, vice president of the Underpinning and Foundations Constructors, Incorporated, who employed us for the project.

Lastly, I am very much obliged to Mr. Paul R. Huey for permission to use this report material from his memorandum to Mr. Edward Lynch, Director of the Historic Sites Bureau of New York State. His report is a model in archaeological exposition.

The photographs, all taken by me, represent a portion of the number I have taken of the operations at the site. Dorothea Goldes Bass did most of the line drawings in this report.

Since the Coffee Warehouse is New York State property, the artifacts are claimed by the state. So far as I am aware, they are the first specimens to be recovered from land fill along the East River in Brooklyn. On reflection, one may state that they represent the first land fill derived artifacts on Long Island, and much of it from below sea level. There is evidently a treasure trove of historical archaeology along the river front. The major problem of course, is the expense of extraction in a city environment.

### History of the Empire Stores or "Coffee Warehouse"

The area just to the north of old lower Fulton Street (renamed Cadman Plaza West) is shown on the old early colonial maps as part of the John Rapalye property fronting on the East River. It was originally occupied by a family of Indians called the Mareykawicks (Bolton, 1920, p. 271), a branch of the Canarsie Indians, who controlled much of the western Long Island. Physical evidence of Indian occupation was found and noted in the area by Gabriel Furman in 1826 (Furman, 1865, p. 34; Furman, 1874, pp. 98-100).

The map of Brookland Ferry in 1766-7 and 1867 (Fig. 5) does not show the existence of Main Street before the Revolutionary War. Indeed, according to this map, the East River shore came to about between Front and Water Street on the present Main Street line. The land above the Fulton Street ferry was owned at this time by Mr. John Rapalje (or Rapalye).

It is recorded that on May 13, 1702, in Liber 2, p. 225 (Block 26, Lot No. 1, Long Island Historical Society records) that Jooris and Jacob Hansen were the grantees of the property. The Rapalye family acquired this property later. The lands of John Rapalye, lying between the Fulton Ferry and Wallabout Bay were confiscated by the City Corporation and were sold to the Sands Brothers in 1784 (Armbruster, 1919, p. 24), in whose family the land was held until 1801. These brothers with the later addition of a new partner, Jackson, laid out the land in streets in 1788, and named the place

"Olympia," with the belief that this was going to become the "coming city on account of its superior situation" (Stiles, 1884, Vol. I, pp. 102-3). The owners, Messrs. Sands and Jackson, claimed that "Olympia is extremely well calculated for a city; on a point of land which presents its front up the East River, surrounded almost with water, the conveniences are almost manifest. A considerable country in the rear affords the easy attainment of produce. A pure and salubrious atmosphere, excellent spring water, and good society, are among a host of other desirable advantages. As regards health in particular, it is situated on the natural soil - no noxious vapors, generated by exhalations, from dock-logs, water and filth sunk a century under its foundations, are raised here." (Ibid.) The authors of this tract would never recognize the area today. In the same description is the prophetic suggestion that a bridge be built from Olympia across to New York, and the Wallabout would form an excellent Navy yard (Ibid., p. 103).

A permit was given to William Furman and Theodosius Hunt (Furman and Furman, 1937, p. 7) in 1795 to establish a ferry at the foot of present Main Street, which met the Old Ferry Road at the point where the latter makes a sharp curve, so that the new ferry road formed almost a straight line. The ferry was located at about the junction of Water and Main Streets. It may be remarked that present Main Street hardly looks the part today, and few people know of its existence in Brooklyn. It is like a proud name gone to waste.

This landing place became known as the "New Ferry." Since the landing point in Manhattan was at Catherine Street, it became later known as the "Catherine Street Ferry." The road to the ferry was originally known as the "New Ferry Road," which later became changed to Main Street (not to be confused with Old Ferry Road or Fulton Street, which had been also called Main Road). The New Ferry, or Catherine Street Ferry was also called at one time "Teamboat Ferry" (Armbruster, 1919, p. 25). At this time, lower Main Street lay between high and low water tide marks (Fig. 6). The old water line went to the corner of the present Gold Street, and from there, along the line of present Marshall Street to the Wallabout Bay or the Navy Yard (Stiles, 1884, Vol. II, Footnote 1). There is some confusion in the records concerning changes in the shoreline in land transactions. In a record dated 1813 (Liber 11, p. 65) the East River is shown just to the north of Plymouth Street. Another document a year later (Liber 11, p. 73) shows the East River as 115 feet north of Water Street between Main and Dock Streets. This would have put the water line well short of Plymouth Street. In another record (Section 1, Block 26, Liber 118, p. 52) the land was still under water on March 28, 1844; and similarly the records show a low water mark of the East River arching just north of Water Street in 1846 (Section 1, Block 25, Liber 154, p. 100 to grantee Andre B. Hoxton, October 14, 1846). In another record dated January 1, 1848, the same water line is indicated just a little north and paralleling Water Street. Plymouth Street was under water in this

record, but there is an indication of where the bulkhead line was planned north of Plymouth Street as of 1835. This bulkhead line was established under the direction of a General Swift who recommended a line of bulkheads along the East River in 1836 (Stiles, 1884, Vol. II, p. 252).

Between the years about 1835 to 1850, there was increased activity in building in the Main Street, Water and Plymouth Street area. A wall of brick and stone is mentioned in a 1835 record (Liber 51, p. 272) at the corner of Plymouth and Main, and a bulkhead is mentioned in 1846 (Liber 153, p. 31) as being 503 feet north of Water Street on the East River, putting it well beyond Plymouth Street. On October 14, 1846 (Liber 154, p. 102) in a transaction to Caleb Smith, the low water line is indicated between Plymouth and Water Streets, with the ferry house still present on the corner of Water and Main (Plate 10).

It is very likely that there may have been landfill in the area of the Empire Stores on Main Street between Water and Plymouth Streets behind a bulkhead at least by 1835, and possibly earlier. In a transaction dated Nov. 22, 1811 (Liber 10, p. 251, L.I.H.) Joshua Sands and his wife Ann transferred property to Thomas Carpenter and Mark Fowler in the vicinity of the future Empire Stores areas. It shows the existence, at least on paper, of Plymouth, Main and Water Streets. The location of the alley between the corner of Water and Main measured about 50 feet long by 25 feet wide. The



ferry house for the Catherine Street or the New Ferry stood on the northwest corner of Water and Main Streets, now occupied by a commercial building with a gabled roof, The Economy Container Service Corp. The Catherine Street ferry house, also called a "Corporation house" is shown in land transactions in 1811, 1816, 1822, 1831, and 1846. The 1881 records (Liber 1417, p. 374) show the alley mentioned above as being 50 feet from the corner of Main and Water Streets on Main Street. The alley, of unknown purpose, is given as 19 feet wide and 87 feet long, which appears to be the approximate dimensions today. It was transferred by Joshua Sands to the City of New York on June 18, 1860 (Liber 530, p. 447). It is mentioned as being 25 feet wide. Today it is used as an overflow service area by the container service company.

According to Stiles (1884, Vol. II, p. 105) there were a few small wooden dwellings on Main Street in the 1820's and with the exception of one domicile, there were no other houses of note on the west side of Main Street up to the junction of Fulton and Main Streets. On the east side of Main Street, there were similarly few buildings. Activity was marked in this period by frequent changes. Up to about 1840, all streets in Brooklyn were simply dirt paved. The City Corporation began tearing down old structures between Pearl and Water Streets on the north side of Dover Street (Furman, 1865, p. 185). It is reasonable to assume that the broken up structures (if of brick) found their way to low lying areas as land fill, particularly land around the shore front. The area of Water Street between

Main and Washington Streets was raised and "regulated" in 1824 (Stiles, 1884, Vol. II, p. 220). At the foot of Catherine Street Ferry was established a small public market, called "Titus'" market, which was in reality a butcher stand, something like the one at the old Fulton Ferry.

So far as we can judge from the records, there must have been some landfill early in the 19th century on lower Main Street. As noted above, the alley now separating the Empire Stores from the commercial building on Main Street was in existence in 1811, presumably serving the same purpose then as today in separating building lines. Hence, it is inferred that the earliest structure we have any inkling of preceding the Empire Stores stood on the spot at least by that date. But no record of any building has been found there until the middle of the 19th century.

During the 1830's, parts of the property were owned by John H. Nesmith, a wealthy shipping merchant in Brooklyn. He and his family gradually acquired the whole block in a series of transactions. The Empire Stores were in existence in 1843, owned by Mr. Nesmith.

The first mention of land with a storehouse, wharves and a pier transfer found in the records is dated May 30, 1850 (Liber 218, p. 466, item 218), in which Thomas Smith transferred the property of the Empire Stores on the East River to Richard and John Thorne. The property is shown in the vicinity of Plymouth Street in Block 26, Section 1. An Alex Birkbeek held warehouse property in the area in 1852, and in 1856, mention is made of property on Main Street belonging to Richard Thorne. The major portion of the land on which the stores stand was acquired by James Nesmith in 1856. At that time, a group of brick warehouses dating from the very early 19th

century occupied the site. A Richard Ingraham transferred property to James Nesmith including apparently brick stores to the range of the old pier on Main Street from the north side of Water Street in 1860 (Liber 551, p. 427). It is recorded that Annie J. Barbarin held land on the west side of Main Street between Plymouth and Main in 1867 (Liber 749, p.392), hence it is inferred that Mr. Nesmith did not completely own the block at that time.

Henry Stiles (1867, Vol. 1, p. 575) observed that the Empire Stores was used for general storage in 1867. When in 1869, a major fire destroyed the earlier buildings, valued at \$ 31,000, near Dock Street, Nesmith began construction of the new four 4 story warehouses, the eastern section toward Dock Street of the Empire Stores complex. These were completed in 1870, and were christened "Nesmith and Son's Empire Stores", assessed at \$ 188,300. Business flourished, and in 1885, James's son, Henry E. Nesmith, commissioned Brooklyn architect Thomas Stone to design and build the three 5 story section of the stores toward Main Street. Stone retained the character and style of the earlier buildings in his design, although he varied the pattern of fenestration which in all of the 1870 buildings is alike. On both the Water Street and water front elevations at each story are three large round arched openings symmetrically flanked by single small arched windows. All seven warehouses are executed in dark red brick, with corbelled roof cornices.

The records in the Brooklyn Borough Hall (No. 192) dated April 16, 1885 indicate that the brick stores put up by architect Thomas Stone for the Nesmiths had the following specifications. Its Main Street elevation was to be five stories high, with three large

arched windows on the ground floor, and three smaller arched windows on the second to fifth floors. Three warehouse buildings were to be erected westward of Main Street toward Dock Street. The lot size was 181 feet 11 inches to the front, and 181 feet 11 inches to the rear. The depth of the lot of the first store was to be 19 feet 2 inches and 129 feet 2 inches to the rear. The building was to be 62 feet high with a depth of foundation of 3 feet 6 inches. The foundations were laid on piles and concrete. The base was to be of stone on wood piles 12 inches thick. The size of the base piers was to be 4 feet by 4 feet. The thickness of the foundation was to be 3 feet 6 inches of stone.<sup>1</sup> The upper walls of the first story was to be 2 feet 8 inches thick on the river front, and all other walls were to be 2 feet 4 inches thick. The second, third and fourth stories were to be 2 feet thick all around. The 5th story was to be 20 inches thick. The materials were to be brick, with the center wall of green stone, which was also to be of the same thickness. The party wall were to be 24 inches thick.

The walls were to be capped with blue stone. The material at the front was to be of brick. The roof was to be peaked, and the roofing materials were to be gravel. The access to the roof was to be by ladder. The cornice was to be of brick, and the building was to be equipped with iron shutters. The floor beams were to be all of yellow pine, measuring 4 by 14 inches. The roof was to have beams 3 by 10 inches in measurements. The stairways were to be of heavy timber of Georgia pine. It may be noted here that evidently the builders had no difficulty in obtaining the woods of their choice quite readily for even commercial buildings.

1. Mrs. Geismar suggests that since she did not see any evidence of burning in the artifacts, and since none of the artifacts associated with the foundation date ca. 1885, she believes that the 1860 foundations were reused for the 1885 construction (see table 3A, p. 176).

The architect wanted to use the brick wall of the building, then 4 stories high, on the south side of the new building as a party wall. The foundation wall was to be of stone 36 inches thick, the upper wall of brick 2 feet thick, 48 feet high and 190 feet deep. The owner was recorded as the Nesmith Estate, H. Nesmith, 117 Remsen Street. The building was to cost \$ 98,000.

The next important land transaction is noted on April 20, 1889 (Liber 1880, p. 490) in which the entire block between Dock Street and Main, and between Water and Plymouth, is shown in a transfer from George Baxter and James Nesmith to James Nesmith and his son, Henry. Henry Nesmith, who was born in 1828 and died in 1901, was a shipping and commercial agent for 50 years, carrying on his father's tradition. He was director of the Merchant's National Bank for 40 years (Bonner, 1924, p. 475). The bank was ultimately absorbed by Chase Manhattan Bank. His father, James Nesmith, was listed among the wealthiest men in Brooklyn in the book called, 'Century of Banking by Henry Wysham Lanier. He was valued at \$ 75,000, remembering of course that the dollar like the English pound, was several times its value of today. A picture of Henry Edwin Nesmith is given in King's Notable New Yorkers, 1896-9 (p.257).

The storage building at Water and Main Streets is documented in the Brooklyn Street Directory for the year 1873-4, owner James Nesmith and Sons. Nesmith is found listed as the owner of the storage facilities at the foot of Main Street in 1884-6, in the same directory. One of the later bits of information about the Empire Stores is found in the Brooklyn Daily Eagle Almanac for 1895. The U.S. Customs Inspection office for the 14th and 15th districts was located in the



Empire Stores according to this source. The names of ships utilizing the Empire Stores is noted in the same publication (ibid.pp. 130, 132).

We find ownership of the Empire Stores noted in a number of places in the late 1800's. One of the odder sources is the Supreme Court Notice of Dec. 10, 1867, between the Commisioners of Pilots and James Nesmith concerning some logs stored on the Empire Stores docks, and the legality of the storage. The case was dismissed. In Stiles (1871, p. 43; 1870, Vol. III, p. 575) are notes concerning the existence of the Empire Stores.

This facility, huge for its time, was originally used for general storage of such raw materials as coffee beans (hence the name "Coffee Warehouse"), animal hides, grains, raw sugar and molasses. These goods were brought in from all over by cargo ships from Africa, South America and Cuba. Because of their ideal waterfront location and proximity to the Brooklyn Fulton Ferry, the Empire Stores formed part of the life blood of the area for tens of years. But decline evidently set in during the last years of the century. We don't know how much of this, if any, was due to the new Brooklyn Bridge. In any case, the Nesmiths were ostensibly out of the picture in 1894, because a record indicates that the land of the Empire Stores then belonged to the City of New York (Liber 2224, p. 322).

Unfortunately, the early pictorial record or description of the buildings which must have stood on the site of the present Empire Stores could not be found in the literature searched. Thus, we have no idea of dimensions, construction materials, etc., of any building or buildings assumed to have stood there.

It is certain that a number of buildings in old "Olympia" had to be removed in order to build the Brooklyn Bridge, and certain other land gradings had to be effected in the bridge construction. What became of this rubble and earth had not been found in the literature at this writing, but it can be assumed that some of it at least found its way as landfill in the East River on the river side of the Empire Stores.

Presently old "Olympia" presents a forlorn aspect of warehouses and dreary battered business structures, a place where no one would want to find himself after dark. Its demise as a residential and business area can be directly attributed to the erosion of the neighborhood precipitated first by the erection of the Brooklyn Bridge, and later by the Manhattan Bridge, which flank this area on the south and north sides respectively. As a consequence, both the Catherine Street and Fulton Street ferries ceased to exist, and so died the neighborhood.

After the purchase of the Empire Stores property by the Consolidated Edison Company in 1963, there had been much interest in the site, raised by a revival of concern for historic remains. The company wished to put up a generator on the land, but never went through with it because of a change in plans. Between 1967 and 1969, the site was proposed for a wholesale meat market, taking in about 11 acres. In alarm, the Long Island Historical Society sent a letter to Mayor Lindsay indicating that they had gone on record to the effect that the Empire Stores should be preserved. According to a story in the New York Daily News (March 21, 1969), the idea of a waterfront meat market was abandoned by Mayor Lindsay, due to the local opposition to such

a complex near the prestigious Brooklyn Heights area. The coffee warehouse figured in the New York Times (Dec. 19, 1971; Nov. 25, 1972) in which plans were aired to make the area like San Francisco's Ghirardelli Square and Cannery, bringing to the Brooklyn waterfront a touch of seaside Frisco.

The entire area was listed on the National Register of Historic Places in 1974. Included in this was the Empire Stores (Fig. 1). Con Ed opposed inclusion of its parcel in the proposed Historic District saying that the Empire Stores did not possess a "special character or special historic or aesthetic interest of value to warrant designation as part of the Historic District." They vowed that rehabilitation of the Empire Stores was economically impossible, and the cost then would be about four million dollars. There were no plumbing, light, electrical, heat or other utility services in the building. Con Ed had bought the property in 1963 for \$ 1,325,000. The land was appraised in 1975 for \$ 935,000 and the improvements for \$ 175,000, or a total of \$ 1,100,000. The annual taxes were \$ 90,057. It was zoned as " M 2-3".

The next nail in the coffin was the Rennie report of 1974, which could not but have caused Con Ed's lawyers extra headaches. This report, a 48 page illustrated document, indicates that the Empire Stores was a far superior building for a New York State Maritime Museum compared to the facilities at Schermerhorn Row across the East River. The report promoted the Empire Stores for interpretive exhibits, and presented a most attractive and favorably economic picture of what could be done with the building. They proposed a library, administrative space, meeting rooms, and a mix of museum galleries and commercial space proposed as one side for the Empire Stores. The plan was drawn

up optimistically with a view toward an opening in 1980-1.

Excess capacity would allow in addition the installation of museum and other offices, apartments, shops, studios and other income producing facilities. The old slips in front of the Empire Stores were envisaged as being cleared out for the reception of vessels and working replicas of antique ferry boats. The maritime consultant gave a dimensional floor plan in the main building of Empire Stores (Rennie, 1974, p.38; Fig. 7), which is at variance with the engineer's sketch plan (Fig. 8).

Of the total site, comprising roughly 8.4 acres, about 4.5 acres was proposed for park and play area. The total floor area of the Empire Stores is given as about 341,000 square feet. It was estimated that the building could be acquired from Con Ed for between \$ 1,500,000 to \$ 2,000,000, and the estimated cost of restoration and adaptation of the building would be about \$ 9,400,000. An estimation of \$ 4,231,000 was given for the park bulkheading, dredging of the slips and other outdoor work. The original estimates were based on surveys of the time, and no one had investigated or worried about the substructure of the building. The findings of the Underpinning and Foundation Construction Company (detailed below) and their associated consultants indicates that the Rennie report estimate of the costs of rehabilitating the building were far off the mark.

The purchase price advertised for the building was given as \$ 1,250,000 on November 20, 1975. A meeting of the Landmarks Preservation Commission was convened on Dec. 29, 1975, in which was discussed the status of the Fulton Ferry Historic District. The Con Ed Company was in opposition to the move to include the Empire Stores,

which it saw as a threat to their investment.

On January 19, 1976, we find that a Samuel Dworkin communicated to the Con Ed Company expressing an interest in purchasing the Empire Stores property. Later that same month, the city administration communicated with the New York State Park and Recreation Commission proposing a plan for the use of the Empire Stores by the New York Maritime Museum, no doubt on the Rennie report suggestion. This was reiterated in an article in the New York Daily News (July 18, 1976) indicating that the no. 1 project of the National Maritime Historical Society, another group on the Brooklyn side of the Brooklyn Bridge was to acquire the Empire Stores. This was not followed through.

Even after the property had been sold to the New York State, there were additional requests for the purchase of the property. An Arthur Elman contacted the Commissioner of State Parks in Albany claiming his interest in the development of the property for commercial use combined with a museum, which made a front page story in the Brooklyn Phoenix on June 26, 1978. This was followed by another query from a Peter A. Ralston, who expressed interest in the Empire Stores and the upgrading of the Brooklyn shore. The reply to Mr. Ralston was that the Empire Stores were now owned by the New York State Maritime Museum.

It is certain that none of these requests for the purchase of the property would have been forthcoming had the interested parties known the facts about the condition of the building, which developed from a very innocent routine investigation in connection with Contract 1 A.

Part of the Fulton Ferry area was proposed for designation as an Historic District by the Landmarks Preservation Commission at a meet-



ing held at City Hall on March 8, 1977 (Fig. 6). The only serious opposition came from the then owners, Con Ed. The Empire Stores and 85 Water Street are indicated on the Historic Sites Register (Rosan et al, 1972). The Landmarks Preservation Commission appeared to favor the preservation of this building, contrary to the advice of Con Ed, who wished to see it demolished.

Con Ed advertised the property for sale in the New York Times on March 20, 1977 with a minimum asking price of \$ 1,000,000. The Phoenix (March 24, 1977) carried a story a few days later that the Jehova's Witnesses were named as possible buyers of the property. The New York State Department of Parks and Recreation was indicated in the story as having no plans to acquire the building, which left a question of obvious concern to those groups wishing to see the Empire Stores preserved. A group of potential developers, Arthur Elman and Alan Rose and a real estate developer named Howard Haynes had been negotiating with Con Ed for the purchase of the property according to another story in the Phoenix the next month. They had proposed a shipping, cultural and a recreational facility at the site, which made the front page of the newspaper on April 14, 1977.

The project appeared to sleep during the summer, then on Sept. 16, 1977, the Board of Estimate unanimously approved the designation of the Fulton Street Ferry area as an official historic district. The same month, the Elman Development group had a public meeting of interested people concerning Empire Stores. The plan for the conversion of the property into a commercial and recreational area was enthusiastically received, but there were some questions concerning the types of commercial enterprises to be located there. In the now

fast moving scenario, city officials visited the site a couple days later that month to appraise the situation.

The following spring, the Phoenix reported on March 2 and April 20, 1978, that the New York State Department of Parks and Recreation had purchased the nearly 9 acre Con Ed tract, including the Empire Stores on March 2, 1978, for \$ 750,000. According to the story, the Parks and Recreation Department was to take title to the site, and ultimately the Empire Stores was to house the New York State Maritime Museum. The property, which Con Ed had valued at 9 million dollars, was vastly depreciated according to their opinion, by its inclusion in the Historic District.

#### Description of the Empire Stores Warehouse

The Empire Stores fills the whole block bounded by Water, Plymouth, Main and Dock Streets, with the exception of a little alley and a couple buildings taking up a small area on the corner of Water and Main Streets ( Fig.1,7). As noted above, the alley is an old relict feature, dating back to the late 18th century. The building next to it on the corner of Water and Main occupies the area where the original Catherine Street ferry house had stood. The Empire Stores is made up of two main parts, a four story warehouse on the south facing to Dock Street, and a five story warehouse facing on Main Street between Water and Plymouth Streets.

In the inventory nomination of the site to the National Register of Historic Places, the Empire Stores is indicated as including two expanses of brick construction, one on 53-83 Water Street being four to five stories in height and 28 bays in length. The other, 39-41 Water Street, has 14 bays, but was shortened to two stories prior to 1945. The building complex was constructed during the years

1869, 1874 and 1885.

According to a floor plan of the east building of the Empire Stores facing on Main Street (Fig. 8), the building width on this street measures 130 feet. The interior width is 53 feet, with exterior brick walls which measured 28 inches thick on the north side. It should be noted that the original design of the building called for a wall 32 inches thick on the river front side, and 28 inches on the Main Street side. Supporting the first floor are two rows of wood columns the length (north-south) of the room space, at a distance of 17.5 feet apart, each containing 10 columns (total 20) measuring 14 by 16 inches. These columns are 11.5 feet from center to center in each row. These columns (called piers in the original specifications) had been planned to be between 12 to 16 inches thick. The floor beams are spliced on the columns with 14 by 16 inches girders, supporting joists measuring 4 inches by 14 inches. This matches the original specifications quite well. The joists are 12 inches on centers. The flooring, in fair condition, measures 5/4 inches thick. The building is five stories high, has a height of 62 feet. The roof is flat with 5/4 inches sheathing with a paper build up surfaced with gravel. The north, south and east walls of the building are of brick on the first floor. The west wall is of stone. The wood columns decrease in size on the upper floors.

The Landmarks Commission surveyed the Empire Stores for its 1975 report, which is quoted in part here. It is claimed that the Empire Stores are "among the most interesting and important buildings in the Fulton Ferry Historic District." "These seven red brick warehouses give the impression of a single monumental building," although one must mention that it is dwarfed by the surrounding buildings and

bridges. The report goes on to state that " This complex must be counted among the most imposing surviving examples of warehouse architecture of the 19th century in New York City."

"The exterior design, in which functional considerations are primary, achieves an impression of austere simplicity through clarity, regularity, and repetition of architectural elements. The Empire Stores are typical of 19th century dockside buildings in Britain and the United States." "The warehouses have continuous facades with long rows of similar, round-arched windows and doors. The functional use of the brick, notably in the corbeling beneath the roof cornices and the handling of the voussoirs which emphasizes all openings, gives life and decorative interest to the otherwise simple facades. Metal tie-rod caps in the shape of stars, a pleasing decorative and functional detail, appear with heavy iron shutters carried on pintle-type hinges. Loading hoists project from the flat roofs of each section above the doors."

"The Empire Stores were among the many warehouses constructed during the post-Civil War economic boom along the Brooklyn waterfront. By 1870, the waterfront was so completely lined with privately owned warehouses and docks that Brooklyn earned the nickname of the "walled city." Many of these warehouses are no longer standing." The report goes on to state that the Empire Stores are "among the few survivors, and bear mute testimony to the prosperous commercial activity of Brooklyn during the second half of the 19th century."

Seen from the New York side of the East River, the Empire Stores look like a collection of very weather beaten forlorn looking and untidy cigar boxes strung along the river's edge.

Included in this report are details on the elevations and street

pavings of Main Street, as well as the geological data, since these are part of the record.

#### Main Street Pavings and Elevations

The construction of gravel sidewalks with curbstones was ordered for the Catherine Street or New Ferry in 1813 (Stiles, 1884, Vol. II, p. 31). The following information is derived from two different publications called "List of Paved Streets in the Borough of Brooklyn," one annotated by Burt (1943) and the other Anonymous (1960), found in the New York City Department of Highways at 40 Worth Street. The earliest pavings in the area at Plymouth and Main Streets near Water Street date from 1842, which is about the earliest pavings anywhere in Brooklyn.

Main Street, as befitting its name, was given priority attention on September 19, 1842, when its surface was graded and paved between Water and Prospect Streets. The stretch between Plymouth and Water Streets was repaved on May 29, 1871. The street was next given attention in two different stretches in 1917, when a contract was completed on August 8, 1917, in which granite paving blocks were put on a 6 inch concrete foundation between Plymouth and Front Streets on Main Street (Anonymous, n.d., Card 209/12). Main Street between Plymouth and Water Streets was laid with blocks, granite, grade 1, on a 6 inch concrete foundation to a width of 60 feet with a job completion on July 23, 1917. Main Street between Front Street and Plymouth still retains its cobble stones, in part resurfaced patchily with asphalt (Plate 4). Plymouth Street between Main Street and Pearl Street is practically bare cobble stones, punctuated toward Main Street by disused railroad tracks. Traffic in this area,

marked by one way streets, is generally choked with huge wandering delivery trucks blocking the narrow streets. One way streets help at least in keeping the trucks from meeting head on in the canyon-like passes.

Checking with the Topographic Bureau of the Brooklyn Borough Hall, I found two street elevation maps of Main Street. One of these, Map 942, illustrating the elevation of Main Street from Water to Plymouth, shows in exaggerated vertical scale the elevations from Prospect Street on Main to Plymouth. It indicates a bulkhead on the East River at the end of Main Street. There is no date on the map, or any other identification than the number.

On a street plan dated 1859, Map 24, the street elevation at Main and Plymouth Streets is marked as 6.5 feet, and the elevation of Water and Main Street is 8.0 feet. The width of Main Street between Plymouth and Water Streets is indicated as 100.0 feet. Another map, also dated 1859, adopted by the Common Council of the City of Brooklyn, gives the elevations of Main Street between Plymouth and Main. The elevation of Water and Main is 9.17 feet, and the elevation of Plymouth and Main is 7.08 feet. Evidently some time between the drawings of these two street profiles in 1859, the street level had been raised.

#### Sewer Tunnel and Geological Profile at Main Street

The sewer tunnel in Main and Plymouth Streets lies in the area formerly part of the East River. According to the Perris map of 1855 (Fig.6 ), the "ancient water line" (presumably high water line) cut to the south of Water Street. The early colonial records indicate that the low water mark was roughly between and parallel to Water and Plymouth Streets. Under the bulkhead plan of 1835, the

lands were filled in and made available for use a few years later.

According to the directions in the Plan and Profile Plymouth Street-Main Street to Washington Street, W.P. 152, Red Hook Water Pollution Control Project, Contract 1A, Red Hook Intercepting Sewer, (Fig. 9), the wall of the 102 inch diameter intercepting sewer, which making its curve in Main Street to Plymouth Street in front of the Empire Stores, was planned to come to about 25 feet from the base of the building at its nearest point. The top of the sewer was set at about 12 feet below the street level at the Empire Stores.

In the tunnel line between Water and Plymouth Street on Main Street were two subsurface borings, which I examined in company with city geologists. These are borings numbered 33 and 34 (Fig. 9).

The geological profile (Fig. 10) along the route of the tunnel shows that there is a downward slope of the soil deposits from the southerly end of Main Street north to Plymouth Street toward the East River. The borings on this street line indicate that there are at least four major soil deposits in the history of this shore area, respectively identified in this report as a to d, from top to bottom. The descriptions are as follows:

Layer a - A widespread blanket of recent fill, including sand, gravel, silt, clay, cinders, brick, concrete, boulders, timber, etc. It has an average thickness of about 11 feet, ranging from 7 feet to 16 feet thick. It lies at about an elevation of 11 feet above the ground water table in the southern or landward side to 9 feet below ground water level.

Layer b - This is a deposit of organic silt penetrated and over-

lain by fill. This appears to have been the original land surface dating from the original settler times. This soil horizon includes three lenses of related soils. It is nominally a very soft to soft, gray organic silt, with a trace to some clay, a trace to little sand, and a trace of gravel and a trace of cinders. It has an average thickness of 6 feet ranging from 2 feet to 14 feet thick. This soil horizon overlies a layer of "till" from the landward side, presumably of late glacial age (Wisconsin). It has a slope angle of about 2.5% toward the river. Most of layer b lies well below the ground water table, beginning above ground water table (or about plus 5 feet) at a point just a little north of Howard Alley on Main Street, and slopes downward to the north toward the East River. This layer intrudes into the next layer below it, layer c, which slopes similarly downward to the East River. It is made up of a number of isolated lenses and pockets of soil, giving the layer an undulating characteristic.

Layer c - This is a river sloping thickness of glacial till, including compact to very compact composition of fine to coarse brown sand, a trace to some silt, and a trace to little gravel. Possible boulders are included in the deposit. This layer has a thickness of about 5 feet, to an uncertain depth not plumbed by the present borings in this section. It lies well below the ground water table. This layer has several intrusive soil pockets and lenses.

Layer d - This is the bottommost soil horizon in this section, which is composed of sand ranging from compact to very compact, with medium to fine gray brown to brown sand with a trace to little silt



present. The deposit in this portion of the section is nearly horizontal in bedding. There is a trace of shells and some mica in the deposit. It lies about 25 feet below the ground water table. Its total depth has not been plumbed by the present borings.

The profile section from Main to Pearl Streets on Plymouth indicates a shallow downward slope from the east to the west, or from Pearl Street to Main Street, which in fact appears to conform with the old shore line at this point. The thickness and depths of the deposits appear to be about the same as the dimensions for the deposits between Howard Alley and Plymouth Street on Main Street.

A new set of borings were made at the Empire Stores last year evidently as a check. Three borings were put down on the east side of the building on Main Street, called 83 Water Street, in the report of the Underpinning and Foundation Construction Company on June 13, 1978 (Fig. 11). Boring No. 1 was toward the south end of the building, No. 2 was at about the middle of the building, and No. 3 at the north end. The boring data confirmed the findings of the city geologists. All borings were within inches of the building's side.

According to the record of the borings, there was a downslope of fill from south to north in the section, which followed the downward slope of the river bed at this point. The fill measured about 10 feet thick, as indicated in boring no. 1, sloping downward to a fill depth of about 15 feet in borings nos. 2 and 3. Boring no. 1 had encountered wood at the base of the fill deposit. A bed of fine sandy silt about 5 feet thick was noted below the fill as evidenced in boring no. 1. This bed sloped downward to the north, a slope to which the overlying fill was inferred to be conformably deposited. Below the sandy

silt was evidenced more silt and peat, over which the sandy silt lay. The borings reached a depth of about 40 feet.

#### A Resumé of the Structural Problems of the Empire Stores

A study of the voluminous correspondence concerning the engineering aspects of the Empire Stores with regard to the Main Street tunnel realignment is a highly educational experience. The objective of the action was to have a--"realistic alignment of the tunnel. The proposed realignment offers the advantage of improved hydraulic flow and will result in shorter footage," as innocently stated in a letter dated May 3, 1978, addressed to the Department of Environmental Protection of New York City at 40 Worth Street (Fig. 12).

On May 19th, the Underpinning and Foundation Constructors addressed a communication to Red Hook Constructors, to which they were subcontractors, regarding their investigations at the Coffee Warehouse. The work was performed with the attendance of a New York State archaeologist (Paul Huey), who recorded the excavation work and the findings. The statement notes that "A viewing of the structure from Main Street shows a series of arches for windows and loading bays of which many are severely cracked in a semi-vertical direction. This cracking would indicate that there is settlement of the structure both towards the river and away from the river at about a firm middle." They also indicated that their test pits nos. 1 and 2 showed that the building, at least in that area, was supported on an unstable foundation. They found that the Coffee Warehouse had a thickness of 28 inches at the base, resting on a foundation supported by untreated timber piles which were encased in a cement mortar pile cap 18 inches thick (Fig. 13). They thought it prudent to sink two more test pits, making a total of five pits, in order to be certain of the causes for the problem. These

were done at a later date.

Evidently the building owes its existence to its well constructed heavy timber framework, which is probably holding the building together despite the demerits of its wall foundations.

The Underpinning and Foundation Constructors followed up their work with the additional pits noted (Fig. 14), and reported to the Red Hook Constructors on May 30th the gravity of the situation. Pit No. 4 showed a condition of completely disintegrated wooden piles, while Pit 5 showed evidence of "acceptable wood pile condition." The piles measured about 10 inches in diameter at the top, untreated, and were in fair condition. No mention is made of how many piles were involved. The Underpinning and Foundation Constructors recommended that the New York City Department of Buildings be notified about the unsafe condition of the building, and that the owner of the property, the State Park and Recreation Commission be similarly informed. In order to have a second expert opinion on the situation, it was recommended that John V. Dinan Associates, of Rte Lee, N.J., also sub-contractors to Red Hook Constructors, also investigate the building's condition.

The Department of Buildings in Brooklyn was duly informed the following week concerning the problem, as well as a letter to the Department of Environmental Protection concerning the gravity of the situation, calling for corrective action so as to avoid delay in the excavation of the tunnel.

The New York State Maritime Museum of 171 John Street, New York, the new owners of the Empire Stores, were presented with the bomb shell on June 9th by the Underpinning and Foundation Constructors that a party of six engineers had examined the building on June 5th

and reached the conclusion that the building was unsafe. They proposed to install piles beneath the wall of the building fronting on Main Street. The structure was not included in the contract underpinning item since the building was outside the influence criteria established for underpinning. John V. Dinan Associates, consulting engineers and seismologists indicated in their letter of July 7th to the Red Hook Constructors the nature of their findings regarding both the exterior and interior condition of the Empire Stores. They believed that the condition of the building was so bad that they recommended that "the area in the immediate vicinity of this building should be isolated," and a complete investigation of the structure be made. Also, no construction work should be carried out in its immediate area, and before such work could be carried out, remedial steps be done in order to make the building safe.

On July 13th, the Underpinning and Foundation Constructors addressed a report to the Red Hook Constructors regarding their investigations at the Coffee Warehouse. The report covers their findings in the sinking of five test pits identified as Pits Nos. 1-5, and three soil borings (Fig. 11). Their findings indicated that the untreated timber piles which were the original supports of the Main Street wall of the building had disintegrated completely, and were no longer doing their intended job. As a consequence, the building was gradually transferring its weight into the layer of fill beneath the pile cap. It was this load transfer which was causing the walls of the building to crack, and this condition would continue until the "fill material is incapable of sustaining the load without excessive settlement," and the structure would collapse. The deepest pit, No. 3, was 4.6 feet deep. The front of the building was a 28 inch

thick brick wall resting on a one foot thickness of mortar and stone foundation, which in turn rested on a 1.6 foot thickness of cement and mortar capping on the wood piles. There was a 1.6 foot thickness of rubble and stones around the piles as a kind of collar. The tests were located in the eastern three quarters of the building toward Water Street. There was no test near the river side of the building.

Boring test no. 1 indicated that there was miscellaneous fill between 0 and 10 feet depth. Wood was encountered between 10 and 12 feet. Between 12 and 18 feet the boring encountered fine gray sandy silt. At a depth of 18 to 20½ feet, the boring indicated gray silt, and beneath that to a depth of about 25 feet was a thickness of peat. From a depth of 25 feet to 35 feet, the test boring showed the presence of reddish brown silty to sandy silt. Below 35 feet to the limit of the boring at 42 feet, the test indicated fine brown mica schist sand. Water was encountered at a depth of 10 feet. The boring showed that this area was originally below sea level, which was filled in. The wood present in the boring was probably from ancient piles set in place when lower Main Street east of Water Street served as a dock and an important city ferry point (Catherine Ferry).

Bore hole no. 2 encountered a thickness of 15 feet of miscellaneous fill from the surface, indicating a lower elevation of the shore. Water was met at 7 feet depth in the boring. Bore hole no. 3 encountered 14 feet of fill under a 1 foot thickness of Belgian paving block, with water in the bore hole at 7 feet. A concrete obstruction was encountered between 14 and 15 feet depth. These tests were made between June 13th and 14th.

The New York Maritime Museum of the New York State Park and Recreation Commission was informed on July 19th by the Department of

Ports and Terminals that the warehouse was in building violation, and that they were directed to make remedial repair work. To this letter, the museum replied that the property had been acquired in March, 1978, as a "long-term expansion facility for the State Maritime Museum." The letter of August 9th also declared that funds for any remedial work would have to come from appropriations furnished by the State of New York, and no funds for the purpose were immediately available.

A meeting of engineers was held at 40 Worth Street on August 31st concerning the restriction on the sewer project. Specifically the structural integrity of the Empire Stores had to be re-established before work in the immediate area could begin. It was noted that the unsafe condition of this historic landmark could not have been foreseen either by the city or the contractor. Over a period of some 90 years, the pile support system had rotted out. Luckily, the building is presently unoccupied and unloaded. The piles are absent for approximately one to three feet below the cap. Due to the lack of a pile support system, the building presented a potential hazard. Any construction in the area would probably hasten its eventual collapse, according to the engineers' estimates. It was essential that the condition be eliminated before any construction could continue in this area.

In a communication dated Sept. 18, 1978, the State Parks and Recreation Commission for the City of New York addressed to the Red Hook Constructors issued a permit for the contractors to make temporary use of and remedial foundation repairs to 83 Water Street, a portion of the Empire-Fulton Ferry State Park (A property of the National Register of Historic Places and a New York City Landmark). In this communication, item no. 7 specifically indicates that an archaeologist

be present during the course of the work, as follows: " All work on the fabric of the building and excavations within and beneath the building as well as excavations in the adjacent site shall only be accomplished in the presence of an archaeologist approved by the federal government.

Specifically, as this property is on the National Register of Historic Places, no digging shall be permitted without the assistance of an archaeologist who records and preserve any artifacts that may be uncovered and detail the soil layering. Failure to adhere to this requirement will void this permit and may jeopardize federal aid to the overall project."

A letter dated Sept. 22, 1978 from Woodward-Clyde, Consultants to the Red Hook Constructors recommended that the timber piles of the warehouse at Main Street be cut down to a level where they are in good condition, and that the deteriorated sections be replaced with concrete-filled pipes. It was estimated that there would be ground settlement of up to 1.5 inches due to dewatering, but that after the piles were repaired, it was judged unlikely that a ground settlement of that order, or less, would have any detrimental effects on the warehouse.

Mason and Hanger sent a letter to Sudhir Parekh at 40 Worth Street dated October 23, 1978, in which it was indicated that the engineering plans and specifications included the presence of an archaeologist in accordance with federal and state requirements. It was noted in the same document that "During the course of building examinations required under Detailed Specifications D-18.5 and as a result of foundation investigation, the results of showed that the building was unsafe and hazardous."

Mason and Hanger followed up this communication with another letter dated October 31. It was noted that as part of the project a 10 foot diameter tunnel was required to be dug parallel to the warehouse on Main Street, and that some open cuts were required to be made in the street. A re-alignment of the tunnel at the 100-foot radius curves Nos. 10 and 11 at Main Street was requested (Fig. 12). The new alignment did not bring the tunnel any closer to the Empire Stores warehouse than the original contract. However, due to the poor conditions of the foundations of the building, immediate action was undertaken to secure the building so that tunneling operations could continue avoiding major delays of the project.

The Red Hook Constructors were informed in a letter from the First Deputy Commissioner from 40 Worth Street dated Nov. 13, 1978, that a change order was being prepared by the Department to do the remedial work on the Empire Stores building prior to the construction of the tunnel and related works. The Red Hook Constructors had to receive prior approval for all work from the New York City Ports and Terminals, the New York State Parks and Recreation Commission, and the New York City Department of Environmental Resources.

The site plan prepared by Woodward-Clyde Consultants (Fig. 12) of the sewer project identifies the Empire Stores warehouse or Coffee House on Main Street as Nos. 2-14 Main Street. It should be observed that No. 83 Water Street, which is erroneously entered in nearly all of the official correspondence as the Empire Stores of Main Street, is actually part of the 4 story Empire Stores facing on Water Street.



### Work of the Constructors at the Empire Stores

The work of the Underpinning and Foundation corporation, which did all of the underpinning work on the Empire Stores, may be divided into five stages in this report. The first stage includes the excavation of three exploratory test pits in front of the building from May 8th to May 10th, 1978, during which Mr. Huey was in attendance. The second stage was a week of testing and exploration in the same pits between September 7th and September 13th. No archaeologist was in attendance during that period. The third stage was a week of testing and excavation inside the warehouse between October 24 to October 31. Mr. Alterman was in attendance as archaeologist during this period. There was a two week pause after this date until November 13, when full scale excavation commenced in the Main Street frontal area of the Empire Stores. Advantage was taken of the work in the pits already opened, and these were incorporated into the general plan of excavation. Archaeologists Alterman and Donadeo joined the work under my supervision two days later on November 15. This fourth stage terminated at least for the archaeological work on December 13, when it was observed that no more field work could be done at the Empire Stores. The sides of the pits were solidly sheathed in wood, and the bases of the pits were laid down with gravel. For the purposes of this report, the fifth stage is the work at the Empire Stores following the departure of the archaeologists. The workmen finished welding the supports and fixing the trusses during this interval. After they had finished their work, the dewatering operations ceased, and the water level rose in the pits to find their level of approximate sea level (Plates 11, 12).

The period of activity at the Empire Stores from the inception of the work in May to December 13 when the archaeologists left made a total of about 7 weeks.

The Underpinning and Foundation corporation had a day and night shift on the job. The day shift started at 8 A.M., and quit at 4 P.M., followed by the night shift until midnight. Including the archaeologist, each shift had approximately 11 to 13 men on the

job. A sample daily report from the company, Report No. 150A-21, Night Shift, for November 20, 1978 (Fig.15), indicates that there were 2 superintendents, 1 dockbuilder foreman, 2 dockbuilders, 1 pump mechanic, 1 welder, 1 laborer foreman, 4 laborers, and 1 archaeologist. The supervisors on the shifts were Ralph Capelli, Vincenzo Carbonara, and Edward Ribachonek. They filed daily reports on both day and night shifts. Excerpts from their reports, which have been useful in compiling information on the excavation, are given below.

The work involved the excavation of an area about 650 square feet in front of the building, and at least another 650 square feet under the front end or the footing of the building, making at least 1,300 square feet (the length of the building on Main Street is 130 feet, and the width of the cuts are 5 feet in the front of the building). The 5x5 feet pits in front of the warehouse were excavated down to a depth of about 8 feet below street level. They were dug in alternating sequence. The building foundation was undercut to expose the timbers supporting the foundation after the initial excavations in the front of the building were made. There were 26 pits in all along the face of the warehouse. The pit numbers were painted along the face of the building for reference. The pit locations were numbered from south to north, from 1 to 26 ( Fig.14). The test excavations made by the constructors earlier in May, Nos. 1 to 5 in the sequence ( Fig. 14), were located at the new designations in the 1 to 26 number sequence as follows:

<u>Old Pit Numbers</u>	<u>New Pit Numbers</u>
1	1
2	6
3	12
4	8
5	17

The old Nos. 1 to 5 pits were reopened and work continued in them during September and November-December. The archaeological record indicates there was minimal archaeological material recovered from these reworked or deepened pit holes during full scale operations in November-December. They had already been partially dug out by November 13, when the work full scale on all of the pits commenced. Pits 1, 6, 12, 8 and 17 (old designations 1,2,3,4, and 5) were finished earliest, by Nov. 27th. A cut was made in the middle of Main Street in the location of MH-5 (Fig.12).

According to the information detailed on the blue print drawn up by the Underpinning and Foundation Constructors, Inc. of Maspeth, New York, Drawing No. 150A-1, "Support of East Wall at 83 Water Street," drawn Sept. 18, 1978, the Procedures for Maintenance and the Materials used as detailed on the drawing are as follows (Fig. 16).

#### Procedures for Maintenance

1. Excavate a series of pits to expose foundation condition, etc.  
Max. 4 pits/building open at any time.
2. Dewater as necessary to perform Sept # 1.
3. Remove whatever existing foundation elements are no longer functional.
4. Remove deteriorated piles to good wood.
5. Remove the portions of existing footing which are no longer required for this support system.
6. Where piles are deteriorated, the excavated pit may be 3 piles wide (5'±) and extend to the depth required to expose the 2nd row of piles.
7. Where the piles are deteriorated within the socket only, the excavated pit shall be only 2 piles side (3'±) and extend to the depth required to expose the 2nd row.
8. Install the scheduled work.
9. Stress each pits work to the loading of 25<sup>k</sup>/L.F. prior to opening the adjacent pit. Wedge load into posts.
10. Monitor the structure and adjust the loading as necessary during the balance of this installation.
11. Monitor the structure and adjust as necessary during the performing of the adjacent work.
12. At the conclusion of the work, permanently weld the posts to the jacking beams (top and bottom).
13. Encase the support assembly entirely in light weight concrete at the conclusion of the work.
14. Backfill all approach pits with sand (Bank-Run S & Gr).

### Materials

1. All steel A36 (Beams, Plates and Posts).
2. All anchor bolts- USM Parabolts.
3. Drypack to be -- 1 sand, 1 cement moist rammed into place.
4. Concrete- 2,500 f' (light weight).
5. All lumber to be construction grade, minimum 2" thick.  
All lumber remaining in place to be treated material.
6. All pipe to be ASTM-A252, Grade 2.
7. All welding to be E70XX."

This ends the Procedures for Maintenance. The detail of the work is illustrated in Fig.16.

The following is excerpted from the supervisor's daily reports on the work at the Empire Stores. During the September 7 operations, Mr. Carbonara noted that dewatering was required in the excavation of test pit 3 to expose the wood piles, and a number of 3 inch pumps were used in the process. One wood pile was load tested the next day, and test pit 1 was excavated to expose the wood piles. They had to halt the excavation in test pit 4 because of timbers buried in the ground. They found that heavy timbers were buried in the fill in the excavation of test pit 3 as well. On September 12 they excavated in test pit 3 to expose the wood piles below the water level, and load tested the wood piles.

The constructors excavated two test pits in the interior of the building on October 24th next to the interior stone wall. They went down to 4 feet below floor level, and continued the excavations to the bottom of the foundation in one pit, and one foot below the foundation in the second pit. Dewatering was found necessary to continue the excavation. Dewatering continued, they made the excavation at the stone wall to three feet below the bottom of the foundation. On the last day of the work in the interior, they excavated the two

test pits under the foundation and found the wood piles. There was no mention as to whether they were good or not.

On November 13, the constructors used the new pit numbers (1-26) for the identification of the pits. They began by excavating for the support work in pits 1 and 8 (old no. 4). They continued this work on the 14th, and on the 15th, when the archaeologists were in attendance, they excavated for support work in three pits, numbers 1 (old no. 1), 8 (old no. 4) and 17 (old no. 5). They did rehabilitation and support work, including the setting of 12 inch sleeves on the piles, setting and welding W6x25's to the 12 inch sleeves, setting and welding W6x12 between the W6x25's in pit 8. On November 16, they excavated in pits 17 (old no. 5) and 12 (old no. 3). The same day they completed the setting of a steel fram and applied the load of 25 KLF at pit 8, among other operations.

The work went apace during both day and night shifts. On November 17, the work crew maintained the load on the piles in pit 1, and continued the excavation of the approach section in pit 6. They also continued the excavation and the removal of timber cribbing in pit 12. On November 20 they continued work in pit 1 and in pit 6 (old pit 2) they continued the excavation to expose the wood piles. Similarly, they exposed the wood piles in pit 12. The approach pit to no. 26 was started. The load test of 25 KLF was started in pit 17.

The day shift on November 21 experienced snow flurries. They began the excavation of the approach in pit 2 and 18 and continued the excavation of the approach pit in pit 26. The night shift the same day had clear weather and freezing. They continued the work of the day shift on the excavation of the approach pit in pit 2 and continued the excavation of the approach pit in pit 26. They

also grouted HP 10x57 in pit 6, and installed HP 10x57 and grouted in pit 12.

Work was finished in pits 1,2,6,7,8,12,17, 18 and 26 on November 27. The work continued routinely until the whole front of the Empire Stores on Main Street was exposed in one complete excavation. (Plates 13,14,15).

The cobble stones removed from the street excavation were housed in the interior of the Empire Stores for safe keeping. It was not ascertained when we left the area what was to be done with the cobble stones, but it was assumed that they would be replaced after the excavation hole was filled in. Since the soil from the excavation and the timber ends were removed from the work in a dumpster, new earth fill would have to be found to take the place of the original material. Where this earth fill was to come from was not learned. However, the addition of this new fill material will add still another complication to the already complicated stratigraphy of Main Street. Although the general requirements for fill are that it be "clean", evidently no such guarantee can be given that the fill is indeed pristine.

The underpinning of just one wall ( one of the smallest in the building) was a very costly proposition for the project. If the original intention of the New York Maritime Museum in reclaiming the Empire Stores be followed through, it must be assumed that for safety's sake, the whole exterior would have to be treated the same way, a mammoth undertaking. Undoubtedly some consideration would also have to be given to the interior walls. However, all this is beyond the range of the present report.

Parks and Recreation Commission Archaeological Findings.

Coincident with the exploration tests made at the front of the Empire Stores by the Underpinning and Foundation Constructors, a New York State Parks and Recreation archaeologist, Paul Huey, was directed to be present to represent the interests of the latter organization in the work. Three test pits were dug (Fig.14), the work commencing on May 8, 1978, and finishing on May 10th. The pits were excavated to a depth of about 5½-6 feet, revealing that the soil was composed of landfill. This fill included fragments of glassware and ceramics, some of it dating back possibly to the late 18th century and early 19th century as identified by Mr. Huey. Of importance to the sewer construction work and to the possible re-use of the building as a museum, was the information that the structure was in a highly unstable condition resulting from the rotting away of the pile supports under the building to about as much as 3 feet.

Paul Huey wrote a memorandum on May 12th to Mr. Edward Lynch from which the following data concerning his observations is summarized. He observed that in my report on the archaeology of Contract 1 A in this area that I had noted that since the sewer project was going to tunnel through Main Street, no effect on the archaeological resources of this area was going to be made. However, since tests were scheduled to be made near a historic landmark, namely the Empire Stores, the presence of an archaeologist would be needed since artifacts, etc., might be found in the landfill.

The stratigraphy in the tests and the artifacts could well represent the data obtained from the rest of the pits made later on in the season and checked by the two graduate students, Mr. Alterman and Miss Donadeo, we had employed for the job.

The test pits were numbered 1, 2, and 3, from south to north along the face of the Empire Stores on Main Street. Test pit no. 1 was 5 feet (N-S) by 4 feet (E-W). The workmen excavated to a depth of 5.6 feet. This work had commenced before the archaeologist arrived. Recovered were pottery sherds as well as glassware fragments from the late 18th and 19th centuries. The pottery included a fragment of a delicate enamelled hand decorated pearlware saucer of English origin from about 1790 to 1810. Other sherds included Chinese porcelain as well as a fragment of Staffordshire blue transfer-printed saucer which Mr. Huey thinks may predate 1835.

Few artifactual remains were found in the other two test pits. From test pit no. 2 ( Fig.17) was recovered some red brick fragments, plaster and lime mortar, as well as some bottle fragments, and a piece of porcelain. From test pit no. 3 (Fig. 18) were recovered only a few artifacts, including some leather scrap, and at least one small creamware (?) sherd, as well as a large number of small red brick chips. Both clam and oyster shells were found in some quantity in this pit. Water seeped in at about 6 inches above sea level in the pit, which is about 4 feet below the street surface at pit no. 3. Water seeped into the excavation of pit no. 1 at a depth of about  $4\frac{1}{2}$  feet from street elevation at the southern end of the Coffee Warehouse. The work uncovered a heavy squared timber lying in an east-west direction in test pit no. 3, extending westward under the Empire Stores. On the north side of the timber was found some wood planking (?). The wood appeared to be in mint condition, and of resinous pine. It apparently long predated the construction of the building. It was supposed that it might have been part of cribbing used in making land fill, part of a dock, or even part of an abandoned boat. There was no mention of cobble stones



which generally are associated with cribbing construction.

The archaeological work served to support the documented reports that the Empire Stores was built on landfill which must have been laid down sometime in the early 19th century at least. The fill included artifacts of glassware and pottery fragments of the late 18th century, which was probably incorporated in the landfill, derived presumably from the near vicinity. There are reports that hillocks in the Brooklyn Heights area were leveled as early as 1820 in the real estate boom of the period.

Ground water level was encountered beginning at about 4 feet below the Belgian block street surface. This ground water level, dependent upon the sea level of about the same elevation, fluctuated in height. It was presumably this fluctuation, accentuated by the phenomena of "dewatering" on occasion for building construction, which must have adversely affected to a serious degree the preservation of the wood pilings at the contact with the footing of the warehouse (Plate 16). The three tests showed that in every case the pilings were rotten. Thus, in test pit no. 1, the rotted stubs of the piles were found 3 feet below the original position of the tops of the piles. The foundation wall of the building was imprinted with the cast of the piles in the cement. The buried stubs of the piles were found to be soft, brown colored and rotten. The "ghost" imprints of the original piles were found in the cement of the foundation bases of the building in test pits nos. 2 and 3 as in test pit no. 1. Similarly, the rotted piles were found in the excavations some 3 feet below their original support emplacement. It became evident that the previous occupants of the building some time in the past were cognizant of the foundation support problem. The excavators found at least one attempt to stabilize

the sagging building wall. A trench had been dug almost 2 feet out from the wall, and into this trench was a fill of concrete and rocks to a depth of about 4 feet. The soft rottened ends of the wood piling was found below the concrete bulwark. The wood piling had not completely rotted out when the concrete had been poured. Since concrete was a relatively recent invention, dating from the 1900's, this work had to be done in the 20th century. Structural cracks were clearly visible in the east wall. Attempts to repoint and repair this structural damage is clearly seen. The wall, according to Mr. Huey, appears to be sinking at both ends of the building on Main Street.

All three test pits contained layered soil composed of "reddish to yellow-brown sand" according to Mr. Huey. This soil was generally clean and contained relatively few artifacts. He suggests that the fragments of mortar and brick found in the pits might represent the remains of previous structures on the Empire Stores site. Alternatively, the brick fragments might represent building debris from elsewhere in the area.

A deposit of "dark gray-brown sand" lay under the "reddish and yellow-brown sand" layers in test pits nos. 1 and 3. The former layer occurred at a depth of about 6 feet. It is thought that this horizon was not encountered in test pit no. 2 because it was not dug deep enough. The incoming ground water at high tide prevented reaching the 6 foot depth in test pit no. 2 the day it was dug. Cross-section diagrams (Figs. 17,18) were drawn of test pits nos. 2 and 3. These test pits yielded less artifacts than test pit no. 1. Several broken bottles, one marked PHILADELPHIA XXX PORTER ALE, were found in the pit stratigraphy.

The earliest material which was identified from the test pits carried back to about 1790. This would indicate that deposition of the landfill occurred some time after that date. The findings of Joan Geismar of Columbia University on the material she had examined from the pits later excavated during our operations corroborates Mr. Huey's findings. He closed his memorandum with the recommendation that additional excavations should not be conducted in the area without the presence of archaeologists to record artifacts and stratigraphy.

The following is a summary of the stratigraphy in each of the three test pits, nos. 1, 2 and 3, from Mr. Huey's notes.

Test pit no. 1-

By the time Mr. Huey had arrived in the early afternoon of May 8th, the men had already excavated down to 52 inches depth. He searched the back dirt for artifacts. The stratigraphy in the pit wall was composed of thin alternating layers of "red sand, yellow sand, and dark brown organic material." The street surface was about  $4\frac{1}{2}$  feet above sea level, or ground water level. He collected artifacts noted above from this pit. At a depth of 52 inches below the surface he noted "brown-yellow sand." Above this, at about 48 inches depth, was a lens of "reddish sand", extending to the wall. This layer was about 3 inches thick. Above it was a "brown sandy layer." Wood sheathing obscured additional observations. At the east side of the pit, where the sidewalk level was 2 inches higher, the "red sand" began at about 52 inches depth, and the "yellow sand" began at about 54 inches deep. Water began to seep into the pit at about the 52-65 inches depth. The soil at the ca. 5 foot depth was composed of wet sand with few artifacts. The soil was gray in color, with several brick chips

as well as some pottery sherds. A band of "yellowish sand" measuring about 9 inches thick was encountered below the 52 inches depth, lying over a layer of "dark gray sand" down to a depth of 65 inches. From there was encountered a "dark brown coarse sandy fill" with pieces of wood, brick chips, and oyster shell fragments, etc. The color of the soil was noted as a "dark gray-brown color."

Test pit no. 2-(Fig.17)-

This pit measuring 4 feet by 5 feet, was excavated 25 feet north of the alley to the south, at the wall of the building. At the surface, the Belgian paving blocks were found to be bedded in "clean dark tan sand." The "tan sand" stopped at a depth of 8 inches, where a layer of coal, coal cinders, and coal ash measuring about 3 inches thick was found. Beneath this was a layer of "brown sand" containing brick fragments, plaster, and lime mortar. At a distance of 21 inches from the building wall, it was noted that the "brown sand" changed to a dark brown sand" beneath the coal layer. This "dark brown sand" had most of the lime mortar in it. Mr. Huey identified five major soil horizons, noted at Levels I to V.

These identifications were given as follows in his notes:

Level I- "tan sand" and Belgian blocks.

Level II- Coal and coal ash.

Level III- "brown-yellow sand".

Level IV- "light yellow-brown sand."

Level V- "red sand" deposit.

Digging had to stop at about 4 feet 3 inches depth below the street surface because the pit filled with ground water at that depth.

Mr. Huey noted some intrusions in the various levels. He identified these as follows:

Intrusion IIa- a "dark brown sand," containing bottle fragments.

Intrusion IIb- "gray brown sandy silty," intruding into Level III.

Intrusion III- coal ash feature in the south profile.

Level V contains rubble and a poured cement wall. A piece of porcelain was found next to the wall. The tops of rotted piles were found at 5 feet 4 inches below the surface. The pile tops were originally about 2 feet below the surface, indicating that about 3 feet of pile tops had been rotted away. The excavation in test pit no. 2 reached 53 inches depth, with a deeper sump hole.

Test pit no. 3 (Fig. 18)-

This pit measured 4 feet by 5 feet 6 inches, situated 55 feet south of the south wall of the Empire Stores on line with the other two test pits at the front of the warehouse. A layer of 9 inches of black dirt was uncovered over the Belgian paving block stones. Six levels, identified as Levels I-VI were found in the excavation. The contents of these levels are summarized as follows:

Level I- a "tan sand" layer lying just below the Belgian blocks measuring about 1 inch thick, lying between ca. 11 to 13 inches below the ground surface.

Level II- a "reddish brown sand", with a "somewhat coarse and gravelly texture," starting at 13 inches below the ground surface, and 8½ inches below the top of the Belgian block pavement.

Level III- "grayish-brown gravelly sand" marking a soil change at about 23 inches below the surface paving in the south profile. A thin layer of broken crushed "reddish-purple sandstone" fragments were noted above Level III. A few artifacts were found in this level,

particularly below a concentration of gravel in a lens, identified as Level IIIa. In the excavation it was noted that the wall trench for the poured cement wall began below the tan sand of Level I.

Level IV- a "medium brown sand."

Level V- a "reddish sand" at a depth of 46 inches from the surface. Contained small bits of shell, but generally culturally sterile.

Level VI- a "dark gray sand" layer touched at 56 inches depth in a sump hole. This level was full of small red brick chips, as well as some leather scrap fragments, and at least one small creamware (?) sherd. It also included many shell fragments of clam and oyster shells. It appeared to be the same layer that was reached at the bottom of test pit no. 1. The soil is hard packed, and contained some wood splinters, which apparently came from a solidly embedded piece of large old piling. Flat wood planking was found next to it in good preservation. There was a large boat spike embedded in the heavier wood. The beam measured 6 inches in width at a depth of 62 inches from the surface of the pit. It was found 2 feet from the south side of the pit. Mr. Huey surmised that the wood beam could have been derived from either dock work, a crib, or possibly from a boat. The iron spike was pulled out of the beam and saved. It was noted that the rotted out imprints of the 1885 (sic) pilings were positioned on each side of the squared wood beam beneath the poured cement. The wood in the north side of the pit prevented searching for a third pile. The squared wood beam and the wood planking were found in excellent state of preservation. On the other hand, the pilings of the 1885 building were rotted away. It was thought that the wood in the pilings may have been different from the wood of the beam, which Mr. Huey thought looked like a resinous wood.

Mr. Huey made no mention of the disposition of the artifacts, but it is assumed that they were taken with him to Albany and eventually to the museum. No mention is made of the other two test pits, nos. 4 and 5, which are referenced in the Underpinning and Foundation Constructors letter of July 13, 1978.

Summary of the Main Archaeological Investigations at the Empire Stores

The field archaeologists Alterman and Donadeo observed the construction work in progress, specifically the excavation of the pits. Archaeological control in the retrieval of any artifacts was not the best under the conditions of the field situation. The earth in the pits was removed with shovels and placed in portable metal buckets with handles, which were hoisted by hand to the street surface. From there, a workman dumped the soil into a wheel barrow. The archaeologist troweled through the material as it came up, noting the proveniences and the depth of artifacts recovered for the record. Each specimen was sacked in a labeled plastic bag and set aside in the warehouse for later pickup. Since two pits and sometimes three were excavated at one time not in adjacent squares, it meant that the archaeologist had to move frequently from pit to pit in order to make the collections and observations. There was not too much time for painstaking hand tool excavation or the taking of complete and detailed notes as in a normal archaeological excavation because the conditions of the construction work inhibited such procedure (Plates 17,18). The archaeologists had to conform their activities to the constructor's schedule. The work space in the 5 foot square pits was very cramped, and the light was dim, at best, even in the day time. At night the work was done by caged bulbs. After it became inconvenient to throw the dirt directly into the wheelbarrow, it was put into the bucket

and hauled up to the top by a windlass. The dirt was wheeled to a dumpster drawn up at the side of the street(Plate 9).

The artifacts were found under the building and in front of the building in the pits. The artifacts under the building would certainly, we supposed, date the building. Moreover, they would have to be pre-1885, the date of the construction of the building at least. We could not be sure of the probable dates of the material in front of the building because of possible intrusions, etc.

Adding to the complexity of archaeological retrieval, the sides of the pits were shored up almost as soon as they were exposed with lagging, heavy 3x10 inch beams laid horizontally in the pit sides to keep the dirt from caving in on the work. Such care was needed especially in the levels below the water table. Excavation proceeded in steps. After enough room was excavated to permit a beam to be inserted, this was done, and then the floor of the pit was carried on down farther. The ground water table was equal to about the sea level, and the water in the pits, which was reached at a depth of about  $4\frac{1}{2}$  feet, hampered the excavation. It also made the recovery of artifacts that much more difficult as well. Sump holes were dug in the pits, and the water was pumped out with the use of the gasoline powered pumps.

In the general stratigraphy, there is 3 to 4 feet of soil overburden, including what Miss Donadeo calls "clayey loam-orange sand" to water level. Below this is what she calls "clayey grey sand" to the bottom of the pits. The soil type varies from pit to pit, but generally it is the same and predictable.

Mr. Huey's descriptions of the soil stratigraphy are used as



an example in this report, since what he encountered was essentially what both Miss Donadeo and Mr. Alterman found.

The weather at the time of the year that the work was done, from the late fall into the winter months, made for some disagreeable work conditions on some days because of the cold. Fortunately, the workmen kept a fire going in a fifty gallon drum nearby, burning scrap timber, which offered some relief to cold hands.

Both Alterman and Donadeo were equipped with 5 by 8 inch data cards (Fig.19), on which they entered their observations, measurements, etc. for each cut as work proceeded in the several pits. There were a total of 112 such data cards written up, 56 by Mr. Alterman, and 56 by Miss Donadeo (from 61 to 117 inclusive). On the data cards were recorded the pit number, the date, the depth of the excavation or the excavation spit, or any other qualifying information, the conditions of the deposit, and the various finds which were associated with the particular spit or occurrence. Each of the finds was given the catalog identification number, and packed in bags for future reference. There were a total of 1295 artifactual specimens.

The artifacts were taken to the New York Maritime Museum on John Street on December 14th, where Miss Donadeo and Mr. Alterman worked on them, cleaning, cataloging and doing some researches on them. They finished their work on January 15. Miss Donadeo worked for a period of 36 days, and Mr. Alterman a period of 40 days. This was longer than anticipated in the original estimates.

Miss Donadeo's report and her catalog are appended to this report as Appendices 4 to 6. Mr. Alterman's report, his original catalog, and ~~cur~~ revised catalog plus his interpretations are included here as Appendices 1 to 3.

Since neither Miss Donadeo nor Mr. Alterman were expert in the identification of 19th century artifacts which comprised the bulk of the Empire Stores specimens, this task was assigned to Mrs. Joan Geismar. Her doctoral dissertation at Columbia University will bear on the same period. She spent over four weeks researching the archaeological materials, mostly on the analysis of the ceramics and the bottles, which give the key chronological clues to the deposits at the warehouse. Her findings are given in Appendix 7 and summarized below.

Of incidental although important note, the reports by Miss Donadeo, Mr. Alterman, and Mrs. Geismar contain some errors concerning the history of the building of the Empire Stores. These errors were not corrected in their reports, since the more correct information ( or as correct as can be ascertained) is embodied in my summary.

I had requested that two sieves or screens be constructed for the screening of the soil from the pits. There was some delay in the manufacture of these screens, of which one had a  $\frac{1}{4}$  inch mesh, and the other a  $\frac{1}{2}$  inch mesh. When finally obtained toward the end of the archaeological work, they were set up next to the river bank on Plymouth Street, where dump loads of soil were washed with a hose ( Plate 19 ). According to Miss Donadeo's observations, it was found that screening did not yield significantly more finds than without the screen. The major difference appeared to be in the increased number of very small fragments of bricks, but even in this case, the numbers were not significantly large.

I first visited the work on October 24 to inspect the

excavations in the interior of the Coffee Warehouse, which was familiar to me from my previous site survey. I paid subsequent visits to see the work in progress and to confer with the archaeologists. I noted that the Belgian blocks which had been removed from in front of the warehouse had been stored inside the building. I took a number of flash photographs of the building's interior and of the opened pits(Plates 20-23 ). I was able to go down into one of the pits on November 21 to observe the work on the piles. I noted that the piles indeed had rotted away from the basal foundation of the building, leaving a cavity impress of the pile imprint in the cement(Plates 12,16). I saw how the workmen cut away the rotted two to three feet of piling, leaving a stump in the ground. They replaced the missing portion with an iron collar, which was filled with concrete to take the place of the rotted piling. There was very little opportunity to see the stratigraphy as a section because the sides were shored up almost as soon as they were excavated in order to prevent pit collapse. As noted elsewhere, the ground water level was only about  $4\frac{1}{2}$  feet below the ground surface(Plate 11).

The trenches or test pits inside the warehouse which the constructors made on October 23 and 24 are numbered 1 to 4 in this report (Fig. 14). They measured about 5x5 feet. The work in these trenches is described by Mr. Alterman in his report(Figs.20,21; Appendix 1). They were dug down to about the ground water level. Several interesting structural findings predating the construction of the 1885 Empire Stores were made in the trenches.

In Trench 1 was found the remains of a brick wall and an arch (Fig. 20), the top of which was encountered 1.3 feet below the warehouse floor level. The arch was filled with ashes. It was thought that this was perhaps part of an oven or a stove, and presumably belonged to an earlier building which may have been destroyed by fire. Of interest also were the evidences in Trench 4 of a fire about 2.3 feet depth below the floor level (Plates 22, 23). The evidence consisted of burned floor boards in situ. This may be tied in with the fire traces in Trench 1.

With the exception of some coarse ceramics, there was a marked paucity of artifactual remains below the floor boards in Trench 4. These burned boards were just about 3 feet above "0" datum level, suggesting that there were at least two stages of land fill (1) an initial fill bringing the level up to the height of the floor boards of the earlier construction at ca. 3 feet above "0" datum and (2) a subsequent land fill bringing the level up to the present elevation of ca.  $4\frac{1}{2}$  feet above "0" datum. This would indicate that there was at least about  $1\frac{1}{2}$  feet of new added fill if we read the evidence correctly. Of course we do not know, because of the limited testing, if this was a widespread blanket of new fill, or just singular occurrence. However, considering the history of the Empire Stores, I think that we are correct in surmising that there was a new landfill to serve as the base for the 1885 Empire Stores construction.

Mr. Alterman noted that he had found that excavation had already been made in four pits at the Main Street side of the Empire Stores as preliminary tests when he arrived to work.

These were numbered 1,8,12 and 17 in the new sequence of 26 pits. Each of the pits had been shored up with lagging and therefore no stratigraphic observations could be made in them. They had been dug down to below water level according to Mr. Alterman, and were being ~~pumped~~ out on November 15.

Mr. Alterman confirmed the presence of heavy wood timbers about 12 inches square in the base of pit 12 (old pit 3 of Huey, Fig. 22). These timbers, which were called "cribbing" by the constructors, were called "rails" by Alterman, presumably supports for the pile driving for the 1885 warehouse. They were encountered about half a foot below the ground water level ("O" datum). The same timbers appeared in pit 13 about 1½ feet below "O" datum. Similarly, Mr. Alterman observed that heavy timbers were found in pits 20 and 21 at about "O" datum, or with  $\pm$  1½ of that level. Timbers were also found in Man Hole 5 in Main Street at about the "O" datum depth (Fig. 23). Buried timbers were excavated in pit 8 (old pit 4), pit 16 and 22 as well, indicating that there was much activity at about the ground water level. Manifestly the construction could not have been part of a pier works, assuming that the sea level was not much different than that today, although it could have been as much as a foot lower. The placement of these timbers would indicate that Main Street was certainly filled in by this time, and the Catherine Street ferry would have been removed from its original location at Water and Main to a new location down the street, presumably at Main and Plymouth.

### Summary Description of Finds by Pits

Finds have been recovered from all test pits except No. 20, of which there appears to be no artifact record. As noted above, 1,295 specimens have been recovered, exclusive of the items which Mr. Huey found and of which no record has been obtained. Test pits 3,4,19,23 and 26 appeared to yield an especially heavy record of finds. There was evidenced a major disturbance from test pits 11 to 26, with the inclusion of many modern artifacts like pull tabs from metal drink cans, etc., mixed in with the older specimens. Test pits 1,6, and 12 were numbered 1,2 and 3 in Mr. Huey's records. The data we obtained from them are new information derived from deeper and more expanded excavation in the same pits.

Pit 1- this was the first pit excavated. No artifacts are recorded.

Pit 2- large blocks were found at the base of the pit. A piece of brick was found at a depth of 3.4 feet under the building, and at 2.5 feet under the building were found a couple pieces of brick, 13 pieces of oyster shells, 2 pieces of ceramics and a glass sherd. At "0" datum was found glass, bone fragments, shoe sole, oyster shells and brick fragments as well as ceramic sherds.

Pit 3- this excavation yielded a mixture of modern materials as well as older artifacts. Between a depth of 3.5 to 0 feet were found a Champion spark plug, an iron bolt, a drain pipe, animal bones, glass, cow teeth and ceramics. Under the cement footing of the building were found leather, ceramics, bones, glass sherds and bailing wire. There were many glass fragments from whole or almost whole bottles associated with the footing of the building at about depth - 3.5 feet. The stratigraphy of this pit is recorded in Fig. 24. Just below the Belgian blocks were a couple large flate granite slabs. There was a layer of "orange clayey sandfill" to a few inches over the "0"

datum. Below this was a soil composed of a "grey clayey sandfill with orange mottling". A layer of what was identified as "wood flakes (peat)" was encountered at a depth of -3.0 feet, or about 7.5 feet below the street surface. The excavation was about 8.0 feet deep.

Pit 4- from a depth of 0.5 to -3.0 feet in front of the building were found oyster shells, ceramic sherds, a brass tube, bones and glass (Fig. 25). In the top quarter of the stratigraphy was an ash lense which contained no artifacts.

Pit 5- There was an ash lense under the cobble stones in the top quarter of the excavation (Fig. 26). This ash lense was evidently a continuation of the ash lense in Pit 4. No artifacts were found in this pit according to the record.

Pit 6- reopened Nov. 17 at a depth of -3 feet under the building. This pit was Mr. Huey's pit no. 2 (Fig. 17). Artifacts were found under the building. Large angular blocks of stone were uncovered below the building proper. Pieces of bricks, glass, oyster shells, ceramics were recovered at a 2.5 feet under the building. Bricks were found at 3.4 feet under the building. At "0" datum was found glass, bone, leather, oyster shells, brick fragments and ceramics under the building. No artifacts were found in front of the building.

Pit 7- from a depth of -1.0 to -3.0 feet under the building were found ceramic sherds, brick, and oyster shells.

Pit 8- this was "old" pit 4. There was no archaeological record of finds from this pit.

Pit 9- at "0" datum under the building was found bone, shell, a beer can and a ceramic sherd. At a depth of -3.5 feet under the building was found an animal jawbone and some ceramics. Fig. 27 illustrates the characteristics of a soil intrusion in the north face of the

pit.

Pit 10- no artifacts were recorded under the building, and none in front.

Pit 11- modern artifacts were found under the cobble stones in this pit. We saved three sections of pilings from the excavation. The modern artifacts included the pull top of a metal soda can and beer bottle fragments. Under the building at a depth of 3 feet were found artifacts of iron, brick, glass, a shoe sole and oyster shells.

Pit 12- this was Mr. Huey's pit 3 (Figs. 18, 22). The first figure was drawn by Mr. Huey, and the second by Mr. Alterman. Artifacts were recovered in front of and under the building. Square horizontal lying beams were found from a depth of 58 inches from the street surface. One section was saved from a depth of -3.8 feet. At depths of -3.0 to -3.8 feet were recovered iron horseshoes, pieces of leather, ceramic sherds, a bottle neck and oyster shells. At a depth of -1.8 to 2.3 feet at the west side of the wall behind the pilings were recovered a ceramic jar, a piece of ceramic plate, two leather shoe soles, a fish bone and two oyster shells among other things. The wood beams were evidently the ones which Mr. Huey had observed. They are of an unknown purpose, although they appear to have been related to other heavy wooden beams found in the cuts at about the same depth (ca. ground water or sea level, "0" datum).

Pit 13- nothing of significance was noted from this pit.

Pit 14- at -2.0 feet under the building were found a ceramic sherd and a leather shoe sole. From a depth of 3.0 to 0 feet under the building were found some brick fragments, ceramic sherds and one piece of leather.

Pit 15- aside from a ceramic sherd at -1.0 feet in front of the



building, there was nothing of significance from this pit.

Pit 16-this pit was mostly sterile. There was a log lying in a horizontal position half a foot above "O" datum running in a N-S direction. One end was rotted. This log probably was part of the group found at about this depth.

Pit 17- this was a constructor's test pit (old pit no. 5). A soil sample was taken from under the building at a depth of -3.4 feet. Near this depth under the building was found a ceramic sherd. In front of the building about the same depth were collected oyster shells, brick fragments and a ceramic sherd.

Pit 18- a soil sample was taken at 0 depth under the wall. Nothing of significance except for some brick fragments were recovered from this pit. One piece of flint was recovered at -2 feet in the front.

Pit 19- this was an especially rich excavation when compared to the neighboring yields. From in front of the building at a depth of 3 to 1 feet depth above "O" datum were found broken glass and ceramics. No artifacts were found under the building. Two pipes, identified as modern, were found at a depth of 3 feet, running E-W. One was of cast iron and one of copper.

Pit 20- this was an unproductive pit. None were found under the building. A few were found in front.

Pit 21- No artifacts were found under the building. From a depth of 1.0 to 0.5 feet in front of the building were recovered a kaolin pipestem, a couple iron nails, some ceramic sherds, brick fragments, bone fragments, a roof tile, At a depth of ca. 3.8 feet to 1 foot also in front of the building were recovered a similar array of specimens.

Pit 22- no artifacts were recovered from this pit until the 2 foot elevation (Fig.28 ). In the stratigraphy, large rocks were found at the base of the pit at ca. 7.5 feet. A log was encountered at -2 feet running E-W. This pit was mostly sterile. There were some ceramics, an iron bolt, bones and shells from the depths below 2 feet elevation.

Pit 23- there were no artifacts from in front of the building. All of the finds were from under the building foundations. A strange circumstance was the occurrence of a Delmonte tin can, fragments of ceramics, and the glass base of a modern liquor bottle at a depth of 0.5 feet under the building foundation. Under the cobbles was unearthed a cast iron pipe. With the modern pipes was added new fill.

Pit 24- no artifacts were found under the building. In front of the building nothing of significance was recovered.

Pit 25- a number of specimens were found under the building foundations and in front of the building. From a depth of 3 to 1 foot in front of the building were recovered a rolled copper sheet, a large nail, brick fragments, animal bones and a piece of scored sandstone.

Pit 26- there were many rocks encountered at about the water or "0" level. A number of artifacts were found from 4 feet to 0 feet elevation under the building including a fragment of ceramic pipe bowl, 1 fragment of marble, a piece of ceramic pipe. From 0 elevation to -2 feet were recovered some brick fragments and ceramics. Deeper in the pit from -2 to -3 feet elevation were found more bricks, drainpipe fragments, ceramic sherds and an aluminum fish-fork.

Miscellaneous- Two groups of specimens were recovered outside the precincts of the Coffee Warehouse. They were namely from the excavation in Main Street of Man Hole No. 5 (Fig. 12) in front of the warehouse, and from various parts of the tunnel where it penetrated the fill in front of the old water line on Water Street. On Nov. 21st, M.H. 5 yielded oyster shells and bricks at a depth of about 2 feet (cat. 069). At -2 feet elevation were found two wood beams, some oyster shells and bricks. One of the beams (Fig. 23) measuring about  $3\frac{1}{2}$  feet long by 19 inches wide looked like the base for a pillar. It was not saved.

The tunnel materials found at a depth of about 15 feet below street surface included 4 pieces of leather, 5 pieces of bottle glass, 9 pieces of ceramics, 2 broken bricks, 3 pieces of wood, 1 architectural tile fragment, 1 oyster shell, 1 land snail shell, 3 animal bones, and 1 handsome Mocha ware salt shaker. Mrs. Geismar identified the artifactual specimens. She believed that on the basis of her studies of the Empire Stores material that the tunnel artifacts represented an earlier dated collection than that found associated with the warehouse. The tunnel artifacts appeared to date between ca. 1790 to 1840. She believed that the materials probably came from a "recent" dump. The mean date would be about 1815, although it is more likely that the fill was laid down at least a couple decades later. The streets began to be paved about 1842. The tunnel materials are described in Appendix 8 (Fig. 29). All of the specimens except for a piece of wood which I personally collected in the tunnel at Washington Street were donated by Mr. Chris Nobriga.

Mrs. Joan Geismar had analyzed the bottles and the ceramics recovered by the field archaeologists. A summary of her fuller

analysis ( Appendix ? ) is given below. Full accounting of the finds by pit and catalog numbers are given in their appendices by Donadeo and Alterman.

#### Summary of the Artifact Analysis

A total of 1,295 artifactual and non-artifactual specimens were recovered from both the four trenches inside the warehouse and from the excavations at the front. These included 1,017 artifacts, and 278 animal bones, which have been classed as the non-artifactual specimens in the total. The break down of these specimens is given as follows. From both pits and trenches were recovered 198 architectural specimens, such as building artifacts (bricks, slate, roof tiles, etc. ; 323 glass specimens (bottles and window glass); 79 metal specimens (nails, bolts, hooks, rods, etc.); 398 ceramic sherds (plate fragments, etc.; 61 pieces of leather (shoe fragments, etc.); and 57 miscellaneous pieces, including coal, cinders, slag, copper, coin, flint, spark plugs, beer can, electrical and plumbing fixtures parts, etc. The non-artifactual food specimens included bones, teeth and shells. The collection was washed and labeled by Miss Donadeo and Mr. Alterman in the John Street laboratory of the New York State Maritime Museum.

The largest part of the artifactual materials was made up of the bottles and ceramic materials. Mrs. Geismar's analysis shows that the Empire Stores was built on a fill which must have come from elsewhere presumably in the near vicinity. Her findings indicate that the domestic ceramics were almost entire of British manufacture, which in itself may seem to be an oddity. Bottled wines and medicines were important parts of the domestic refuse in the fill. Her researches indicate that bottled beverages must have been

available to the local community by about 1860. There were a number of subsequent intrusions as evidenced by the artifacts, including such things as spark plugs, Delmonte fruit can, Schaeffer beer can, pull tabs, electrical parts, etc.

Mrs. Geismar made an important distinction in her analysis, in that she separated the pit area group into two parts, viz. one part under the warehouse, and one part in front of the warehouse. This division was based upon the conclusion that the materials under the warehouse must have been deposited prior to the construction of the building in 1885, and the artifacts in front of the warehouse could have included materials post-dating 1885.

There was a bottle cache associated with the footing of the building in pit 3 (cat. nos. 017B, 097B) and pit 4 (cat. no. 023) where analysis of the bottles confirms the documentary evidence of a forerunner of the Empire Stores. Fourteen bottles were found in this feature, which gave a mean dating of about 1860. This would be consistent with the construction date of buildings about that time, which burned in 1869. Tabulation of the dates for six identifiable bottles found in the trenches inside the Empire Stores shows that they date about 1865.

Mrs. Geismar inferred that the bottle fragments from the Empire Stores represent both fill and construction-related artifacts. She felt that the bottles with the median dates of about 1850 and before belonged to the fill, and those of about 1860 and after came from construction debris. She noted that about 35% of the material dated from 1850 or earlier, and about 30% from later than 1850 from the pits. From the trenches she dates the artifacts as about 38% from 1850 or earlier and about 12 % from 1860 or later. About 16% of

the bottles in the pits were identified as post 1904 age, whereas might be expected, the trenches inside the warehouse yielded no bottles of this late age.

Mrs. Geismar noted that 44% of the bottles from the pits had contained wine, ale or other unidentified alcoholic beverages, while soda and mineral water bottles made up about 28% of the specimens. She also discovered that there were more medicine bottles in the trenches (25%) as compared to the pits (5%) indicating that the fill in the pits is somewhat earlier than that in the trenches. Her reason for this assumption is because there was an increase in the availability of bottled medicines over time. This point raises a question as to whether or not there had been a statistical skewing toward more medicine bottles for some unexplained reason.

In her analysis of the bottles, she felt that there were three episodes at the site. These were two fill episodes and the construction of the warehouse. I would concur with this from the stratigraphy and the documentation.

In her analysis of the ceramics, Mrs. Geismar indicates that the tableware was of British manufacture, whereas the utilitarian objects such as stoneware jugs, crocks, and bottles and ~~ironware~~ pieces seem to be of domestic origin. The ceramics, unlike the bottles, which seem to have been associated with the building, were with few exceptions appeared to have come mainly from the fill material. She thinks that the ceramics provide the evidence for a third fill episode, not apparent in the bottle analysis. All three fill episodes, according to her, occurred prior to the construction of the Empire Stores. About 76% of the ceramics came from the pits and about 58% from the trenches, providing a median

date of 1850 or before. It indicates that the fill associated with the north-south Main Street wall of the building is earlier than that under the building, and as in the bottle analysis, suggests two fill episodes. The predominant wares in the ceramic assemblage are pearlware, whiteware, and stoneware. Some of the ceramics (creamware) dates from 1762 to 1820, with a median date of 1791 in both pits and trenches. The date of 1790 was about the time that the ferry service at Main and Water Streets was begun, and fill was dumped in Main Street sometime early in the 19th century. The date of 1820 for the latest creamware ceramics is very suggestive on this point. Mrs. Geismar believes on the basis of her analysis that the fill outside the warehouse is earlier than that under the building, meaning the interior trenches. It is possible, on reflection, that this difference merely represents a skewed sample because the interior trenches were dug down to just about 5 feet depth, while the pits were dug down to about 8 feet depth, all in fill. Assuming that the deeper the excavation, the older the fill, we are missing about three feet of old fill in the interior trenches. Therefore, the youthfulness of the fill inside the warehouse is only apparent.

A touching bit of homely is evidenced in the ceramics. A pie plate had its origin about 10 blocks from the Empire Stores in a shop dating from 1865 to 1870. It is believed that one of the workmen included a pie (Robert's pie) as part of his noon-day repast.

The bottles from the cache in the ash pit in Pit 4 (cat. no. 017B, 097B) date from about 1860. This gives a fix date on the archway, and would indicate that the floorboards found on about

the same level may be presumed to be contemporaneous.

Mrs. Geismar believes that from the ceramic data, the fill which extended the shorefront could be dated from about 1842 or before. The same data according to her indicates that additional fill was put down about 1860, and supposed that a construction date of ca. 1859-1862 could be assigned for the construction of the Empire Stores. I believe that Mrs. Geismar erred on this point since she has not seen the documentation. The last building construction on the site was in 1885, when the present warehouse was built. This appears to have replaced an earlier construction which burned down in 1869. According to the stratigraphy, this building was covered over with a thin veneer of fill, and the new 1885 building was erected over the ashes of the older building. Curiously, the pits yielded no artifacts ca. 1885.

Mrs. Geismar notes that the fill used for street-grading, etc., was supposed to be "clean and wholesome earth", whereas in fact the fill was really made up at least in part of household debris--fortunately for the archaeologists.

#### Summary and Conclusions

During the course of a realignment of the sewer tunnel in connection with the Red Hook Water Pollution Control Project, Contract 1A on Main Street in Brooklyn in the spring of 1978, a foundation survey was made of the Empire Stores. This building, on Main Street (2-14) was of concern because it is a registered historic landmark. Tests around the foundations disclosed that they were in bad condition. To correct this, Underpinnings and Foundations, Constructors, Inc. spent about a month reinforcing the base of the east wall of the building on Main Street during November and December, 1978.



In order to comply with the federal regulation that archaeologists had to be in attendance during these excavations, the author as supervisor and three graduate students were employed. The archaeological and laboratory work took over 40 days. This report relies heavily on the work of the laboratory analyst plus what little stratigraphy could be extracted in the field.

This is a unique example of fill archaeology under a construction schedule, the first of its kind along the waterfront in Brooklyn. A total of 1017 artifacts were found in four trenches inside the warehouse, and a line of connected pits outside in front of the building. The excavations made up a total of about 1,400 square feet, dug down to about 7-8 feet. The specimens included glass bottles, ceramics, bricks, slate, metal, leather and wood. Non-artifactual materials included sea shells, scraps of wood, etc. Since sea level was reached at about 4.5 feet depth, leather and wood below that depth was found in excellent state of preservation. The site had to be dewatered.

Unfortunately, full documentation of the history of the construction periods and land fill operations on Main Street could not be found. Hence we have to rely upon what archaeological evidence we have in hand, supplementing this information with the documentary history available. It was not possible to do the usual kind of archaeology under the circumstances, and the soil sections were seldom seen in full profile, because they had to be guarded against slumping with wood lagging. In conventional archaeological situations we should be able to date the material from the stratigraphy, since there were historically datable objects such as the bottles and ceramics, etc. However, since this was not an in situ occupation, and a fill situation, the materials were derived from elsewhere already

in a mixed condition with attendant uncertainties. Next, the deposits on Main Street were churned up with the construction activities, witnessed by the excavation for the footings of the 1885 Empire Stores. Finally, we have the modern intrusions which introduced artifacts like beer cans, spark plugs and electrical parts.

The archaeological data confirms what we know of the historical record of the Empire Stores and Main Street. The area seems to have seen at least 4 fill episodes before the construction of the present Empire Stores. The earliest fill episode is bracketed by the bottle and ceramics dates about 1762 to 1820, and it is assumed that the latter date was the approximate fill date. Little is known about the fill association, but we do know that a major effort had been made prior to 1850, possibly about 1842 when the streets in this part of Brooklyn were paved ( no paving stones were found in the lower levels of the pits). There seems to have been landfill in a third period about 1859-62 from the artifacts, which is corroborated by the raise in street elevations by about a foot in 1859. There seems to have been new construction on the site about 1859-62, a warehouse which burned in a disastrous fire in 1869. Evidence of this burning was found in a cut inside the warehouse at a depth of 2.3 feet below the present floor. Mr. Nesmith, the owner, built a new warehouse in 1870 on the block at Dock Street to the east. Fill was put over the building remains of the 1869 fire, marking the fourth period of fill. The last stage was the construction of the present Coffee Warehouse in 1885 by the Nesmith family right over the burned building site.

Some incidental material was found in Manhole No. 5 in Main Street, and a few other artifacts were recovered during tunneling operations.

All of the objects are to be turned over to the State of New York for disposition, since it is the owner of the Empire Stores.

#### Appendices

1. Michael Alterman. Field Notes and Interpretations.
2. Michael Alterman. Pit Catalog.
3. Michael Alterman. Artifact Catalog.
4. Anne Donadeo. Artifact Catalog.
5. Anne Donadeo. General Notes and Daily Notebook.
6. Anne Donadeo. Pit Catalog.
7. Joan H. Geismar. Bottle and Ceramics Analysis, Empire Stores.
8. The Tunnel Artifacts.
9. Artifact Storage Catalog and Count of the Artifacts from Empire Stores.

## Appendix No. 1

Empire Stores: Field Notes, ~~October~~ -December, 1978

Michael L. Alterman  
Columbia University  
Department of Anthropology

Four trenches were excavated inside the "Coffee Warehouse" on October 23 and 24, 1978, to reveal the support structure of the building (Fig.14). Two trenches, nos. 1 and 2, were dug next to the large wooden columns or piers which support a beamed ceiling, and two trenches, nos. 3 and 4, were located against the stone wall on the west side of the room, which runs the height of the building, five floors. The other walls of the room are constructed of brick and rest on stone foundations. The trenches are described as follows:

Trench 1 - measuring approximately 5.5 feet (N-S) and 4 feet (E-W), was located adjacent to the east side of the pier in the south east quarter of the building. Removal of the floorboards and excavation in the trench revealed the support structure of the pier, which consisted of a 2.8 foot square granite footing just over 1 foot deep below the floor boards. Beginning about 3.8 feet above sea level (all elevations were taken from "0" datum at approximate sea level), or 1.3 feet below the present floor level, were the remains of a brick structure in the east section of the trench, which formed a wall and an arch. The arch was filled with ash and could be the remains of a stove or oven, or possibly belongs to an earlier building, which was destroyed by fire. There were no indications of another arching structure to the north at a depth of about + 2 feet, but was not explored further because the excavations were halted ( Fig.20, Plate 17).

Trench 2 - approximately 8.8 feet (N-S) by 3.5 to 4.0 feet (E-W) was excavated between the second and third piers in the same row of ten piers in which Trench 1 was located. Again the stone pedestals

of the piers were explored. The distance between them was 8.8 feet. Sterile wet "clayey sand" was reached between 3.7 and 4.3 feet below floor level or + 1.0 to +1.6 feet depth. At + 3.7 or 1.6 feet below floor level a barrel rim was identified in the west face of the trench(Plate 17).

Trench 3- exposed the west side wall of laid stone. The stone coursing continued below the floor level for about 3 feet ( about + 1.5 feet), where began a series of stepped stone footings. Each footing extended between 8 and 10 inches from the wall and each other and were each about 8 inches deep. Excavation in this trench stopped when water was reached at about sea level or "0" datum. Trench 3 was located about 15 feet from the southwest corner of the room and measured about 6 feet (N-S) by 5 feet (E-W)(Fig. 21, Plate 21).

Trench 4- which was 5 feet square was located about 50 feet from the same corner, or 30 feet from Trench 3. Burned floor boards were preserved in this trench at about +2.9 feet ( about 2.3 feet below the present flooring). Samples of the burned wood were kept. Professor Solecki photographed this feature during excavation on October 24th. It is thought that this feature records a previous building at the Empire Stores site. It was reported that an earlier warehouse, dating from the 1840's stood there and burned down during the Civil War period, before 1885, when the present building was erected(Plates 20,22,23).

The fill above and below this floor level was more sandy and dry than fill from Trench 3. Beneath the 2.9 foot floor level, this fill was comparatively unproductive in artifacts. Some coarse glazed earthenware (?) was recovered, but there was a marked absence of shell and bone debris. The footing of the wall was located in

in this trench at a depth of + 1.2 feet. Excavation was stopped at + 0.3 feet before water was reached because of the collapsing side walls.

Summary Notes- November 15, 1978-arrived 8:45 A.M. and found that excavation had already been made in four pits as preliminary tests. These were numbered pits 1, 12 and 17. Each of these had been dug below water level and were being pumped dry. The sidewalls of these pits were shored with planking and so no stratigraphic observations could be made. The original wooden pilings which support the outer (eastern) wall of the warehouse have rotted from exposure due to fluctuations in water level and tides. They are being sawed down and reinforced with steel rings to support a network of I beams and spacers which will carry the load of the wall (Plate 12).

Lagging, timbers used as "rails" for the original pile driving machines, was first located in Pit 12 on November 16th. These timbers are about 12 inches square and were apparently left in the ground after use (Fig. 22). The lagging in Pit 12 began at ca. - 0.7 feet depth.

Lagging was also encountered in a trench which was opened in Main Street, in line with Pit 15, to test a grout for improving tunneling conditions. It was exposed at about sea level. This test pit also revealed an architectural pier.

Lagging was also located in the south side of Pit 13 at about -1.5 feet depth, and ran diagonally NW-SE into Pit 12. Lagging in the south end of Pit 20 was located at about -1.0 foot depth and the north side of Pit 21 at about + 0.5 feet depth.

A drain pipe emptied into Pit 2 and so artifacts were collected separately from the top of the pit and the area surrounding

the pipe, which may have been the cause of recent intrusive material. Sterile fill beginning at sea level consisted of from top to bottom the following material: "grey sandy gravel," "reddish sandy gravel" and "clayey sand." A large amount of wood shavings and strips were encountered between depths of -2.5 and -3.0 feet.

A flagstone walk was encountered in Pit 15 at a depth of +3.0 feet, or about 1 foot beneath the present cobble stones of the street. One fragment of this was saved, while the other pieces were discarded at the site.

Large quantities of coal and iron, fused with cinders and glass, were recovered from the north side of Pit 4 at an elevation of between +1.0 and +0.0 feet. Glass artifacts from the south end of Pit 4 were found as a continuation of the large amounts of glass from Pit 3. These glass artifacts include some intact or whole mineral and soda water bottles. This feature at the base of the stone footing of the outer wall of the warehouse should be contemporary with the original building, and initial study of the artifactual materials seems to confirm this.

A series of ash lenses in Pit 5 extended from +3.5 to +2.0 feet. Cinders were concentrated in the upper half foot or foot of deposits. Artifacts were collected separately from above and below this sterile ash feature.

Some earth was screened, but this procedure did not seem to be worth the effort as very few fragments which were missed in initial sorting in the wheelbarrow were recovered in the screens. Some earth from Pit 24 was screened through a ¼ inch mesh and some through a ½ inch mesh when the ¼ inch screen tore (Plate 19).

Michael Alterman- Interpretations.\*

The majority of cultural material recovered from the 26 construction pits along the front and under the wall of the Main Street entrance to the former Empire Stores building consisted of scattered ceramic and glass fragments, leather shoe pieces and butchered animal bones and marine shells. For the most part these artifacts were buried either during landfill operations in the early 1800's, which preceeded the paving of Main and Water Streets, or the backfilling of construction trenches during the erection of the Empire Stores.

A concentration of bottles, many intact and of the mineral and soda water type, and nodules of rusted iron were recovered in pits 3 and 4, from depths of 2 feet to about sea level, just under the stone footing of the brick wall. This artifact group dates to the 1850's and 1860's. Some more recent material entered the fill from a number of intrusions. A drainpipe which entered pit 2 was responsible for introducing modern material, which was recognized and collected separately during excavation. Modern glass in some pits such as pit 7 and 19, were buried when pipes and wires were laid throughout the long use of this warehouse, until 1963.

The carbonized remains of floor boards were observed within the building in trench 4, at a depth of 2.3 feet below present floor level, and are believed to record the presence of an earlier building at the Empire Stores site. The only artifactual material from trench 4 comes from above this

---

\* This represents Mr. Alterman's own interpretations and observations. Certain items concerning errors in history of the Empire Stores have been deleted.

floor level. However, in trench 3, situated 30 feet away, over 100 items were cataloged from elevations between 2.6 and 2.0 feet above sea level (ca. 3 feet deep), below a dark organic stratum. A preliminary assessment of the trench 3 artifacts suggests that all of this material could date prior to 1850. Such an apparently sealed deposit pre-dating the construction of the 1885 Empire Stores would appear to confirm the interpretation of an earlier building on this site.



Appendix No. 2  
Pit Catalog, Michael Alterman

Preface: The following section, Appendix 2 by Mr. Alterman, is reproduced in its original form, and represents his own analysis of the materials which he found in both the trenches and the pits during the periods he was in attendance at these excavations. It must be observed that there are some reservations concerning his identifications, particularly the ceramics. It is felt that a number of these identifications ( whiteware, creamware, etc.) are in error, according to Mrs. Joan Geismar. She has analyzed the bottles and ceramics, the report on which appears in the Appendix No. 7, written by her.

Following the pit catalog by Mr. Alterman is the artifact catalog, which we have made up from the items in his own pit catalog. Miss Donadeo's Artifact Catalog (Appendix No. 6, p. 147) follows in the numerical sequence. Her description of the pit excavations during the time she was in attendance is described in Appendix 4 ( General Notes, Daily Notebook) from p. 130.

In Mr. Alterman's Appendix 2, next to the trench or pit number are the identifying catalog numbers. No artifactual data was recorded from pits 1, 8, 10, 20, 22, and 23.

The elevations are relative to "0" datum, or mean sea level, whose water seeps in from the East River a few rods away. The / sign between elevation numbers stands for "to", when this word is absent.

Appendix No. 2  
Pit Catalog  
M. Alterman

CATALOGUE

TRENCH 1 #048 (elev. +5.1/+ 3.5 ft.)

1. stoneware frag. - buff & mustard salt glazed exterior, buff glazed interior.
  2. whiteware - rim frag.
  3. whiteware - frag. with bevel
  4. pipe stem - grey/black ceramic, oval
  5. bottle - cobalt; 5 vertical rows of embossed lettering
  6. bottle - neck, olive green; 'champagne type' (turn mold, sheared lip, 'laid-on' ring beneath shear (ca. 1835-40)
  7. bottle - olive/black; seam on shoulder from 3-piece mold (pre 1885)
- one marble slab, ca. 1 inch thick
- three nails, 2½-3" long, badly corroded
- eight pieces of shoe(s) - sole and heel, attached by copper tacks
- one cinder
- five oyster shells
- one rib - small mammal
- one mandible, right side, Sus

CATALOGUE

TRENCH 1 - #049 (elev. +3.5/+2.0 ft. )

1. stoneware frag. - mustard salt glazed exterior, translucent glazed interior
  2. ironstone - bevelled rim of jar/vase
  3. two frag. "Rockingham" type glazed ceramic - one with relief of figure
  4. bottle - octagonal base, aqua
  5. pipe stem - kaolin, burned, raised geometric decoration
- one oyster shell
- two ribs - prob. Bos, one with vertebral attachment
- one rib - small mammal
- one bird bone

TRENCH 1 - #050 (elev. +3.5/+2.0 ft. // feature in SE corner)

1. creamware - "Rockingham" type glaze (fine); 3 frag. decorative jar
  2. ironstone - bowl, ca. 7" diam.
  3. earthenware - bowl, ca. 8½" diam., interior glazed dk. brown, trace of glaze on exterior
  4. stoneware - jar/jug, grey speckled salt glazed exterior; dk. brown interior
  5. bottle - Intact, aqua, oval, 7" high, "scar" on shoulder "Horseshoe flask"
  6. bottle - base with conical inverted bottom, heavy olive/black glass
- frag. bottle glass, olive, irridescent patina
- twisted wire cable
- burned/blackened cloth (felt?)
- one piece coal
- one cinder
- two oyster shells

Empire Stores Excavation

## CATALOGUE

TRENCH 1 - #054 ~~42.0~~ 40.7 ft. ~~and~~ (elev.)

1. ironstone - lidded jar with handle(s), ca.  $3\frac{1}{2}$  " diam.  
white with blue striped design
  2. stoneware - bowl, fine grey fabric, pale green glaze both sides
  3. stoneware - jug, grey, blue on exterior neck and lip, salt-glazed,  
brown interior.
  - 4 & 5. stoneware- grey, salt glazed exterior; brown interior.
  6. porcelain frag.
  7. bottle - aqua, soda bottle frag, embossed "DEARBORN .. 82..."
  8. ironstone frag.
  9. glazed earthenware - roof tile?
  10. bottle - champagne type, 2" deep "kick-up", olive green
  11. bottle - olive green frag, with patina
- one green bottle glass frag.
- one piece corroded iron (Hinge?)
- leather shoe sole and heel with copper tacks
- three oyster shells

Empire Stores Excavation

## CATALOGUE

TRENCH 2 - #044 (elev. 5.2~~4~~4.4 ft.)

1. painted wall plaster, ca. 3/4" thick
2. ironstone - thin molded frag.
3. ironstone - thick, rim of bowl/jar
4. ironstone - plate bottom, marked in red-brown "IM" (Imperial Ironstone?) "EL SM..."
5. stoneware - jar, ca. 9" diam. rim, grey and splotchy brown salt glazed exterior
6. bottle - neck, lt. blue irridescent; sheared top and applied rim (bitters bottle?)
7. bottle - aqua (Mineral or Soda water?), raised lettering "...AL" (mineral Waters?) one side; "...E" other side, chalky patina
8. bottle - base, ca. 3 3/4" diam, aqua, irridescent patine, thin
9. bottle - aqua, square, recessed side panel
10. plate glass - four frag., blue tinged, irridescent
11. roof tile - dk. brown glazed terracotta
12. roof slate - purple
- one leather shoe sole
- one leather shoe heel
- two iron pieces (nails?)
- one piece coal
- two oyster shells
- two Bos ribs, sawed; one with vertebral attachment
- one Bos distal tibia, sawed

## CATALOGUE

## TRENCH 2 - #045 (elev.+4.4 to+2.9 ft.)

1. painted wall plaster, ca.  $\frac{1}{2}$ " thick
  2. stoneware - jar, ca. 6" diam., "putty" salt glaze
  3. stoneware - cream & mustard salt glazed exterior, cream glazed interior
  4. creamware - plate frag., feather edge, green underpainted rim
  5. whiteware - feather edge plate, blue rim (late type)
  6. creamware - two frag of footed bowl
  7. ironstone - Tile? frag., cobalt blue transfer pattern of classical architecture
  8. ironstone - frag of decorative jar or vase, blue floral transfer pattern.
  9. ironstone - plate or tile, blue transfer pattern of landscape
  10. whiteware - three frag. bowl or pitcher, faded blue transfer pattern of neo-classical architecture and landscape
  11. ironstone - heavy white glazed, base of pitcher?, chamber pot?
  12. ironstone - rim of bowl
  13. ironstone - bowl frag. cream colored
  14. ironstone frag
  15. ironstone - handle of chamber pot or pitcher
  16. pipe stem - kaolin
  17. roof slate - grey
  18. bottle - aqua, irridescent with "XX.."
  19. bottle - two frag, pale green tinge, heavy seams
  20. bottle - olive green frag.
  21. plate glass - three frag.
- one corroded nail, ca. 2" long
- one large iron piece - Latch?
- piece copper wire

## CATALOGUE

## TRENCH 2 - #045 continued

three leather shoe soles  
one leather piece  
one cinder  
three oyster shells  
one clam shell  
one Bos scapula, sawed  
one Bos roximal femural epiphysis  
one Sus humerus  
one Sus scapula  
two bone frag.

---

## TRENCH 2 - #046 (elev. +2.9/+ 0.3 ft.)

1. creamware - plate rim frag, cream with lt. blue trim, ca. 8" diam.
2. whiteware - soup bowl or platter, feather edge, blue rim meticulously painted (early type)
3. ironstone - small plate/saucer, ca. 4½ - 5" diam., raised lavender floral decoration on white
4. ironstone - three frag of pitcher, embossed floral design; one handle
5. ironstone - rim of plate
6. ironstone - brown transter pattern
7. earthenware - bowl, interior glazed speckled brown
8. earthenware - unglazed bowl/ jar rim frag, ca. 8" diam
9. stoneware - jar/jug frag., ca. 3" diam., exterior buff and mustard salt glazed, interior glazed buff
10. stoneware - spout, dk. brown glaze

Empire Stores Excavation

## CATALOGUE

## TRENCH 2 - #046 (continued)

11. pipe - kaolin, oval stem "O", decorated bowl
  12. bottle - heavy, base, turquoise, ca.  $5\frac{1}{4}$ " diam.
  - \* 13. bottle - "Jeroboam" - ca. 6" diam., olive/black; two frag. one neck, turn mold, asymmetrical applied neck, and one base
  14. bottle - aqua, neck with applied rim
  15. bottle - aqua, neck with broken rim
  - \* 16. bottle - hand blown, aqua, base ca.  $1\frac{3}{4}$ " diam, pontil scar
  17. bottle - olive green frag.
  18. bottle - olive green frag.
  19. bottle - aqua, square, sunken side panel (medicine, bitters?)
  - \* 20. glass - Decanter ? - pattern molded with horiz and vert. bevels, pontil scar, ca.  $3\frac{1}{8}$ " diam.
  21. painted wall plaster, ca.  $\frac{1}{2}$ " diam.
  22. whiteware - two frag. bowl, decorated with thin black band and green leaves
  23. stoneware - bowl, cream glazed
  24. roof tile - dk. brown glazed earthenware
  25. whiteware frag.
- small leather shoe sole
- two oyster shells
- one Bos proximal tibia, sawed both ends
- one Bos pelvis. cut and sawed
- one rib, sawed and broken
- one bird humerus



## CATALOGUE

## TRENCH 3 - #052 (elev. ca. +2.6 / +2.0 ft.)

1. slipped earthenware - two frag. of plate with "combed" edge pre 1800.
2. earthenware- golden yellow glaze
3. earthenware - two frag. of shallow bowl, ca. 10½" diam. orange & brown splotchy glaze
4. "Rockingham" type glazed vase (?) frag.; buff interior
5. stoneware - jar base, ca. 4" diam.; grey-green salt exterior glaze, same color interior.
6. stoneware - two frag. jar, ca. 3" diam.; orange glaze exterior and interior.
17. stoneware - four frag. of large jug (one handle); ca. 10" diam. buff and mustard glaze
18. stoneware - base of jar, ca. 6" diam; exterior mottled buff/brown salt glaze, interior - dark brown
19. stoneware - buff salt glazed frag.
20. stoneware - rim and lid of large storage jar, ca. 10½" diam.; with attached handles; bas-relief decor. lid - open flower pattern; exterior - grey/tan salt glaze, interior - dk. brown.
21. stoneware - jar or pipe frag., ca. 4" diam.; exterior - grey salt glaze, interior - dk. brown.
22. creamware - seven frag. of large, lipped bowl, ca. 10" diam. at mouth white and blurry brown concentric bands and white dribble slip on tan ground.
23. stoneware - three rim frag. of large jar, ca. 11½" diam; crackled tan glaze.
24. Staffordshire (?) - glazed white stoneware platter frag; faded blue floral decoration on border;
25. creamware - plate frag. blue transfer pattern of cottage.
26. whiteware - Blue feather edge plate or shallow bowl frag.
27. creamware - sponge or speckled transfer decor. frag.
28. whiteware - rim frag of small plate (ca. 5½" diam); blue underpainted floral decor.

continued

Empire Stores Excavation

## CATALOGUE

## TRENCH 3 - #052 (continued)

29. Staffordshire (?) - figurine frag.; blue & gold on white glazed stoneware (1820's ?)
30. ironstone - top of jar, recessed lip, ca. 4 3/4" diam.
31. ironstone - edge of bowl, ca. 9 1/2" diam, beaded rim (wash basin?)
32. ironstone - embossed frags.  
& 33.
34. ironstone (?) - heavy buff glaze
35. Penny - large Cent, corroded copper
36. nails - two, corroded iron (one <sup>clearly</sup> square headed)
37. earthenware roof tiles - two frag., glazed brown/black
38. earthenware - two glazed frag. of tile (?)
39. drainpipe frag.
40. bottle - base, green/black, ca. 3 3/4" diam.
41. bottle - olive green; bottler's name in relief (...ATER ...MITH)
42. bottle - neck with applied lip, olive green
43. bottle - medicine or household Aqua, 2" diam base.
44. bottle - medicine or household type, Aqua, neck and lip
45. bottle - medicine or household type, Aqua, flat bottom oval base and side
46. bottle - medicine or household type; Aqua, octagonal base with pontil scar (1840-60).
47. bottle - medicine or household type; Aqua, frag with raised monogram (?) "I"
48. Bottle - Aqua, embossed "...E. KY..." (bottler)

continued

## CATALOGUE

## TRENCH 3 - #052 continued

49. bottle - Aqua frag.
50. bottle - green frag.
51. bottle - green frag.
52. bottle - olive neck frag.
53. plate glass frag.
54. glass - yellow/gold with patina, embossed "D -J"
55. bottle - brown, neck and applied lip, no seam (turn mold?)
56. ironstone - lip of bowl, ca.  $5\frac{1}{2}$ " diam.; 2 concentric blue bands on white nr. lip.
57. ironstone - side of bowl with bevel; concentric blue bands (cf. 56)
58. ironstone - rim frag of bowl, ca.  $6-6\frac{1}{2}$ " diam.; aqua bands on white
59. creamware - or pearlware; two rim frags of bowl, ca.  $6\frac{1}{2}$ " diam., decor.- two brown concentric bands above blue, brown and tan swirls,
60. creamware - bowl frags (two), ca.  $8\frac{3}{4}$ " diam. Decor.- dk brown and tan concentric bands and blue splatter on white; interior glazed buff
61. stoneware - rims of jars; tan/buff salt glaze
- & 62. " "
63. stoneware - tan/buff frags.
- & 64. " "
65. stoneware - rim of bowl, ca. 10" diam.
66. whiteware - or soft-paste porcelain; frag. of fine cup or small bowl, blue underpainted Chinoiserie decoration. ( exterior)
67. whiteware - (cf. 66) Chinoiserie decor. interior, shallow bowl.
68. Porcelain - Canton Export; blue & white, base of plate or shallow bowl (pre 1835).
69. ironstone - "story" jar or mug, ca.  $2\frac{1}{4}$ " diam; black transfer pattern "NIGHTINGALE"
70. creamware - green feather edge platter.
71. ironstone - base of pitcher or basin, printed with crest and "Imperial Ironstone China - Henry Alco..." underneath.

continued

## CATALOGUE

## TRENCH 3 - #052 continued

- 72. porcelain - decorative piece, base of bowl, vase or dish; bisque bas-relief floral decor. with traces of glaze or enamel on foot, glazed interior.
- 73. ironstone - ten frag. of footed bowl (some base and rim)
- 74. ironstone - three frag of shallow bowl
- 75. ironstone - tow frag of footed shallow bowl
- 76. ironstone - chamber pot rim, ca. 7½" diam.
- 77. ironstone - platter rim
- 78. ironstone - rim of bowl or jar, ca. 6" diam.
- 79. ironstone - chamberpot rim, ca. 7" diam.
- 80. ironstone - rim of plate, 9" diam.
- 81. ironstone - rim of platter
- 82. ironstone - "pie plate", traces of blue lettering-obverse
- 83. ironstone - three frag shallow bowl/plate
- 84. ironstone - two frag jar (one rim)
- 85. ironstone - rim frag of shallow bowl
- 86. ironstone - chamber pot frag. ca. 7" diam.
- 87. ironstone - foot of bowl, 3" diam.
- 88. ironstone - two frag.
- 89. ironstone - five frag. deep bowl
- 90. ironstone - rim of shallow bowl, ca. 7½" diam.
- 91. ironstone frag.
- 92. ironstone - embossed frag.
- 93. ironstone - base frag.
- 94. ironstone frags.
- 95.       u               h

continued

Empire Stores Excavation

## CATALOGUE

## TRENCH 3 - #052 continued

- 96. earthenware - tile frag, trace of glaze
- 97. mesh - fine copper wire screen, circle  $3\frac{1}{2}$ " diam.
- 98. copper - cut, flat "ear" shaped piece
- 99. pipe bowl - kaolin, frag.
- 100. pipe stem - kaolin, round, tapered
- 101. pipe stem - "Peter Dorni", decorated
- 102. pipe stem - glazed and corroded, tip intact
- 103. earthenware - light brown/green glaze (ca. 1800).
- 104. stoneware - large jar frag., salt glazed grey

four iron rods, one hooked at end; corroded

one iron hinge, corroded

one corroded iron piece

one frag black vitrified glass

8 shells (4 clam, 4 oyster)

1 Ovis metatarsal

1 Ovis distal radius

2 Ovis femurs (right complete, left proximal end)

1 Ovis tibia, proximal epiphysis

1 Ovis scapula

1 phalanges (first)

1 Bos rib, sawed

1 Bos scapula, sawed two places

~~Rotting shoe leather (discarded at site)~~

Empire Stores Excavation

## CATALOGUE

## TRENCH 4 - #053

1. creamware - Mocha ware; rim and side of bowl, ca. 5" diam., white, blue and brown swirls on mocha over white. ca. 1840-60's
2. ironstone - white frag.
3. ironstone - cream glaze, rim of jar, ca. 3" diam at mouth.
4. ironstone - decorative handle of pot or pitcher
5. tile (?) - four frag. of black glazed earthenware
6. tile (?) - 2 frag. of brown glazed earthenware
7. brick - plastered and painted white
8. bottle - base, light green with patina
9. roof slates - 2 grey

two frag. bottle glass, olive green

two rusted iron pieces (nails ?)

one shell

\*\*\* Fragments of burned floorboards, at about +2.9' (2.3' below present warehouse floor). Remains of earlier building on site.

CATALOGUE

PIT 2 - #008A (elev. ca. +4/+1 ft.)

1. whiteware - frag. of bowl or pitcher,
2. whiteware - Blue feather edge plate (late, carelessly painted trim)
3. ironstone - Flown Blue decoration - oriental floral motif plate about 6½" diam. and 1 3/4" high
4. porcelain - five frag. of footed plate, decorated with multicolor floral transfer pattern
5. pearlware - finely exec. swirl motif in grey, blue & white; ca. 1820..
- 6 - 8. porcelain - three plate frag. with scalloped edge and embossed rim; 6 & 8 with traces of lustrous glaze and gold trim.
9. whiteware frag.
10. Ironstone - embossed frag.
11. creamware frag.
12. ironstone - foot of small bowl
13. whiteware - two frag. of small bowl (one base, one rim); bluish-white glaze with dk. brown concentric bands.
14. pearlware - tiny frag., blue, white & brown swirl pattern
15. ironstone - rim frag. of plate, green splatter or sponged decor.
16. ironstone - bowl, <sup>frag.</sup> glazed in two bands of white and robin's egg blue; 3 1/8" high and 5½" wide at mouth. (illus.)
- 17 & 18. pipe stems - kaolin
19. pipe bowl - kaolin, "T D" monogram surrounded by wreath (ca. 1880-90's)
20. spark plug - ironstone, "Champion X"
21. bottle - base, green, textured glass (recent)
22. bottle - base, black glass
23. glass - aqua, frag. of bottle or insulator
24. bottle - aqua, prominent seam on frag.



continued

CATALOGUE

PIT 2 - #008A continued

- 25. bottle - aqua, neck frag. no seam (turn mold ?)
- 26. bottle - two frag. of textured clear glass, traces of label.
- 27. bottle = frag. of textured clear glass.
- 28. steel lock - "Octagon"
- 29. Iron hook - bolted end, ca. 7" long
- 30. bottle - aqua, frag. with seam.
- one frag green bottle glass
- three pieces of glazed "eathenware" pipe or tile
- three lumps of iron
- one oyster shell
- one distal humerus (cut)
- one longbone frag.

---

PIT 2 - #008B (near drainpipe - recently intrusive garbage)

- 1.- 3. Bottle glass - clear but sooty (2. oval neck frag.)
- 4. bottle - base, green
- 5. bottle - clear but sooty, round
- 6. bottle - clear, but sooty; oval base "Half Pint" stamped in glass
- 7. bottle - clear but sooty; neck with screw top
- brick - half; burned, red underneath. Recent structural brick

NOTE: some material bagged with 008A as PIT 2, may have been recently intrusive like the bottle glass of 008B (eg. "octagon" lock)



## CATALOGUE

PIT 3 - #017 B - continued

16. bottle - base, ca.  $2\frac{1}{2}$ " diam, aqua
  17. bottle - aqua, embossed "T & W" in large open letters
  18. bottle - aqua, embossed "DIX...4 .. WAL .. N.Y. ...",  
frosted appearance
  19. bottle - turquoise, neck with blob top
  20. bottle - aqua, neck blob-top type
  21. bottle - two frag of thick olive green glass
  22. bottle - three frag of aqua glass, frosted appearance
  23. bottle - three aqua frag.
  24. thin olive green glass
  25. thin green glass
  26. plate glass, ten frag., green tinged
- rusted nail, ca.  $2\frac{1}{4}$ " long


Empire Stores Excavation

## CATALOGUE

PIT 3 - #017 A (elev ca. 0 ft. under bldg)

1. ironstone - handle of pitcher or chamber pot
  2. bottle - inverted base (2½" kick-up), olive green
  3. bottle - olive-brown frag.
  4. bottle - olive green frag, frosted
- 

PIT 3 - #017 B (FEATURE - bottle "cache" under stone footing/foundation)

1. pearlware - bowl frag., interior glazed white, exterior Robin's egg blue
2. creamware - "Mocha ware", two frag., decorated in brown, blue, mocha and white bands and smudges (ribbons?) early 19th cent.
3. ironstone - pedestal of jar/jug, ca. 3½' diam.
4. ironstone - base of bowl
5. ironstone frag.
6. stoneware - handle, brown metallic salt glaze
7. stoneware - grey fabric, lip of jug; salt glazed, interior brown
8. stoneware - grey fabric, jug/bottle, ca. 3 3/4" diam., grey and mustard salt glazed exterior, transparent glazed interior
9. stoneware - buff fabric, salt glazed
10. pipe stem - kaolin, irregularly shaped, tapered
11. pipestem - kaolin, oval  in section, raised decoration near break near bowl attachment
12. pipe bowl - kaolin, frag.
- \* 13. Pickle Bottle - over 11" tall, 9 frag. of aqua glass with "gothic panel" decoration. popular 1850's and 1860's.  
(cf. Van Rensselaer, 1926, Early American Bottles and Flasks- illus)
14. bottle - base, ca. 2½" diam, pontil scar, aqua
15. bottle - base, ca. 2 3/4" diam, turquoise, embossed "... NY. ..."  
(mineral/soda bottle, 1850's-1860's)

## CATALOGUE

PIT 3 - #018 (elev ca. -4 ft)

1. stoneware - tile?, glazed purple/brown one side
2. stoneware - two frag, glazed both sides purple/brown
3. whiteware - thick base of footed bowl
4. whiteware - base of plate or shallow bowl

two iron rods, 3 and 5" long (gauge ca. 10P nail)

one brick

five oyster shells (one extremely large, 5-6" long)

four clam shells

one piece coal

two Bos scapulae, sawed (one both ends - "slice")

one thoracic vertebra

Empire Stores Excavation

## CATALOGUE

PIT 4 - #023 (FEATURE - bottle cache along stone footing, cf. PIT 3, #017E

1. bottle - aqua, thin & fragile, pontil scar, faint seam, ca.  $2\frac{1}{2}$ " diam. ca. 1850
2. bottle - aqua, heavy, intact, embossed "R. ROBINSON, 376, BOWERY, N.Y." and reverse side "XX" in large open letters,  $2\frac{1}{2}$ " diam, blob top mineral or soda water bottle (1850's-1860's)
3. bottle - turquoise, broken at neck,  $2\frac{1}{2}$ " diam, embossed "M.B. & Co." "97 WEST 35TH ST N.Y."
4. bottle - emerald green, intact,  $2\frac{1}{2}$ " diam, embossed "R.C. & T" "NEW YORK"
5. bottle - three frag., heavy olive green, base 3" diam, embossed "NEW YORK" "...CLA.."
6. bottle - five frag., straight-sided, turquoise (one frag short neck and blob top)
7. bottle - turquoise, neck and blob top
8. bottle - two frag., (one neck), olivegreen
9. bottle - neck, "turned", applied ring below sheared lip, olive-green
10. bottle - neck, "turned", applied ring below sheared lip, olive-green
11. bottle - pale aqua, base, ca.  $2\frac{1}{2}$ " diam.
12. bottle - aqua frag.
13. four frag olive-green bottle glass
14. bottle - heavy, olive/black glass, base ca. 4" diam.
15. bottle - olive/black, neck and applied lip
16. two frag. olive-green bottle glass, "frosted"

Empire Stores Excavation

## CATALOGUE

PIT 4 - #024 (below +1 ft. elev.):

1. earthenware - two frag. rim of large bowl or jar, ca. 11½" diam. interior glazed brown/black, trace of glaze on exterior
2. creamware - two frag. "Rockingham" type (brown & cream), covered decorative jar, with handles.
3. whiteware - plate or tile frag, blue underpaint
4. whiteware - trace of red underpaint
5. stoneware - rim frag., glazed white, brown underpainted trim on both sides, small bowl, ca. 4" diam.
6. porcelain frag.
7. stoneware - plate rim frag, white salt glazed
8. whiteware frag.
9. whiteware rim frag.
10. whiteware - plate or tile frag.
11. whiteware - plate frag., blue Chinoiserie transfer pattern
12. stoneware - vase(?), chocolate brown glazed both sides
13. Staffordshire (?) - four frag. small pitcher or vase, blue transfer pattern of "Alpine" city and landscape (1830's-1840's)
14. whiteware - rim and handle of pitcher, blue underpainted trim
15. ironstone - six frag. vase or pitcher, shallow embossed design
16. stoneware - three frag., grey fabric, Jug, salt glazed exterior and brown interior
17. stoneware - base of jar/jug, ca. 4" diam., grey/buff salt glazed exterior, brown interior
18. stoneware - 12 frag. of large jar or jug (mostly restored), ca. 6½" diam. buff fabric, exterior buff and brown (burned?), interior dark brown.
19. stoneware - grey fabric, base, ca. 2½" diam., tan salt glazed exterior, lt. green glazed interior
20. stoneware - frag, dark brown both sides

Empire Stores Excavation

## CATALOGUE

## PIT 4 - #024 (continued)

21. bottle - lt. green, square base
22. bottle - base, ca. 3" diam., olive-green
23. bottle - 3 frag., dk. amber (handblown?)
24. lamp glass - "chimney", smoked inside
25. bottle - aqua frag.
26. plate glass - 2 frag., aqua tinge
27. black glazed earthenware - Roof tile?
28. plate glass - clear, scatched
29. whiteware - bowl or jar frag, ca. 4" diam., thin brown stripes and pale blue bands decorate exterior
30. stoneware - Staffordshire? figurine (or complex vessel), blue underglaze (transfer?)
31. ironstone - frag of handle, brown floral transfer pattern
32. flint/jasper frag.
33. pipestems - two, kaolin, round
34. whiteware - traces of undrprinted design, green & blue floral
35. "baked" plaster (kind of brick?)
36. painted wall plaster,  $\frac{1}{2}$ " thick, preserves wood impression
37. ironstone - two frag.
38. ironstone - plate rim frag.
39. stoneware - jar base, ca. 4  $\frac{3}{4}$ " diam., buff salt glazed exterior, dark brown interior
40. white stoneware - handle, salt glazed
41. bottle - turquoise, ca. 2  $\frac{1}{2}$ " diam., embossed with ornate "R"

CATALOGUE

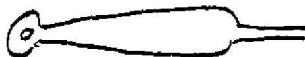
PIT 4 - #024 (continued)

42. bottle - aqua, base ca. 2 5/8" diam

43. three frag olive-green bottle glass

44. olive-green glass with patina

16" long cast iron object



2 1/2 bricks

2 brick frags

two leather shoe soles

two iron/cinder lumps

one cinder

three oyster shells

one clam shell

one Ovis distal Tibia

one rib

one vertebra

one unident. bone

---

PIT 4 - #028 ( elev. ca. 1-0 ft. , North side of trench)

masses of conglomerated Iron, sand, stones, glass, cinders, cement  
and coal - 4 large pieces, 14 smaller iron lumps with cinders

two 4" long spikes/nails

21 pieces of coal (other pieces discarded at excavation)

## CATALOGUE

PIT 4 - #031 (elev 1 ft. asl) correlate with PIT 3 - #017A

1. bottle - inverted base (2" kick-up), olive green
2. bottle - inverted base (2 3/4" kick-up) olive brown
3. bottle - 12 frag of olive green glass

one rusted iron bar, 4" long, encrusted with cement, debris

two small corroded iron pieces.



CATALOGUE

PIT 5 - #032 (elev. ca.  $+4/2$  ft.)

1. porcelain - base of small bowl
2. ironstone - frag. of cylindrical jar (jam) ca. 3" diam, with recessed lip
3. ironstone - small shallow footed bowl;  $1\frac{1}{4}$ " high, 6" diam.
4. ironstone - plate frag., blue transfer Chinoiserie pattern
5. ironstone - frag of vase or bowl, blue transfer patter;  
interior decor- open drawing of grape vines and lattice,  
exterior decor. - country villa, man in boat.

one Bos rib, sawed and chopped, also scarred

two large cinders

---

PIT 5 - #033 (elev.  $+2.5/4$  0.5 ft.)

1. ironstone - small plate frag., lt. blue transfer pattern of tracery
2. ironstone - "flown " blue frag
3. whiteware - feather edge plate, blue rim
4. whiteware - plate, scalloped rim decorated with embossed neo-classical garland and painted blue
5. ironstone - decorative jar or vase, bevelled and embossed design
6. whiteware - plate, rim frag., trace of blue
7. ironstone - shallow bowl frag
8. ironstone - frag. with embossed design
9. ironstone - two frag, white
10. stoneware - grey, jar,  $3\frac{1}{2}$ " diam., salt glazed, brown interior
11. stoneware - impressed lettering "...Y & Co", speckled grey and tan salt glazed exterior, brown metallic glazed interior
12. stoneware - large jar.jug, ca. 9" diam, base, rosy tan glaze

Empire Stores Excavation

## CATALOGUE

## PIT 5 - #033 (continued)

13. pipe stem - kaolin, oval, tapered, tip intact
  14. brown/black glazed earthenware roof tile
  15. whiteware - plate frag.
  16. iron pail? - tinned, three frag.
  17. metal - key hole plate, painted white
  18. bottle - neck, olive green, turn mold, applied top
  19. bottle - shoulder and neck, sapphire blue, 3-piece mold, blob top
  20. bottle - base, ca. 2½" diam, aqua (medicine, bitters type?)
  21. bottle - aqua, embossed " F.BATT..." (mineral or soda water)
- one piece coal
- one oyster shell
- one Bog radius, sawed both ends

## CATALOGUE

Pit 5 - #035 (elev. ca. 0 ft)

1. bottle - neck, olive green; applied, bevelled lip, no mold marks
2. bottles - two champagne type (kick-ups); olive green with blue irridescent patina,  $3\frac{1}{2}$ " diam with 3" deep hollow bases
3. bottle - 11 frag. of base of extremely large bottle, ca. 8" diam. olive green with blue irridescent patina.
4. bone -  $3\frac{1}{2}$ " object tapered at one end, made on cut, sawed and polished metapodial; small nail through center (crosswise)
5. ironstone - base of bowl
6. ironstone - plate frag (rim); Flown blue floral pattern
7. ironstone - jar (3" diam) rim frag
8. ironstone - footed bowl, transfer pattern both sides depicts Castle and surroundings, ca.  $4\frac{1}{2}$ " high
9. stoneware - jar, rim frag.; grey salt glazed exterior, lt. brown interior
10. ironstone - bowl, scalloped edge; blue transfer pattern both sides - robed man with spear (exterior), floral motif (interior).
11. stoneware - jar frag, brown glazed exterior
12. stoneware - base of jar, ca. 4" diam. grey salt glazed exterior, brown interior glaze

one clam shell

three large iron pieces - corroded and unidentifiable (one may be gear or pulley)

one Bos pelvis, sawed through acetabulum

one pelvis frag (Ovis ?)

one Ovis distal humerus

Cast iron piece, ca. 2ft. long, with rings, curving.  
(horse/carriage related? - "Hame")

Empire Stores Excavation

## CATALOGUE

PIT 6 - #055 (elev. ca. 0 ft.)

1. bottle - clear, flat bottomed
  2. brick - corner, traces of plaster
- 

PIT 7 - #014 (elev. below 2 ft.)

mostly  
RECENT!

1. whiteware frag.
2. bottle - aqua. base, ca. 2 3/8" diam.
3. bottle - clear, lip frag.
4. bottle - clear, neck (screw-top type)
5. bottle - clear frag.

two rusted nails, 3 & 4" long

three frag of recent bottle, green; one piece top with screw top  
till attached

one frag of recent amber bottle glass

two brick frag.

ten oyster shells

Empire Stores Excavation

## CATALOGUE


PIT 9 - #019 A (elev. ca. 0 ft.) front of bldg.

1. Ironstone - plate "Flown" blue decoration - Chinoiserie, marked "celaine..." on reverse
  2. stoneware - buff exterior, dk brown interior
  3. ironstone - bowl/jar, brown and mocha bands on white, incised string of circles design
  4. ironstone - pitcher, rim frag., embossed edge
- pieces of rope

PIT 9 - #019 B (elev. ca. -2 ft. in front of bldg.)

- \* 1. porcelain - Canton Export, footed rice bowl, blue underpainting
  2. stoneware - jar/jug frag., buff salt glazed exterior, black interior
- Dressed sandstone structural stone frag, ca. 5"

PIT 9 - #019 C (ca. 1.0 to -1.0 ft. elev. under bldg.)

1. slipped earthenware - plate frag, (pre 1800)
  - \* 2. stoneware - five frag. jar, grey, salt glazed ("diseased")  
with handle  
stamped  fabric of variable thickness.
  3. whiteware - complicated blue underpainted design
  4. whiteware - two frag. plate or shallow bowl, ca. 8/9" diam.
  5. plate glass - two frag, sea green/blue
- one brick - corner piece
- two pieces shoe leather

PIT 9 - # 019 D (elev. ca. -1 ft. under bldg.)

10 pieces shoe leather, mostly soles and heels, sewn

Empire Stores Excavation

## CATALOGUE

## PIT 11 - #016

- \*\* 1. Porcelain - Canton export, Rice bowl, ca.  $3\frac{1}{4}$ ", footed. decorated with blue underpainting inside near rim and along outside walls
2. creamware - Mocha type (?) - bowl; brown strips and blue and brown swirls on tan over white, ca. 6" diam.
3. ironstone - four frag of footed shallow bowl
4. ironstone - plate frag.
- four oyster shells and one clam shell

PIT 12 - #004 (elev. -0.7' to -1.8'), TEST TRENCH

begins  
Lagging running NW by SE at ca. -0.7 ft. -(removed)

1. whiteware - tile or plate frag, blue underpainting
2. bottle - green, ridged base
- Iron spike - 6" long,  $\frac{3}{4}$ " diam head

PIT 12 - #006 (elev. -1.8' to -2.3' West side of wall/behind piling)

- \* 1. slipped earthenware - plate, ca. 13" diam, combed edge. (five frag. restored to one) pre 1800.
- two leather shoe soles
- two oyster shells
- one fish bone
- \* 2. stoneware - jar, ca. 9" diam., peach colored fabric; exterior-grey speckled salt glaze; purple-brown glazed interior

## CATALOGUE

PIT 13 - #056 (below -1.0 ft.)

- |   |                             |
|---|-----------------------------|
| 1. porcelain - plate frag, decoratively monogrammed |                             |
| 2. pipe stem - kaolin                               | bark from piling            |
| one clam shell                                      | half a brick, large & heavy |
| one leather strip                                   |                             |
| one leather shoe sole, sewn                         |                             |

PIT 14 - #037 (elev ca. +3.5 ft.)

Iron Horseshoe, corroded, 5" long

PIT 14 - #038 (elev. +1.5 ft. - sandy fill)

1. ironstone - shallow bowl frag.
2. ironstone - Blue Willow transfer patter, marked "Ironstone" with crown, in blue, on underside of rim. Soup plate?

PIT 14 - #038B (elev ca. 0 ft.)

ten pieces shoe leather - sewn soles and heels

PIT 15 - #029 (elev +4.0 to +3.5 ft.) above flagstone walk

1. ironstone - five frag. plate, pale blue transfer pattern of garlands, some lettering

FLAGSTONE walk from +3.5 to +3.0 ft. (fragment removed and saved)

PIT 15 - #029 B (elev. +3.0 to +2.0 ft.)

- one steel (?) "U"-shaped rod,  $\frac{1}{2}$ " diameter
- one steel (?) rod, circular base attached

continues

Empire Stores Excavation

## CATALOGUE

PIT 15 - #029 B - (continued)

one clear bottle glass frag.

one brick, half

two oyster shells.

three frag. Bos mandible(s)

---

PIT 16 - #051 (elev -3 to -4 ft.)

1. porcelain plate frag.

2. pipestem - kaolin'

one clam shell

one brick, corner piece

one leather shoe sole, sewn

iron wire,  $2\frac{1}{2}$ " long (nail gauge)



## CATALOGUE

PIT 17 - #003

1. porcelain - cup?, decor. inside with delicate red "woven" band pattern
2. porcelain - thick jar or small vase; blue floral underpaintment (bold)
3. whiteware - plate frag., faded blue transfer pattern
4. creamware - bowl, ca. 6" diam; decorated with impressed lattice pattern, glazed brown, above black and white wavy line pattern
5. stoneware - exterior grey/green salt, interior grey glaze.

## CATALOGUE

PIT 18 - #080 (Top) see A. Donadeo's notes. Mostly shells.

1. creamware --tiny frag, white striped pattern on tan
2. lustre-ware, silver
3. whiteware - trace of blue underpaint
4. ironstone frag.
5. porcelain - electrical or plumbing fixture
6. stoneware - salt glazed, black interior
7. glass, thick frag, molded design, pale green tinge
8. flask - shoulder of bottle, green tinged glass
9. glass - green tinged frag.
10. bottle - oval base, green, "Flavor Guard Bottle", RECENT
11. glass, - clear, base of bottle(?)
12. glass - clear, raised design or insignia
13. black glazed earthenware frag. - Tile?

Five frag clear glass

one piece corroded iron piece

two brick pieces

12 oyster shells

one clam shell

CATALOGUE

PIT 19 - #025 (ca. ~~+3.5~~<sup>2.5</sup> ft. )

ironstone - footed shallow bowl  
can opener (church key type) rusted

iron rod, with wooden insert, ca. 7" long

iron rod, bolted on one end, ca. 7" long

unidentified rusted piece

liquor bottle (recent) - marked "1 pint" on side and "Fed. Law  
forbids sale or reuse of this bottle - made in USA" on bottom

one oyster shell

---

PIT 19 - #026 (ca. ~~+2.0~~<sup>1.0</sup> ft. )

1. whiteware - bowl, blue underpainted Chinoiserie design, both sides
  2. creamware - cup or small bowl, underpainted design in brown blue and mustard
  3. whiteware - two frag. cup or small bowl, blue underpainting
  4. earthenware - bowl or vase frag., dk. brown metallic glaze
  5. porcelain - electrical or plumbing fixture, No. 6 gauge (1 13/16 ") marked "MUST....TO...."
  6. bottle - clear glass with painted label in white & green
  7. lantern glass - cranberry, "wizard"
  8. bottle - base frag., amber
  9. bottle - frag., olive, frosted
  10. bottle - base, large, clear
- one nail, 4" long, round-headed, corroded
- one brick piece
- two pieces Bos mandible, green stained

Empire Stores Excavation

## CATALOGUE

PIT 21 - #041 (ca. +3.5~~4~~+1.5 ft. asl)

1. porcelain ? (soft paste) - pale green glaze, impressed mark (maker's?)
2. creamware - Mocha type, white, dk. brown and mocha banded decoration
3. whiteware - plate or shallow bowl frag, scalloped rim, blue transfer
4. ironstone - traces of blue (transfer?)
5. ironstone frag.
6. ironstone - base of small bowl
7. earthenware - mottled brown glaze (tile?)
8. ironstone - heavy white glaze (vitrified) - bathroom fixture frag.
9. pipe stem - kaolin

one aqua bottle glass frag

one frosted plate glass, bluish

one olive bottle glass frag.

one rusted iron rod, ca. 5" long

one rusted iron nail, ca. 3" long

one oyster shell

one Bos scapula, sawed

one Bos rib, sawed

one bird bone, green stained

---

PIT 21 - #042 (ca. +1 to -0.5 ft.)

1. ironstone - bowl frag, blue transfer pattern both sides
2. porcelain - rim frag of bowl. Interior decor, with abstract design in blue underpainting, bowl ca. 6" diam.

one corroded nail, ca. 3" long

one clam shell

one Bos(?) vertebral spinous process

## CATALOGUE

PIT 24 - #040 (elev +1/0') some matl. recovered in  $\frac{1}{4}$ " mesh screen,

1. slipped earthenware, yellow and green slip, plate frag with serrated edge. before 1800.
2. glazed earthenware - plate frag? c.1800
3. stoneware - "Rockingham" type glaze, 2 frag.
- \* 4. earthenware - black "luster" glaze, frag. of pot handle
5. whiteware frag.
6. stoneware - buff fabric, jar frag, ca. 5 $\frac{1}{2}$ " diam., grey salt glazed exterior, brown interior
7. stoneware - grey fabric, dribbled brown salt glaze
8. stoneware - 2 frag. of jar/jug, ca. 9" diam., grey salt glaze with traces of blue; one frag imprinted "...H...", brown interior
9. whiteware - tiny frag of cup, blue transfer pattern
10. pipestems - two, kaolin
- \* 11. milk glass (?) - shoulder and neck of bottle, made in 2-piece mold, applied lip ("laid on ring")

one iron piece, corroded

two oyster shells

two clam shells

one Femur, unfused, medium mammal

one rib

## CATALOGUE

PIT 25 - #021 (elev. ca. 0 ft.)

1. creamware - feather edge plate, green border trim
2. whiteware - two frag. plate, blue transfer pattern of "thunderstorm"
3. ironstone - plate, rim frag., "Flown" blue floral pattern
4. ironstone plate frag.
5. ironstone - frag. footed bowl
6. stoneware - base, white glazed (Staffordshire ?)
- \* 7. Champagne type bottles - six bases, diam.  $3\frac{1}{4}$  to  $3\frac{3}{4}$ ", heavy olive/black glass
8. bottle - seven frag of olive/black glass
9. bottle - neck of "champagne type", olive/black, with applied lip
10. bottle ---thin, olive green glass
11. stoneware - heavy, crude, ca. 9" diam (pipe?), blotchy brownish glaze

Sheet copper - 12 inch square (roofing?)

17" long heavy iron rod,  $3/4$ " thick

18" long iron piece (balance,?)

one leather shoe heel

one iron wire handle

one brick

two oyster shells

one clam shell

one rib, sawed

Empire Stores Excavation

## CATALOGUE

PIT 26 - #007 (ca. 2 to 0 ft.)

1. slip earthenware - two frag. (pre 1800)
2. porcelain - Celadon bowl frag. - translucent pale green glaze, simple blue decoration along rim and on side.
3. whiteware - blue transfer Chinoiserie pattern
4. stoneware - base of jar, ca. 2 3/4" diam., light brown salt glazed exterior and dk. brown interior glaze
5. earthenware - black glazed (pipe?)

one oyster shell

three lime(Y) pieces - decomposed shell

three frag pipe, 2 with glaze

---

PIT 26 - #009 (ca. 0 ft.)

1. ironstone - plate frag, scalloped rim, blue transfer pattern
2. bottle - olive/black inverted base, very heavy
3. Ovis molar

## Appendix No. 3

## Empire Stores: Artifact Catalog

Michael L. Alterman  
Columbia University  
Department of Anthropology

## Cat. No. 003 - pit 17

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
5. 1 pc. ceramic

## Cat. No. 004 - pit 12 from -0.7' to -1.8'\*(test trench). Lagging running NW by SE begins at ca. 0.7' -(removed)

1. 1 pc. ceramic
2. 1 bottle, green, ridged base  
iron spike, 6" long, 3/4" diam. head

## Cat. No. 006 - pit 12 from -1.8' to -2.3', west side of wall/behind pilings

1. 1 pc. ceramic
2. 1 pc. ceramic
- 2 leather shoe soles
- 2 oyster shells
- 1 fish bone

## Cat. No. 007 - pit 26 from ca. 2' to 0'

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
5. 1 pc. ceramic - pipe?
- 1 oyster shell
- 3 limey pieces - decomposed shell
- 3 pipe frags.

## Cat. No. 008A- pit 2 from ca. +4 to +1'

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 1 pc. ceramic
4. 5 pcs. ceramic
5. 1 pc. ceramic
- 6,7,8. 3 pcs. ceramic
9. 1 pc. ceramic
10. 1 pc. ceramic
11. 1 pc. ceramic
12. 1 pc. ceramic
13. 2 pcs. ceramic
14. 1 pc. ceramic
15. 1 pc. ceramic
16. 1 pc. ceramic

PLEASE RETURN TO  
LIBRARY  
LANDMARKS PRESERVATION  
COMMISSION

---

\*R.S. Solecki note: All elevations take from "0" datum at approximate sea level.



## Cat. No. 008A- Con't.

- 17,18. 2 kaolin pipestems
19. 1 pipe bowl, kaolin, "T D" monogram surrounded by wreath
20. spark plug - "ChampionX"
21. bottle, base, green, textured glass (recent)
22. bottle, base, black glass
23. glass, aqua, frag. of bottle or insulator
24. bottle, aqua, prominent seam on frag.
25. bottle, aqua, neck frag. no seam
26. bottle, 2 frags, of textured clear glass, traces of label
27. bottle, frag. of textured clear glass
28. steel lock, "Octagon" \*
29. iron hook, bolted end, ca. 7" long
30. bottle, aqua, frag. with seam
  - 1 frag. green bottle glass
  - 3 pcs. glazed ceramic pipe or tile
  - 3 lumps of iron
  - 1 oyster shell
  - 1 distal humerus (cut)
  - 1 longbone frag.

## Cat. No. 008B - pit 2, near drainpipe, recently intrusive garbage

- 1,2,3. bottle glass, clear but sooty, 2 oval neck frags
4. bottle, base, green
5. bottle, clear but sooty, round
6. bottle, clear, but sooty, oval base "Half Pint" stamped in glass
7. bottle, clear but sooty, neck with screw top
- brick, half, burned, red underneath, recent structural brick

## Cat. No. 009 - pit 26 at ca. 0'

1. 1 pc. ceramic
2. 1 bottle, olive/black, inverted base, very heavy
3. Ovis molar

## Cat. No. 014 - pit 7, below 2', mostly recent

1. 1 pc. ceramic
2. bottle, aqua, base, ca. 2 3/8" diam
3. bottle, clear, lip frag.
4. bottle, clear, neck, screw top type
5. bottle, clear frag.
  - 2 rusted nails, 3 and 4" long
  - 3 frags. of recent bottle, green, on pc. with screw top still attached
  - 1 frag. of recent amber bottle glass
  - 2 brick frags.
  - 10 oyster shells

---

\* Some material bagged with 008A as pit 2, may have been recently intrusive like the bottle glass of 008B (e.g., "Octagon lock").

## Cat. No. 016 - pit 11

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 4 pcs. ceramic
4. 1 pc. ceramic
- 4 oyster shells and 1 clam shell

## Cat. No. 017A - pit 3 at ca. 0' under building

1. 1 pc. ceramic
2. bottle, inverted base (2½" kick-up), olive green
3. bottle, olive-brown frag.
4. bottle, olive green frag., frosted

## Cat. No. 017B - pit 3 (Feature - bottle "cache" under stone footing/foundation)

1. 1 pc. ceramic
2. 2 pcs. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
5. 1 pc. ceramic
6. 1 pc. ceramic
7. 1 pc. ceramic
8. 1 pc. ceramic
9. 1 pc. ceramic
10. kaolin pipestem, irregularly shaped, tapered
11. kaolin pipestem, oval in section, raised decoration near break near bowl attachment
12. kaolin pipebowl, frag.
13. pickle bottle, over 11" tall, 9 frags. of aqua glass with "gothic panel" decoration.
14. bottle, base, ca. 2½" diam., pontil scar, aqua
15. bottle, base, ca. 2¾" diam., turquoise, embossed "...NY..."
16. bottle, base, ca. 2½" diam., aqua
17. bottle, aqua, embossed "T & W" in large open letters
18. bottle, aqua, embossed "DIX...4..WAL..N.Y. ...", frosted appearance
19. bottle, turquoise, neck with blob top
20. bottle, aqua, neck, blob-top type
21. bottle, 2 frags. of thick olive green glass
22. bottle, 3 frags. of aqua glass, frosted appearance
23. bottle, 3 aqua frags.
24. thin olive green glass
25. thin green glass
26. plate glass, 10 frags., green tinged  
rusted nail, ca. 2¼" long

## Cat. No. 018 - pit 3 at ca. -4'

1. 1 pc. ceramic
2. 2 pcs. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
- 2 iron rods, 3 and 5" long (gauge ca. 10P nail)
- 1 brick
- 5 oyster shells (1 extremely large, 5-6" long)
- 4 clam shells
- 1 pc. coal
- 2 Bos scapulae, sawed (one both ends - "slice")
- 1 thoracic vertebra

Cat. No. 019A - pit 9, at ca. +0' in front of building

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
- pieces of rope

Cat. No. 019A - pit 9 at ca. -2' in front of building

1. 1 pc. ceramic
2. 1 pc. ceramic
- dressed sandstone structural stone frag, ca. 5"

Cat. No. 019C - pit 9 from ca. 1.0' to -1.0' under building

1. 1 pc. ceramic
2. 5 pcs. ceramic
3. 1 pc. ceramic
4. 2 pcs. ceramic
5. 2 frags plate glass, seagreen/blue
- 1 brick, corner piece
- 3 pcs. shoe leather

Cat. No. 019D - pit 9 at ca. -1' under building

10 pieces shoe leather, mostly soles and heels, sewn

Cat. No. 021 - pit 25 at ca. 0'

1. 1 pc. ceramic
2. 2 pcs. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
5. 1 pc. ceramic
6. 1 pc. ceramic
7. 6 bases, champagne type bottles, diam  $3\frac{1}{4}$  to  $3\frac{3}{4}$ " heavy olive/black glass
8. bottle, 7 frags. of live/black glass
9. bottle, neck of "champagne type," olive/black with applied lip
10. bottle, thin, olive green glass
11. 1 pc. ceramic, pipe?
- sheet copper, 12" square (roofing?) (Plate 24)
- 18" long iron piece (balance?) (Plate 24)
- 17" long heavy iron rod,  $\frac{1}{4}$ " thick (Plate 24)
- 1 leather shoe heel
- 1 iron wire handle
- 1 brick
- 2 oyster shells
- 1 clam shell
- 1 rib, sawed

Cat. No. 023 - pit 4 (Feature - bottle cache along stone footing, cf. pit 3, Cat. No. 017B)

1. bottle, aqua, thin and fragile, pontil scar, faint seam, ca.  $2\frac{1}{2}$ " diam.
2. bottle, aqua, heavy, intact, embossed +R. ROBINSON, 376, BOWERY, N.Y." and reverse side "XX" in large open letters,  $2\frac{1}{2}$ " diam, blob top mineral or soda water bottle

## Cat. No. 023 - Con't

3. bottle, turquoise, broken at neck, 2½" diam, embossed, "M.B. & Co." "97 WEST 35th ST N.Y."
4. bottle, emerald green, intact, 2½ diam, embossed "R.C. & T" "NEW YORK"
5. bottle, 3 frags., heavy olive green, base 3" diam., embossed "NEW YORK" "...CLA..."
6. bottle, 5 frags., straight-sided, turquoise (1 frag. short neck and blob top)
7. bottle, turquoise, neck and blob top
8. bottle, 2 frags., (1 neck), olive green
9. bottle, neck, "turned," applied ring below sheared lip, olive green
10. bottle, neck, "turned," applied ring below sheared lip, olive green
11. bottle, pale aqua, base, ca. 2½" diam.
12. bottle, aqua frag.
13. 4 frags. olive-green bottle glass
14. bottle, heavy, olive/black glass, base ca. 4" diam.
15. bottle, olive/black, neck and applied lip
16. 2 frags. olive-green bottle glass, "frosted"

## Cat. No. 024 - pit 4 from below +1'

1. 2 pcs. ceramic
2. 2 pcs. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
5. 1 pc. ceramic
6. 1 pc. ceramic
7. 1 pc. ceramic
8. 1 pc. ceramic
9. 1 pc. ceramic
10. 1 pc. ceramic
11. 1 pc. ceramic
12. 1 pc. ceramic
13. 4 pcs. ceramic
14. 1 pc. ceramic
15. 6 pcs. ceramic
16. 3 pcs. ceramic
17. 1 pc. ceramic
18. 12 pcs. ceramic
19. 1 pc. ceramic
20. 1 pc. ceramic
21. bottle, lt. green, square base
22. bottle, base, ca. 3" diam., olive green
23. bottle, 3 frags., dk. amber (handblown?)
24. lamp glass, chimney, smoked inside
25. bottle, aqua frag.
26. plate glass, 2 frags., aqua tint
27. 1 pc. ceramic, roof tile?
28. plate glass, clear, scratched
29. 1 pc. ceramic
30. 1 pc. ceramic

## Cat. No. 024 - Con't

- 31. 1 pc. ceramic
- 32. 1 flint/jasper frag.
- 33. 2 kaolin pipestems, round
- 34. 1 pc. ceramic
- 35. "baked" plaster (kind of brick?)
- 36. painted wall plaster, 1/2" thick, preserves wood impression
- 37. 2 pcs. ceramic
- 38. 1 pc. ceramic
- 39. 1 pc. ceramic
- 40. 1 pc. ceramic
- 41. bottle, turquoise, ca. 2 1/2" diam., embossed with ornate "R"
- 42. bottle, aqua, base ca. 2 5/8" diam.
- 43. 3 frags. olive-green bottle glass
- 44. olive-green glass with patina
- 16" long cast iron object
- 2 1/2 bricks
- 2 brick frags.
- 2 leather shoe soles
- 2 iron/cinder lumps
- 1 cinder
- 3 oyster shells
- 1 clam shell
- 1 Ovis distal tibia
- 1 rib
- 1 vertebra
- 1 unidentified bone

## Cat. No. 025 - pit 19 from ca. +3.5' to +2.5'

- 1 pc. ceramic
- can opener (church key type), rusted
- iron rod, with wooden insert, ca. 7" long
- iron rod, bolted on one end, ca. 7" long
- unidentified rusted piece
- liquor bottle (recent), marked "1 pint" on side and "Fed. Law forbids sale or reuse of this bottle - made in USA" on bottom
- 1 oyster shell

## Cat. No. 026 - pit 19 from ca. +2.0' to +1.0'

- 1. 1 pc. ceramic
- 2. 1 pc. ceramic
- 3. 2 pcs. ceramic
- 4. 1 pc. ceramic
- 5. porcelain, electrical or plumbing fixture, No. 6 gauge (1 13/16"), marked "MUST....TO..."
- 6. bottle, clear glass with painted label in white and green
- 7. lantern glass, cranberry, "wizard"
- 8. bottle, base frag., amber
- 9. bottle, frag., olive, frosted
- 10. bottle, base, large, clear
- 1 nail, 4" long, round-headed, corroded
- 1 brick piece
- 2 pcs. Bos mandible, green stained

Cat. No. 028 - pit 4 from ca. 1' to 0', north side of trench  
 masses of conglomerated iron, sand, stones, glass, cinders,  
 cement and coal - 4 large pcs., and 14 smaller iron lumps  
 with cinders  
 2 4" spikes/nails  
 21 pcs. of coal (other pcs. discarded at excavation)

Cat. No. 029 - pit 15 from +4.0' to +3.5' above flagstone walk  
 1. 5 pcs. ceramic  
 flagstone walk from +3.5 to +3.0', fragment removed and saved

Cat. No. 029B - pit 15 from +3.0' to +2.0'  
 1 steel (?) U-shaped rod, ½" diam.  
 1 steel (?) rod, circular base attached  
 1 clear glass frag.  
 1 brick, half  
 2 oyster shells  
 3 frags. Bos mandible (s)

Cat. No. 031 - pit 4 at +1', may correlate with pit 3, Cat. No. 017A  
 1. bottle, inverted base, 2" kick-up olive green  
 2. bottle, inverted base, 2½" kick-up, olive brown  
 3. bottle, 12 frags., olive green glass  
 1 rusted iron bar, 4" long, encrusted with cement, debris  
 2 small corroded iron pcs.

Cat. No. 032 - pit 5 from ca. +4' to +2'  
 1. 1 pc. ceramic  
 2. 1 pc. ceramic  
 3. 1 pc. ceramic  
 4. 1 pc. ceramic  
 5. 1 pc. ceramic  
 1 Bos rib, sawed and chopped, also scarred  
 2 large cinders

Cat. No. 033 - pit 5 from +2.5' to +0.5'  
 1. 1 pc. ceramic  
 2. 1 pc. ceramic  
 3. 1 pc. ceramic  
 4. 1 pc. ceramic  
 5. 1 pc. ceramic  
 6. 1 pc. ceramic  
 7. 1 pc. ceramic  
 8. 1 pc. ceramic  
 9. 2 pcs. ceramic  
 10. 1 pc. ceramic  
 11. 1 pc. ceramic, impressed lettering "...Y & C."  
 12. 1 pc. ceramic  
 13. 1 kaolin pipestem, oval, tapered, tip intact  
 14. 1 pc. glazed roof tile  
 15. 1 pc. ceramic  
 16. iron pail ?, tinned, 3 frags.  
 17. metal, key hole plate, painted white  
 18. bottle, neck, olive green, turn mold, applied top

## Cat. No. 033 - Con't

19. bottle, shoulder and neck, sapphire blue, 3 pc. mold, blob top
20. bottle, base, ca. 2½" diam., aqua (medicine, bitters type?)
21. bottle, aqua, embossed "F.BATT..."
  - 1 pc. coal
  - 1 oyster shell
  - 1 Bos radius, sawed both ends

## Cat. No. 035 - pit 5 at ca. 0'

1. bottle, neck, olive green, applied, bevelled lip, no mold marks
2. bottles, 2 champagne type (kick-ups), olive green with blue irridescent patine, 3½" diam. with 3" deep hollow bases
3. bottle, 11 frags. of base of extremely large bottle, ca. 8" diam. olive green with blue irridescent patina
4. bone, 3½" object tapered at one end, made on cut, sawed and polished metapodial, small nail through center (crosswise)
5. 1 pc. ceramic
6. 1 pc. ceramic
7. 1 pc. ceramic
8. 1 pc. ceramic
9. 1 pc. ceramic
10. 1 pc. ceramic
11. 1 pc. ceramic
12. 1 pc. ceramic
- 1 clam shell
- 3 large iron pcs, corroded and unidentifiable (one may be gear pulley)
- 1 Bos pelvis, sawed through acetabulum
- 1 pelvis frag. Ovis?
- 1 Ovis distal humerus
- cast iron pc., ca. 2' long, with rings, curving (horse/carriage related? - "Hame") (Plate 24)

## Cat. No. 037 - pit 14 at ca. +3.5'

iron horseshoe, corroded, 5" long

## Cat. No. 038 - pit 14 at +1.5', sandy fill

1. 1 pc. ceramic
2. 1 pc. ceramic, marked "Ironstone" with crown in blue

## Cat. No. 038B - pit 14 at ca. 0'

10 pcs. shoe leathers, sewn soles and heels

## Cat. No. 040 - pit 24 from +1' to 0', some material recovered in ¼"

mesh screen

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 2 pcs. ceramic
4. 1 pc. ceramic
5. 1 pc. ceramic
6. 1 pc. ceramic
7. 1 pc. ceramic

## Cat. No. 040 - Con't

- 8. 2 pcs. ceramic
- 9. 1 pc. ceramic
- 10. 2 kaolin pipestems
- 11. 1 pc. milk glass (?) - shoulder and neck of bottle, made in 2-piece mold, applied lip ("laid on ring")
  - 1 iron pc., corroded
  - 2 oyster shells
  - 2 clam shells
  - 1 femur, unfused, medium mammal
  - 1 rib bone

## Cat. No. 041 - pit 21 from ca. +3.5' to 1.5'

- 1. 1 pc. ceramic
- 2. 1 pc. ceramic
- 3. 1 pc. ceramic
- 4. 1 pc. ceramic
- 5. 1 pc. ceramic
- 6. 1 pc. ceramic
- 7. 1 pc. ceramic, tile?
- 8. 1 pc. ceramic - bathroom fixture frag.
- 9. 1 kaolin pipestem
  - 1 aqua bottle glass frag.
  - 1 frosted plate glass, bluish
  - 1 olive bottle glass frag.
  - 1 rusted iron rod, ca. 5" long
  - 1 rusted iron nail, ca. 3" long
  - 1 oyster shell
  - 1 Bos scapula, sawed
  - 1 Bos rib, sawed
  - 1 bird bone, green stained

## Cat. No. 042 - pit 21 from ca. +1' to -0.5'

- 1. 1 pc. ceramic
- 2. 1 pc. ceramic
  - 1 corroded nail, ca. 3" long
  - 1 clam shell
  - 1 Bos (?) vertebral spinous process

## Cat. No. 043 - pit 21 below -2'

- 1. 1 pc. ceramic
- 2. 1 pc. ceramic, roof tile?
- 3. brick, corner frag. traces of plaster
- 4. brick, corner frag.
- 5. bottle, pale green, embossed lettering
  - 1 cinder

## Cat. No. 044 - trench 2 from 5.2' to +4.4'

- 1. painted wall plaster, ca. 1/4" thick
- 2. 1 pc. ceramic
- 3. 1 pc. ceramic
- 4. 1 pc. ceramic, marked in red-brown "IM" "EL SM..."



## Cat. No. 044. - Con't

5. 1 pc. ceramic
6. bottle, neck. lt. blue irridescent, sheared top and applied rim
7. bottle, aqua, raised lettering "...AL" one side; "...E" other side, chalky patina
8. bottle, base, ca.  $3\frac{3}{4}$ " diam., aqua, irridescent patina, thin
9. bottle, aqua, square, recessed side panel
10. plate glass, 4 frags., blue tinged, irridescent
11. roof tile, dk. brown glazed
12. roof slate, purple
  - 1 leather shoe sole
  - 1 leather shoe heel
  - 2 iron pcs. (nails?)
  - 1 pc. coal
  - 2 oyster shells
  - 2 Bos ribs, sawed; 1 with vertebral attachment
  - 1 Bos distal tibia, sawed

## Cat. No. 045 - trench 2 from +4.4' to +2.9'

1. painted wall plaster, ca.  $\frac{1}{2}$ " thick
2. 1 pc. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
5. 1 pc. ceramic
6. 2 pcs. ceramic
7. 1 pc. ceramic, tile?
8. 1 pc. ceramic
9. 1 pc. ceramic
10. 3 pcs. ceramic
11. 1 pc. ceramic
12. 1 pc. ceramic
13. 1 pc. ceramic
14. 1 pc. ceramic
15. 1 pc. ceramic
16. 1 kaolin pipestem
17. roof slate, grey
18. bottle, aqua, irridescent with "XX.."
19. bottle, 2 frags. pale green tinge, heavy seams
20. bottle, olive green frag.
21. plate glass, 3 frags.
  - 1 corroded nail, ca. 2" long
  - 1 large iron pc., latch?
  - 1 pc. copper wire
  - 3 leather shoe soles
  - 1 leather pc.
  - 1 cinder
  - 3 oyster shells
  - 1 clam shell
  - 1 Bos scapula, sawed
  - 1 Bos proximal femoral epiphysis
  - 1 Sus humerus
  - 1 Sus scapula
  - 2 bone frags.

## Cat. No. 046 - Trench 2 from +2.9 to +0.3'

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 1 pc. ceramic
4. 3 pcs. ceramic
5. 1 pc. ceramic
6. 1 pc. ceramic
7. 1 pc. ceramic
8. 1 pc. ceramic
9. 1 pc. ceramic
10. 1 pc. ceramic
11. 1 kaolin pipe, oval stem, decorated bowl
12. bottle, heavy, base, turquoise, ca. 5 1/4" diam
13. bottle, "jeroboam", ca. 6" diam., olive/black, 2 frags.,  
one neck, turn mold, asymmetrical applied neck, and one base
14. bottle, aqua, neck with applied rim
15. bottle, aqua, neck with broken rim
16. bottle, hand blown, aqua, base ca. 1 1/4" diam., pontil scar
17. bottle, olive green frag.
18. bottle, olive green frag.
19. bottle, aqua, square, sunken side panel
20. glass frag., pattern molded with horizontal and vertical  
bevels, pontil scar ca. 3 1/8" diam.
21. painted wall plaster, ca. 1/2" diam.
22. 2 pcs. ceramic
23. 1 pc. ceramic
24. roof tile, dk. brown glazed ceramic
25. 1 pc. ceramic  
small leather shoe sole  
2 oyster shells  
1 Bos proximal tibia, sawed both ends  
1 Bos pelvis, cut and sawed  
1 rib, sawed and broken  
1 bird humerus

## Cat. No. 048 - trench 1 from +5.1 to +3.5'

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 1 pc. ceramic
4. pipestem, grey/black ceramic, oval
5. bottle, cobalt, 5 vertical rows of embossed lettering
6. bottle, neck, olive green, "champagne type", turn mold,  
sheared lip, "laid-on" ring beneath shear
7. bottle, olive/black, seam on shoulder from 3 pc. mold  
1 marble slab, ca. 1" thick  
3 nails, 2 1/2 to 3" long, badly corroded  
8 pcs. of shoe(s), sole and heel, attached by copper tacks  
1 cinder  
5 oyster shells  
1 rib, small animal  
1 mandible, right side, Sus

Cat. No. 049 - trench 1 from +3.5' to +2.0'

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 2 pcs. ceramic
4. bottle, octagonal base, aqua
5. kaolin pipestem, burned, raised geometric decoration
  - 1 oyster shell
  - 2 ribs, probably Bos, one with vertebral attachment
  - 1 rib, small mammal
  - 1 bird bone

Cat. No. 050 - trench 1 from +3.5 to +2.0', feature in SE corner

1. 3 pcs. ceramic
2. 1 pc. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
5. bottle, intact, aqua, oval, 7" high, "scar" on shoulder, "Horseshoe flask"
6. bottle, base with conical inverted bottom, heavy olive/black glass
  - frag. bottle glass, olive, irridescent patine
  - twisted wire cable
  - burned/blackened cloth (felt?)
  - 1 pc. coal
  - 1 cinder
  - 2 oyster shells

Cat. No. 051 - pit 16 from -3' to -4'

1. 1 pc. ceramic
2. kaolin pipestem
  - 1 clam shell
  - 1 brick, corner pc.
  - 1 leather shoe sole, sewn
  - iron wire, 2½" long (nail gauge)

Cat. No. 052 - trench 3 from ca. +2.6' to +2.0'

1. 2 pcs. ceramic
2. 1 pc. ceramic
3. 2 pcs. ceramic
4. 1 pc. ceramic
5. 1 pc. ceramic
6. 2 pcs. ceramic
17. 4 pcs. ceramic
18. 1 pc. ceramic
19. 1 pc. ceramic
20. 1 pc. ceramic
21. 1 pc. ceramic, jar or pipe frag.?
22. 7 pcs. ceramic
23. 3 pcs. ceramic
24. 1 pc. ceramic
25. 1 pc. ceramic
26. 1 pc. ceramic
27. 1 pc. ceramic
28. 1 pc. ceramic

## Cat. No. 052 - Con't

29. 1 pc. ceramic
30. 1 pc. ceramic
31. 1 pc. ceramic
32. 1 pc. ceramic
33. 1 pc. ceramic
34. 1 pc. ceramic
35. penny, large cent, corroded copper
36. 2 nails, corroded iron, one clearly square headed
37. 2 roof tiles, frags., glazed brown/black
38. 2 frags., glazed tile(?)
39. drainpipe frag.
40. bottle, base, green/black, ca. 3 3/4" diam.
41. bottle, olive green, bottler's name in relief (...ATER ..MITH)
42. bottle, neck with applied lip, olive green
43. bottle, aqua, 2" diam. base
44. bottle, aqua, neck and lip
45. bottle, aqua, flat bottom oval base and side
46. bottle, aqua, octagonal base with pontil scar
47. bottle, aqua, frag. with raised monogram (?) "I"
48. bottle, aqua, embossed "...E. KY..."
49. bottle, aqua frag.
50. bottle, green frag.
51. bottle, green frag.
52. bottle, olive neck frag.
53. plate glass frag.
54. glass, yellow/gold with patina, embossed "D -J"
55. bottle, brown, neck and applied lip, no seam (turn mold?)
56. 1 pc. ceramic
57. 1 pc. ceramic
58. 1 pc. ceramic
59. 2 pc. ceramic
60. 2 pc. ceramic
61. 1 pc. ceramic
62. 1 pc. ceramic
63. 1 pc. ceramic
64. 1 pc. ceramic
65. 1 pc. ceramic
66. 1 pc. ceramic
67. 1 pc. ceramic
68. 1 pc. ceramic
69. 1 pc. ceramic, transfer pattern in black "NIGHTINGALE"
70. 1 pc. ceramic
71. 1 pc. ceramic, printed with crest and "Imperial Ironstone  
China - Henry Alco..." underneath
72. 1 pc. ceramic
73. 10 pcs. ceramic
74. 3 pcs. ceramic
75. 2 pcs. ceramic
76. 1 pc. ceramic
77. 1 pc. ceramic
78. 1 pc. ceramic
79. 1 pc. ceramic
80. 1 pc. ceramic
81. 1 pc. ceramic
82. 1 pc. ceramic, traces of blue lettering -obverse

## Cat. No. 052 - Con't

- 83. 3 pcs. ceramic
- 84. 2 pcs. ceramic
- 85. 1 pc. ceramic
- 86. 1 pc. ceramic
- 87. 1 pc. ceramic
- 88. 2 pcs. ceramic
- 89. 5 pcs. ceramic
- 90. 1 pc. ceramic
- 91. 1 pc. ceramic
- 92. 1 pc. ceramic
- 93. 1 pc. ceramic
- 94. 1 pc. ceramic
- 95. 1 pc. ceramic
- 96. 1 tile frag.
- 97. mesh - copper (fine) wire screen, circle 3½" diam.
- 98. copper, cut, flat "ear" shaped pc.
- 99. kaolin pipe bowl frag.
- 100. kaolin pipestem, round, tapered
- 101. pipestem, "Peter Dorni," decorated
- 102. pipestem, glazed and corroded, tip intact
- 103. 1 pc. ceramic
- 104. 1 pc. ceramic
- 4 iron rods, one hooked at end, corroded
- 1 iron hinge, corroded
- 1 corroded iron pc.
- 1 frag. black vitrified glass
- 8 shells (4 clam, 4 oyster)
- 1 Ovis metatarsal
- 1 Ovis distal radius
- 2 Ovis femurs, right complete, left proximal end
- 1 Ovis tibia, proximal epiphysis
- 1 phalanges, first
- 1 Bos rib, sawed
- 1 Bos scapula, sawed two places

## Cat. No. 053 - trench 4

- 1. 1 pc. ceramic
- 2. 1 pc. ceramic
- 3. 1 pc. ceramic
- 4. 1 pc. ceramic
- 5. 4 tile (?) frags.
- 6. 2 tile (?) frags.
- 7. brick, plastered and painted white
- 8. bottle, base, light green with patina
- 9. 2 roof slates, grey
- 2 frags. bottle glass, olive green
- 2 rusted iron pcs. (nails?)
- 1 shell
- fragments of burned floorboards, at about +2.9' (2.3' below present warehouse floor), remains of earlier building on site

Cat. No. 054 - trench 1 from +2.0' to +0.7'

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
5. 1 pc. ceramic
6. 1 pc. ceramic
7. bottle, aqua, embossed "DEARBORN.. 82..."
8. 1 pc. ceramic
9. 1 pc. ceramic, roof tile (?)
10. bottle, champagne type, 2" deep "kick-up", olive green
11. bottle, olive green frag., with patina
  - 1 green bottle glass frag.
  - 1 pc. corroded iron, hinge?
  - leather shoe sole and heel with copper tacks
  - 3 oyster shells

Cat. No. 055 - pit 6 at ca. +0'

1. bottle, clear, flat bottomed
2. brick, corner, traces of plaster

Cat. No. 056 - pit 13, below -1.0'

1. 1 pc. ceramic
2. 1 kaolin pipestem
  - 1 clam shell
  - 1 leather strip
  - 1 leather shoe sole, sewn
  - bark from piling
  - 1/2 brick, large and heavy

Cat. No. 080 (Top) see A. Donadeo' notes. Mostly shells.

1. 1 pc. ceramic
2. 1 pc. ceramic
3. 1 pc. ceramic
4. 1 pc. ceramic
5. 1 pc. ceramic
6. 1 pc. ceramic
7. glass, thick frag., molded design, pale green tinge
8. flask, shoulder of bottle, green tinged glass
9. glass, green tinged frag.
10. bottle, oval base, green, "Flavor Guard Bottle," recent
11. glass, clear, base of bottle (?)
12. glass, clear, raised design or insignia
13. 1 pc. ceramic, tile?
  - 5 frags. clear glass
  - 1 pc. corroded iron
  - 12 oyster shells
  - 1 clam shell

Cat. No. (not recorded) - pit 22

- 2 half bricks, one with coarse cement attached

## Appendix No. 4

## Empire Stores: General Notes

Anne Donadeo  
Columbia University  
Department of Anthropology

From pit 11 to pit 26, there has been obvious major disturbance. Plumbing has been installed in the building, and some of the pipes are quite new. There are few artifacts, and modern artifacts are found down at the base of the digging.

The only true feature apparent is a cache under the building in pits 3 and 4 (and possibly some in pit 2). It seems to have been a dump associated with the building of the warehouse. Many of the bottles in the cache were whole or nearly whole and date from 1840 to 1870 on an in-the-field estimation.

External elevations at ground level:

<u>Pit #</u>	<u>Elevation above sea level*</u>
1	4.6'
2	4.5'
3	4.5'
4	4.4'
5	4.3'
6	4.2'
7	4.3'
8	4.3'
9	4.5'
10	4.3'
11	4.4'
12	4.2'
13	4.3'
14	4.4'
15	4.5'
16	4.4'
17	4.4'
18	4.4'

---

\* R.S. Solecki note: Sea level at approximate "0" datum.

19  
20  
21  
22  
23  
24  
25  
26

4.3'  
4.3'  
4.4'  
4.4'  
4.4'  
4.3'  
4.4'  
4.4'



Empire Stores: Daily Notebook; November-December 1978

Anne Donadeo  
Columbia University  
Department of Anthropology

November 15 - night shift

Arrived 3:00 p.m., signed tax forms

Found out that all digging will be outside the wall and under the wall on Main Street. The wooden pilings will be sawed at ca. 1.5' elevation\*, iron rings placed on the stumps and I beams put in between pilings and wall.

Tomorrow they may also open a trench in the street to test experimental grout.

Pit 1 - put gravel in in preparation for welding

Pit 6 - only welding

Pit 17 - sawed pilings

Artifact acquisition numbers for the day:

Cat. No. 061 - pit 1 at -3': soil sample

Cat. No. 062 - pit 17 at -3.4' in front of building:

1. 1 pc. ceramic
2. 2 pcs. oyster shell
3. 5 pcs. brick

Cat. No. 063 - pit 17 at 3' under building:

1. 1 pc. ceramic

Cat. No. 064 - pit 17 at -3.4' under building: soil sample

November 17 - night shift

Arrived 1:30 p.m., pouring down rain causing pumping difficulty in pits

Pit 12 - reopened

---

\*R.S. Solecki note: All elevations taken from "0" datum at approximate sea level.

Pit 6 - reopened; started digging again at -3' under building (originally cut before archaeology started)

Pit 12 - square horizontal beams from old pier; one pc. saved from -3.8

Manhole 5 - cut in street. Two wooden beams, one vertical to just under street and one horizontal at 2'

Pit 17 - now welding

Pit 6 - at base of pit, large angular rocks under building

Pillars closer to the river survive better because they are waterlogged at all times, not subject to tides.

Artifact acquisition numbers for the day:

Cat. No. 065 - pit 12 at -3.8' in front of building:

1. 1 iron horseshoe
2. 1½ leather shoe soles
3. 1 pc. ceramic
4. 6 oyster shells
5. 3 frags. brick

Cat. No. 068 - pit 12 at -3' under building:

1. 1 bottleneck

Cat. No. 069 - manhole 5 at 2'

1. 4 pcs. oyster shell
2. 2 pcs. brick

Cat. No. 070 - pit 17 at -3' under building:

1. 1 pc. ceramic
2. 3 pcs. shell
3. 3 bone frags. : 1 rib, 1 mandible, 1 longbone

Cat. No. 071 - pit 6 at 3.4' under building:

1. 1 pc. brick

Cat. No. 072 - pit 12 at 0' under wall: soil sample (probably decomposed shell)

Cat. No. 073 - pit 6 at 2.5' under building:

1. 2 pcs. brick
2. 13 pcs. oyster shell
3. 2 pcs. ceramic
4. 1 pc. glass

November 20 - night shift

In pit 11 large rocks wedged between horizontal and vertical beams at -3.6'

Work rosters received from Eddy: Laborers Union, moving dirt; Dockbuilders

Union, any woodwork; and Engineers Union, anything with a motor.

Artifact acquisition numbers for the day:

Cat. No. 074 - pit 6 at 0' under building:

1. 3 pcs. glass - aquamarine
2. 1 pc. glass - greenish brown
3. 1 bone frag.
4. 1 leather shoe sole
5. 1 oyster shell
6. 4 pcs. brick
7. 5 pcs. ceramic

Cat. No. 075 - pit 26 from 4.5' to 2' in front of building:

1. 7 pcs. ceramic
2. 2 oyster shells
3. 1 pc. bone

Cat. No. 076 - pit 11 at -3.6' in front of building:

1. 3 oyster shells
2. 1 pc. brick

November 21 - night shift

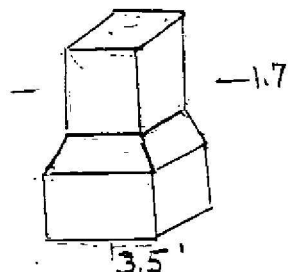
Pit 26 - many large rocks at water level

Pit 6 - cement poured in directly under wall for about 6 feet.

All welding work, will eventually be encased in cement.

Three piling sections saved from pit 11.

Manhole 5 - one base of wooden beam found at 2', not saved.



Artifact acquisition numbers for the day:

Cat. No. 077 - pit 26 from 4' to 0' under building:

1. 1 frag. ceramic bowl
2. 1 porcelain marble
3. 1 pc. ceramic pipeline
4. 1 pc. ceramic base

Cat. No. 078 - pit 2 from 1.5' to 0' in front of building:

1. 9 oyster shells
2. 1 pc. glass
3. 1 iron nail
4. 1 frag. brick

- Cat. No. 079 - pit 18 at 0' under wall: Soil sample  
 Cat. No. 081 - pit 2 from 0' to -1 under building:  
     1. 10 pcs. shell  
     2. 2 pcs. glass (one base)  
     3. 2 fgs. ceramic  
 Cat. No. 082 - pit 26 from 0' to -2 in front of building:  
     1. 1 pc. brick  
     2. 1 pc. ceramic plate

November 22 - night shift

Pit 2 pilings still relatively intact though fairly far from the river.

Water Street used to be the shoreline.

Pit 2 - no artifacts behind the second row of pilings

Pit 18 - no artifacts after second row of pilings

Pit 26 - all finds are on the river side of the pit

Artifact acquisition numbers for the day:

- Cat. No. 083 - pit 26 from -2' to -3' in front of building:  
     1. 2 pcs. drainpipe  
     2. 3 pcs. brick  
     3. 1 aluminum fishfork  
     4. 4 pcs. ceramic  
 Cat. No. 084 - pit 13 from -1' to -3' under building:  
     1. 2 pcs. brick  
 Cat. No. 085A - pit 2 from -3' to -3.5' under building:  
     1. 2 clam shells  
     2. 5 oyster shells  
     3. 1 section longbone (cow), sawed  
     4. 1 frag. bone  
     5. 1 green glass bottle missing only lip, embossed:  
         M. B. & Co.  
         97 West 35th Street  
         N.Y.  
     6. 1 complete glass bottle, green, embossed: T. & W.  
     7. 1 brown glass base  
     8. 1 pc. green glazed ceramic  
 Cat. No. 085B - pit 2 from -3' to -3.5' under building:  
     1. 1 pc. ceramic jug  
     2. 1 jug missing neck and part of side, "incised" on  
         shoulder: D.L. Ormesby  
     3. 2 oyster shells  
     4. 2 pcs. glass  
     5. 2 pcs. brick  
 Cat. No. 085C - pit 2 from -3' to -3.5' under building:  
     1. 2 leather shoe soles

November 24 - night shift

Opened pit 11 - modern artifacts under cobbles (pull top from soda can, beer bottle frags.)

Pit 11 - at 4' some stone flagging, not covering whole pit, about 3" thick.

## Artifact acquisition numbers for the day:

- Cat. No. 086 - pit 2 at -2' under building:
  - 1. 1 pc. ceramic
- Cat. No. 087 - pit 26 from -2.5' to -3' under building:
  - 1. 1 pc. ceramic
  - 2. 4 pcs. brick
- Cat. No. 088 - pit 18 at -3' under building:
  - 1. 2 pcs. brick
- Cat. No. 089A- pit 7 from -1' to -3' under building:
  - 1. 1 pc. ceramic
  - 2. 1 oyster shell
- Cat. No. 089B- pit 7 from -1' to -3' under building
  - 1. 1 pc. brick
  - 2. 4 pcs. ceramic
  - 3. 3 oyster shells
- Cat. No. 090 - pit 18 at -2' in front of building
  - 1. 1 pc. grey English flint
- Cat. No. 091 - pit 11 at 3' under building
  - 1. 1 iron nut/bolt
  - 2. 1 pc. brick
  - 3. 1 pc. glass
  - 4. 1 pc. leather shoe sole
  - 5. 1 shell

November 27 - day shift

Opened pit 22 - no artifacts until 2' elevation.

Pits 1, 2, 6, 7, 8, 12, 17, 18, 26 - finished digging

## Artifact acquisition numbers for the day:

- Cat. No. 092 - pit 22 from 2' to 0' in front of building:
  - 1. 1 iron bolt
  - 2. 1 shell
  - 3. 2 pcs. ceramic (one is knobbed lid)
  - 4. 2 pcs. bone

Cat. No. 093 - pit 3 from 3.5' to 0':

1. 1 Champion sparkplug
2. 1 pc. kaolin pipestem
3. 6 pcs. glass
4. 3 teeth (cow)
5. 2 frags. mandible, one with three teeth (cow)
6. 1 rib frag.
7. 1 section longbone, sawed
8. 2 pcs. shell
9. 6 pcs. ceramic
10. 1 iron bolt
11. 2 pcs. drainpipe

November 28 - day shift

Cat. No. 094 - 3 pcs. Very thin clear glass, no distinguishing marks;  
was discarded on site by mistake)

Pits 16 and 22 nearly sterile

Pit 26 - practically filled with water without pumps; takes ca. 1 hour  
each morning to pump it out.

Photos taken of pits 3-2-1, 16, 22

Pit 22 - log running horizontal, E-W across pit at -2'

Pit 16 - horizontal log running N-S across pit at 0.5'; one end rotted

General stratigraphy: 3 to 4" of soil overburden, clayey orange sand  
fill to water level, then clayey grey sand to bottom of trench. This  
is slightly variable from pit to pit, but is reasonably predictable.

Artifact acquisition number:

Cat. No. 095 - pit 16 from 1.5' to 0' in front of building:

1. 3 pcs. ceramic
2. 1 frag. bone
3. 1 shell
4. 1 pc. brick

November 29 - day shift

Artifact acquisition numbers for the day:

Cat. No. 096 - pit 3 from 2.4' to 0' under building:

1. 1 iron bolt
2. 1 ceramic lid

3. 1 iron rod with loop

4. 4 pcs. glass

5. 5 pcs. ceramic

Cat. No. 097A-pit 3 from 0' to -3' under building:

1. 1 pc. lead sheet

2. 2 pcs. bone

3. 2 pcs. glass

4. 2 pcs. ceramic jug neck

5. 4 oyster shells

6. 3 pcs. ceramic

7. 3 frags. brick

Cat. No. 097B-pit 3 at 2' under building, directly under "concrete" footing, cache:

1. 3 pcs. leather

2. 5 pcs. ceramic

3. 1 pc. longbone, sawed

4. 5 whole bottles

5. 72 frags. glass

6. 1 lump bailing wire and glass

Cat. Nos. 096, 097A, and 097B are part of the same cache; many of the glass fragments are from whole or almost whole bottles which were crushed in digging. This seems to be a true feature associated with the footing of the building. Some pit 2 finds may be part of the cache also.

Cat. No. 098 - pit 3 at -3.5' under building:

1. 2 frags. glass

Cat. No. 099 - pit 16 at -3.2' in front of building:

1. 1 frag. longbone, cow

November 30 - day shift

Acquisition numbers for the day:

Cat. No. 100 - pit 9 at 0' under building:

1. 1 bone

2. 1 shell

3. 1 beer can

4. 1 pc. ceramic

Cat No. 101 - pit 25 from 3' to 1' in front of building:

1. 1 vertebra

2. 1 rolled copper sheet

3. 1 pc. ceramic

4. 1 10" iron nail

5. 1 brick frag.

One pc. scored sandstone, as if quarried and/or dressed lost in transit, but one pc. of same saved in Cat. No. 019B.

December 1 - day shift

(FSD3 collected)

"Concrete" is a limestone concrete with pebbles, not true modern concrete which came into use ca. 1900.

Ash lens in SW corner of pit 4 at 3.6'; dump, burning did not take place in pit.

Acquisition numbers for the day: .

Cat. No. 102 - pit 9 at -3.5' under building.

1. 9 pc. ceramic
2. 1 frag. mandible

Cat. No. 103 - pit 4 at 3.6' in SW corner of pit in ash lens:

1. 2 pcs. slag (one with ceramic inclusions)
2. 2 bricks
3. 29 pcs. ceramic
4. 4 glass bases
5. 14 frags. glass
6. 1 pottery base
7. 1 frag. bone

Cat. No. 104 - pit 4 from 0.5' to -3' in front of building:

1. 5 oyster shells
2. 1 pc. ceramic
3. 1 pc. glass
4. 1 pc. white ceramic
5. 1 brass tube
6. 1 pc. crockery
7. 1 frag. vertebra

Cat. No. 105 - pit 25 at -1.5 in front of building:

1. 1 glass base
2. 1 pc. ceramic
3. 2 frags. glass

December 4 - night shift

One pc. pile saved from pit 19; has original axe marks.

In pit 19 at 3', two modern pipes, one cast iron, one copper, running E-W

Acquisition numbers for the day:

Cat. No. 106 - pit 19 from 1' to -3' in front of building:

1. 7 pcs. ceramic
2. 1 pc. brick



- 3. 1 glass base
- 4. 3 frags. glass
- 5. 1 iron nail
- 6. 4 oyster shells

Cat. No. 107 - pit 4 from -2.5' to -3' under building:

- 1. 1 pc. steel
- 2. 1 clay pipestem
- 3. 6 pcs. ceramic

Cat. No. 108 - pit 25 at -2.5' under building:

- 1. 2 pcs. ceramic

December 5 - night shift

Acquisition numbers for the day:

Cat. No. 109 - pit 19 at -3.5' in front of building:

- 1. 1 pc. ceramic

Cat. No. 110 - pit 15 at -1' in front of building:

- 1. 1 pc. ceramic

"Concrete" footing impinging on area in front of building, so digging going very slowly.

December 6 - night shift

Pit 23 - cast iron pipe along N wall of trench under cobbles; modern

More disturbance and fewer artifacts from pit 11 through pit 26. Modern pipes have been put in and new fill.

Acquisition numbers for the day:

Cat. No. 111 - pit 23 at 0.5' under building:

- 1. 1 Delmonte tin can
- 2. 4 pcs. ceramic
- 3. 1 glass base - liquor bottle, modern

Cat. No. 112 - pit 10 at -3.5' in front of building:

- 1. 4 pcs. bone
- 2. 14 pcs. ceramic (may be from one bowl)
- 3. 2 clay pipestems
- 4. 1 large iron nail

December 7 - night shift

Ash lens in pit 5, no artifacts; from 2' to 1.5' in center of W wall, about 1.5' wide, running ca. 2' under building.

Acquisition numbers for the day:

- Cat. No. 113 - pit 21 from 3.8' to 1' in front of building:
1. 2 large iron nails
  2. 7 frags. ceramic
  3. 2 frags. cow rib
- Cat. No. 114 - pit 23 at -3.5' under building:
1. 1 clump iron

December 8 - night shift

Night shift will end December 13; job should end December 15.

Acquisition number for the day:

- Cat. No. 115 - pit 14 at -2' under building:
1. 1 pc. ceramic
  2. 1 leather shosole

December 11 - day shift

Used  $\frac{1}{4}$  inch screen; found that it did not yield significantly more finds than without screen. The major difference was in very small fragments of brick, but even in this case, numbers were not greatly increased.

Amy Davis from the "Brooklyn Heights News" took pictures of the building and of me at the screen. Interviewed me about the project. She doesn't know if it will be published.

Acquisition number for the day:

- Cat. No. 116 - pit 14 from 3' to 0' under building; wet screened with  $\frac{1}{4}$ " screen:
1. 7 frags. brick
  2. 3 pcs. ceramic
  3. 1 pc. leather

December 12 - night shift

Mostly cleaning up in bottom and backs of pits going on.

Acquisition number for the day:

- Cat. No. 117 - pit 21 from 1' to 0.5' in front of building; wet screened with  $\frac{1}{4}$ " screen:
1. 3 frags. brick
  2. 2 iron nails

- 3. 4 pcs. ceramic
- 4. 1 frag. bone
- 5. 1 pc. clay pipestem

December 13 - night shift

Last day; only clean up and preparation for welding going on.

No finds.

December 14

Moved artifacts to N.Y. State Maritime Museum  
171 John Street  
New York, N.Y.

## Appendix No. 5

## Empire Stores: Correlation of Pit numbers with artifact sheet numbers

Anne Donadeo  
Columbia University  
Department of Anthropology

Pit 1: (dug as a test trench before archaeology started; no artifacts)

Pit 2: In front of building:

Cat. No. 008A from 4' to 1.5'

Cat. No. 008B from drain area

Cat. No. 078 from 1.5' to 0'

Under building:

Cat. No. 081 from 0' to -1'

Cat. No. 086 at -2'

Cat. No. 085A,B,C from -3' to -3.5'

Pit 3: In front of building:

Cat. No. 093 from 3.5' to 0'

Cat. No. 017A at 0'

Cat. No. 017B: (Feature)

Under wall:

Cat. No. 096 from 2.4' to 0'

Under building:

Cat. No. 097B from 2' to 0' (Feature)

Cat. No. 097A from 0' to -3'

Cat. No. 098 at -3.5'

Cat. No. 018 at -4'

Pit 4: In front of building:

Cat. No. 103 from 3.6' to 2.6' (Feature)

Cat. No. 104 from 0.5' to -3'

Cat. No. 023B at 3'

Under building:

East side of pit:

Cat. No. 024 from 1' to 0' (part of Feature in pit3)

Cat. No. 029 from -2.5' to -3'

Cat. No. 107 from -2.5' to -3'

West side of pit:

Cat. No. 028 from 1' to 0'

Cat. No. 031 from 1' to 0'

Pit 5: In front of building:

Cat. No. 032 from 3.5' to 2.5' (ash lens on north side of pit)

Cat. No. 033 from 2.5' to 0.5'

Under building:

Cat. No. 035 at 0'

Pit 6: (No artifacts in front of building)

## Under building:

Cat. No. 071 at 3.4'  
 Cat. No. 073 at 2.5'  
 Cat. No. 074 at 0'  
 Cat. No. 055 at 0'

## Pit 7: In front of building:

Cat. No. 014 from 2' to -3.5'

## Under building:

Cat. No. 089A,B from 1' to -3'

## Pit 8: (Dug as test trench before archaeology started; no artifacts).

## Pit 9: In front of building:

Cat. No. 019A at 0'  
 Cat. No. 019B from -2' to -3.5'

## Under wall:

Cat. No. 019C from 1' to -1'  
 Cat. No. 022 from 0' to -1"  
 Cat. No. 019D at -1'

## Under building:

Cat. No. 100 at 0'  
 Cat. No. 102 at -3.5'

## Pit 10: In front of building:

Cat. No. 112 at -3.5'

## Under building: (no artifacts)

## Pit 11: In front of building:

Cat. No. 076 at -3.6'

## Under building:

Cat. No. 091 at 3'  
 Cat. No. 015 at -3'  
 Cat. No. 016 at -5'

## Pit 12: In front of building:

Cat. No. 004 from 0.7' to -1.8'  
 Cat. No. 065 at -3.8'

## Under building:

Cat. No. 006 from -1.8' to -2.3'  
 Cat. No. 068 at -3'

## Pit 13:

Cat. No. 056 from -1.0' to -3.5'

## Pit 14: In front of building:

Cat. No. 037 at 3.5'  
 Cat. No. 038 at 1.5'

## Under building:

Cat. No. 116 from 3' to 0' (wet screened ¾")  
 Cat. No. 115 at -2'

- Pit 15: In front of building:  
           Cat. No. 029 from 4' to -3.5'  
           Under building: (no artifacts)
- Pit 16: In front of building:  
           Cat. No. 095 from 1.5' to 0'  
           Cat. No. 099 at 3.2'  
           Cat. No. 051 from -3' to -4'  
           Under building: (no artifacts)
- Pit 17: In front of building:  
           Cat. No. 062 at -3.4'  
           Under Building:  
               Cat. No. 063 at 3'  
               Cat. No. 003 at -2'  
               Cat. No. 070 at -3'
- Pit 18: In front of building:  
           Cat. No. 080 top  
           Cat. No. 090 at -2'  
           Under building:  
               Cat. No. 084 from -1' to -3'  
               Cat. No. 088 at -3'
- Pit 19: In front of building:  
           Cat. No. 025 from 3.5' to -2.5'  
           Cat. No. 026 from 2' to 1'  
           Cat. No. 106 from 1' to -3'  
           Cat. No. 109 at -3.5'  
           Under building: (no artifacts)
- Pit 20: In front of building:  
           Cat. No. 036 at -2'  
           Under building: (no artifacts)
- Pit 21: In front of building:  
           Cat. No. 041 from 3.5' to 1.5'  
           Cat. No. 113 from 3.8' to 1'  
           Cat. No. 117 from 1' to 0.5' (wet screened ¼")  
           Cat. No. 042 from 1' to 0.5'  
           Cat. No. 043 at -2' (wet screened ½")  
           Under building: (no artifacts)
- Pit 22: In front of building:  
           Cat. No. 092 from 2' to 0'  
           Under building: (no artifacts)
- Pit 23: In front of building: (no artifacts)  
           Under building:  
               Cat. No. 111 at 0.5'  
               Cat. No. 114 at -3.5'

Pit 24: In front of building:

Cat. No. 040 from 1' to 0' (wet screened  $\frac{1}{4}$ ")

Under building: (no artifacts)

Pit 25: In front of building:

Cat. No. 101 from 3' to 1'

Cat. No. 020 at 2'

Cat. No. 021 at 0' (two bags)

Cat. No. 105 at -1.5'

Under building:

Cat. No. 027 at -2'

Cat. No. 108 at -2.5'

Pit 26: In front of building:

Cat. No. 075 from 4' to 2'

Cat. No. 007 from 2' to 0'

Cat. No. 009 at 0'

Cat. No. 082 from 0' to -2'

Cat. No. 083 from -2' to -3'

Cat. No. 013 at -4'

Under building:

Cat. No. 077 from 3' to 0'

Cat. No. 087 from -2.5' to -3'

## Appendix No. 6

## Empire Stores: Artifact Catalog

Anne Donadeo  
Columbia University  
Department of Anthropology

Artifact code example: ES P2.061-1 =

Empire Stores Pit 2 acquisition no. Cat. No. 061 artifact no. 1

---

(Elevations relative to sea level)

Cat. No. 061 - pit 1 at -3.8 under building: soil sample

Cat. No. 062 - pit 17 at -3.4' in front of building:

(062-1) 1 pc. ceramic  
2 oyster shells  
5 pcs. brick

Cat. No. 063 - pit 17 at 3' under building:

(063-1) 1 pc. ceramic

Cat. No. 064 - pit 17 at -3.4' under building: soil sample

Cat. No. 065 - pit 12 at -3.8' in front of building:

3 frags. leather shoe soles  
6 oyster shells  
3 frags. brick  
1 iron horseshoe

Cat. No. 068 - pit 12 at -3' under building:

(068-1) 1 bottleneck, dark brown glass, turnmold, hand applied lip

Cat. No. 069 - Manhole 5 at 2':

4 pcs. oyster shell  
2 pcs. brick

Cat. No. 070 - pit 17 at -3' under building:

(070-1) 1 pc. ceramic  
3 bone frags: 1 rib, 1 mandible, 1 longbone  
2 clamshells

Cat. No. 071 - pit 6 at 3.4' under building:

1 frag. brick

Cat. No. 072 - pit 12 at 0' under building: soil sample



Cat. No. 073 - pit 6 at 2.5' under building:

- (073-1) 1 pc. ceramic
- (073-2) 1 pc. ceramic
- 2 pcs. brick
- 13 oyster shells

Cat. No. 074 - pit 6 at 0' under building:

- (074-1) 1 pc. ceramic
- (074-2) 1 pc. ceramic
- (074-3) 4 pcs. ceramic
- (074-4) 5 frags. aqua glass (one bottle) embossed; (incomplete)  
M.B. &  
145  
EST 35th ST.  
N.Y.  
1861
- (074-5) 1 frag. green-brown glass base
- 1 frag. leather shoe sole
- 1 oyster shell
- 1 frag. metapodial - pig

Cat. No. 075 - pit 26 from 4.5' to 2' in front of building:

- (075-1) 1 frag. plaster, painted black
- (075-2) 1 pc. ceramic
- (075-3) 5 pcs. ceramic
- 2 oyster shells
- 1 pc. proximal humerus, medium sized mammal

Cat. No. 076 - pit 11 at -3.6' in front of building:

- 3 oyster shells
- 1 pc. brick

Cat. No. 077 - pit 26 from 3' to 0' under building:

- (077-1) 1 pc. ceramic
- (077-2) 1 pc. ceramic tile
- (077-3) 1 pc. ceramic
- (077-4) 1 marble

Cat. No. 078 - pit 2 from 1.5' to 0' in front of building:

- (078-1) 1 pc. clear glass, ribbed
- 9 oyster shells
- 1 iron nail

Cat. No. 079 - pit 18 at 0' under wall: soil sample

Cat. No. 081 - pit 2 from 0' to 1' under building:

- (081-1) 1 pc. clear glass
- (081-2) 1 pc. ceramic
- (081-3) 1 clear glass oval base, embossed: 5 , in center of  
base, with two embossed lines up one side
- 10 pcs. oyster shell

Cat. No. 082 - pit 26 from 0' to -2' in front of building:

- (082-1) 1 pc. ceramic
- 1 pc. brick

Cat. No. 083 - pit 26 from -2' to -3' in front of building:

- (083-1) 1 pc. ceramic
- (083-2) 1 pc. ceramic
- (083-3) 1 pc. ceramic
- (083-4) 1 pc. ceramic
- (083-5) 1 modern tin fishfork

Cat. No. 084 - pit 18 from -1' to -3' under building:

- 2 pcs. brick

Cat. No. 085A - pit 2 from -3' to -3.5' under building:

- (085A-1) 1 pc. ceramic
- (085A-2) 1 green-brown glass base, flat edge on base
- (085A-3) 1 complete green glass bottle, poss. 1860-1870,  
embossed: T & W
- (085A-4) 1 aqua glass bottle missing only lip, ca. 1860, embossed:  
M.B. & CO.  
97 WEST 35th ST.  
N Y
- 2 clam shells
- 5 frags. oyster shell
- 1 section longbone, sawed, large mammal
- 1 frag. humerus, medium mammal

Cat. No. 085B - pit 2 from -3' to -3.5' under building:

- (085B-1) 1 pc. aqua glass
- (085B-2) 1 pc. green glass bottle
- (085B-3) 1 pc. ceramic
- (085B-4) 1 pc. ceramic
- 2 pcs. brick, one with plaster adhering
- 2 oyster shells

Cat. No. 085C - pit 2 from -3' to -3.5' under building:

- 2 leather shoe soles

Cat. No. 086 - pit 2 at -2' under building:

- (086-1) 2 pcs. ceramic

Cat. No. 087 - pit 26 from -2.5' to -3' under building:

- (087-1) 1 pc. ceramic
- 4 pcs. brick

Cat. No. 088 - pit 18 at -3' under building:

- 2 pcs. brick

Cat. No. 089A - pit 7 from -1' to -3' under building:

(089A-1,2,5,7,8,9) 6 pcs. ceramic

(089A-3,4) 2 pcs. ceramic

(089A-6) 1 pc. ceramic

(089A-10) 1 pc. ceramic

15 oyster shells

3 pcs. leather

1 clam shell

2 pcs. brick

Cat. No. 089B - pit 7 from -1' to -3' under building:

(089B-1) 1 pc. ceramic

(089B-2,4) 2 pcs. ceramic

(089B-3) 1 pc. ceramic

1 pc. brick

3 oyster shells

Cat. No. 090 - pit 18 at -2' in front of building:

1 pc. grey flint (English?)

Cat. No. 091 - pit 11 at 3' under building:

(091-1) 1 pc. glass base, embossed bumps and no. 89 on bottom,  
(probably modern soda bottle)

1 iron bolt/nut

1 cockle shell

1 pc. leather shoesole

Cat. No. 092 - pit 22 from 2' to 0' in front of building:

(092-1) 1 pc. ceramic

(092-2) 1 pc. ceramic

(092-3) 1 pc. ceramic

1 iron bolt

1 pc. clamshell

1 pc. longbone, sawed, stained green

1 pc. mandible, stained green

Cat. No. 093 - pit 3 from 3.5' to 0' in front of building:

(093-1) 1 frag. green glass base, rounded base with kickup

(093-2) 1 clear glass base, embossed bumps, no. 's 82-3291 and  
G76 (probably modern soda bottle)

(093-3) 1 pc. ceramic

(093-4) 1 pc. ceramic

(093-5) 1 pc. clear glass, painted red with word CONTENTS in white

(093-6) 1 pc. ceramic

(093-7) 1 pc. ceramic

(093-8) 1 frag. kaolin pipestem

(093-9) 1 pc. ceramic

(093-10) 1 pc. ceramic

(093-11) 1 dark aqua glass base, possibly not a round bottle

(093-12) 1 pc. green glass, from large bottle  
 (093-13) 1 pc. clear glass  
     1 clamshell  
     1 oyster shell  
     1 iron bolt  
     1 Champion sparkplug  
     2 pcs. mandible, 1 with three teeth (cow)  
     3 teeth (cow)  
     1 frag. humerus, sawed, cow.  
     1 frag. rib, large mammal  
     1 frag. longbone, sawed, cow.  
     1 frag. vertebra  
     1 pc. ceramic  
     1 frag. rooftopile

Cat. No. 095 - pit 16 from 1.5' to 0' in front of building:

(095-1,2,3) 3 pcs. ceramic  
     1 pc. brick  
     1 pc. shell  
     1 longbone frag. medium sized mammal

Cat. No. 096 - pit 3 from 2.4' to 0' under building:

(096-1) 1 green glass base, rounded with kickup  
 (096-2,11) 2 pcs. ceramic  
 (096-3) 1 pc. ceramic  
 (096-4,5) 2 frags. aqua glass  
 (096-6) 1 frag. aqua bottle, embossed (incomplete): TERS  
 (096-7) 1 pc. ceramic  
 (096-8) 1 frag. green glass bottle  
 (096-9) 1 pc. ceramic  
 (096-10) 1 pc. ceramic

Cat. No. 097A - pit 3 from 0' to -3' under building, in cache with 097B

(097A-1,2) 2 pcs. clear glass  
 (097A-3) 2 pcs. ceramic  
 (097A-4) 1 pc. ceramic  
 (097A-5,6) 2 pcs. ceramic  
     1 pc. lead sheet  
     3 pcs. brick  
     1 pc. longbone, pig  
     1 pc. longbone, sawed, large mammal

Cat. No. 097B - pit 3 from 2' to 0' under building 3.5' in, directly under "concrete," in cache with 097A

(097B-1,32) 2 pcs. ceramic  
 (097B-2,3,4,5) 4 frags. green glass bottle(s)  
 (097B-6,7,8) 10 frags. square green glass bottle, embossed vertically, one word/side:  
     TOWNSEND'S  
     SARSPARILLA  
     NY  
 (097B-9) 1 frag. green-blue glass

- (097B-10,63) 2 frags. clear glass
- (097B-11,41) 2 pcs. rectangular blue-green glass bottle
- (097B-12) 1 frag. green-brown glass base
- (097B-13) 1 frag. dark green-brown glass base, iron stained
- (097B-14,42) 2 frags. aqua glass bottle, embossed:

ALEX EAGLE  
1860

#### MINERAL WATER

- (097B-16) 1 frag. blue-green bottle glass, embossed (incomplete):  
E & M
- (097B-18) 1 frag. blue-green bottle glass, embossed (incomplete):  
C.WH

#### NEW YOR

- (097B-21,31,35,36,37,44,45,48,49) 9 frags. aqua bottle glass
- (097B-22) 1 frag. side of blue-green "cathedral" bottle (other pcs. of same bottle in other pit 3 acquisition groups)
- (097B-23) 1 neck/lip green brown glass bottle, hand applied lip
- (097B-24) 1 pc. green-brown bottle, embossed (incomplete):

HAA

- (097B-25) 1 aqua glass folded bottle lip
- (097B-27) 1 neck/lip green-brown bottle, double hand applied lip, turnmold

- (097B-28) 1 pc. ceramic
- (097B-29) 2 pcs. ceramic

- (097B-30,43) 2 pcs. thin green bottle glass

- (097B-34) 1 pc. blue-green glass bottle, embossed (incomplete):  
R.E.

- (097B-38,40,46,47) 5 frags. blue-green bottle glass

- (097B-39) 1 frag. aqua glass bottle base

- (097B-50) 1 frag. blue-green bottle glass, embossed with part of a letter

- (097B-54) 1 base green glass bottle, flattened kickup

- (097B-55,56) 2 frags. green glass base, kickup

- (097B-57) 1 frag. green glass bottleneck, turnmold

- (097B-58) 1 base blue-green glass bottle, flattened kickup

- (097B-59) 1 medicine/perfume clear glass bottle, flared lip, flat bottom

- (097B-60) 1 base green-brown glass bottle, kickup

- (097B-61) 1 aqua bottleneck, double hand applied lip

- (097B-62) 1 base green glass bottle, 2 seams up sides, embossed (incomplete):

376

BOWERY, N.Y.

- (097B-64) 1 aqua glass bottle, folded lip, turnmold, 2 seams up sides, embossed:

M.B. & CO.

97 WEST 35th ST.

N.Y.

- (097B-65) 1 green glass bottle, folded lip, 2 seams up sides, embossed:

ALEX EAGLE

MINERAL WATER

- (097B-66) 1 green glass bottle, folded lip, 2 seams up sides, turnmold, embossed:  
J & A DEARBORN  
NEW-YORK  
XXX (on back)
- (097B-67) 1 aqua glass bottle, foldedlip, turnmold, 2 seams up sides, embossed:  
T & W  
3 frags. green-brown glass  
1 frag. aqua glass  
1 frag. blue-green glass  
3 pcs. leather  
1 lump bailing wire and glass

Cat. No. 098 - pit 3 at -3.5' under building:  
1 frag. longbone  
1 frag. green-brown glass  
1 frag. clear glass  
1 frag. blue-green glass

Cat. No. 099 - pit 16 at -3.2' in front of building:  
1 frag. longbone, cow, sawed)

Cat. No. 100 - pit 9 at 0' under building:  
(100-1) 1 green-brown glass base, conical pickup  
(100-2) 1 pc. ceramic  
(100-3) 1 frag. kaolin pipestem  
1 frag. bone  
1 oyster shell  
a aluminum Schaefer beer can

Cat. No. 101 - pit 25 from 3' to 1' in front of building:  
(101-1) 1 pc. ceramic  
1 frag. sacrum, large mammal  
1 pc. brick  
1 10" iron spike  
1 rolled copper sheet

Cat. No. 102 - pit 9 at -3.5' under building:  
(102-1) 1 pc. ceramic  
(102-2) 1 pc. ceramic  
(102-3) 1 pc. ceramic  
(102-4) 1 pc. ceramic  
(102-5) 1 pc. ceramic  
(102-6) 1 pc. ceramic  
(102-7,8) 2 pcs. ceramic  
(102-9) 1 pc. ceramic  
1 pc. mandible

Cat. No. 103 - pit 4 from 3.6' to 2.6' in ash lens in SW corner of pit:  
(103-1) 6 pcs. from ceramic plate (nearly complete), impressed mark on base:  
J. EDWARDS & CO  
DELAWARE

- (103-2) 14 pcs. from ceramic plate, blue printing on face of plate (incomplete):  
 ROBERTS & CO  
 PIE PLATE  
 27 HUDSO  
 BROOKLYN
- (103-3) 1 pc. ceramic
- (103-4) 1 green glass bottle base, conical kickup with exterior embossing around kickup:  
 . RICKETTS . BRISTOL
- (103-5) 1 base green bottle, high conical kickup
- (103-6) 1 pc. ceramic
- (103-7,13) 3 pcs. ceramic
- (103-8) 1 frag. aqua glass "medicine" bottle neck/lip, rolled lip, 2" mouth
- (103-9) 1 pc. ceramic
- (103-10) 1 pc. ceramic
- (103-11) 1 pc. ceramic
- (103-12) 1 pc. ceramic
- (103-14) 1 pc. ceramic
- (103-15) 1 pc. ceramic
- (103-16) 1 aqua glass "medicine" bottle base
- (103-17) 1 frag. hemispherical aqua glass base  
 1 pc. slag  
 1 pc. iron with ceramic inclusion  
 1 frag. rib  
 1 pc. coal  
 1 thin flat pc. glass  
 4 pcs. clear glass  
 1 pc. aqua glass  
 3 pcs. green glass  
 2 pcs. green-brown glass  
 1 pc. brown glass

Cat. No. 104 - pit 4 from 0.5' to -3' in front of building:

- (104-1) 1 pc. ceramic
- (104-2) 1 pc. thick clear glass
- (104-3) 1 pc. ceramic  
 1 vertebra (very delicate and crumbly)  
 1 pc. brass tubing  
 5 oyster shells

Cat. No. 105 - pit 25 at -1.5' in front of building:

- (105-1) 1 green glass base, conical kickup
- (105-2) 1 pc. green glass base
- (105-3) 1 pc. ceramic  
 1 pc. small brick

Cat. No. 106 - pit 19 from 3' to 1' in front of building:

- (106-1) 1 green glass bottle base, hemispherical kickup
- (106-2) 1 pc. ceramic
- (106-3) 1 pc. ceramic
- (106-4) 1 pc. light green glass
- (106-5) 1 pc. ceramic

- (106-6) 1 pc. rooftile
- (106-7) 1 pc. green bottle glass
- (106-8) 1 pc. ceramic
- (106-9) 1 pc. ceramic
- (106-10) 1 pc. clear glass, green paint with white painted R
- (106-12) 1 pc. rooftile
  - 1 iron nail
  - 1 pc. brick
  - 4 oyster shells

Cat. No. 107 - pit 4 from -2.5' to -3' under building:

- (107-1) 1 pc. kaolin pipestem
- (107-2) 2 pcs. ceramic
- (107-3) 1 pc. ceramic
- (107-4) 1 pc. ceramic
- (107-5) 1 pc. ceramic
- (107-6) 1 pc. ceramic
  - 1 pc. steel encrusted with iron

Cat. No. 108 - pit 25 at -2.5' under building:

- (108-1) 1 pc. kaolin pipestem
- (108-2) 1 pc. ceramic
- (108-3) 1 pc. ceramic
- (108-4) 1 aluminum and plastic basting brush
  - 1 frag. brick

Cat. No. 109 - pit 19 at -3.5' in front of building:

- (109-1) 1 pc. ceramic
- (109-2) 1 pc. ceramic

Cat. No. 110 - pit 15 at -1' in front of building:

- (110-1) 1 pc. ceramic

Cat. No. 111 - pit 23 at 0.5' under building:

- (111-1) 1 pc. ceramic
- (111-2) 1 Delmonte fruit cocktail can with label
- (111-3) 1 pc. base Seagram's bottle
- (111-4) 1 pc. ceramic
- (111-5) 1 pc. ceramic
- (111-6) 1 pc. ceramic
  - 1 leather shoesole

Cat. No. 112 - pit 10 at -3.5' in front of building:

- (112-1) 1 pc. ceramic
- (112-2,3) 2 pcs. kaolin pipestems
- (112-4,6,8,9,10,11,12,13,14,15,16) 10 pcs. ceramic
- (112-5) 1 pc. ceramic
- (112-7) 1 pc. ceramic
  - 1 2" iron nail
  - 1 8" iron nail with pc. of steel adhering
  - 1 astragalus, cow
  - 2 frags. bone, large mammal
  - 1 pc. longbone, sawed



Cat. No. 113 - pit 21 from 3.8' to 1' in front of building:

(113-1,4,5,6,7) 5 pcs. ceramic

(113-2) 1 pc. ceramic

(113-3) 1 pc. ceramic

1 14" iron spike

1 6" iron nail

1 pc. rib

1 pc. rooftile

Cat. No. 114 - pit 23 at -3.5' under building:

1 clump iron

Cat. No. 115 - pit 14 at -2' under building:

(115-1) 1 pc. ceramic

1 leather shoe sole

Cat. No. 116 - pit 14 from 3' to 0' under building; wet screened ¼" screen:

(116-1) 1 pc. ceramic

(116-2) 1 pc. ceramic

(116-3,4) 2 pcs. ceramic

Cat. No. 117 - pit 21 from 1' to 0.5' in front of building; wet screened ¼" screen:

(117-1) 1 pc. kaolin pipestem

(117-2) 1 pc. ceramic

(117-3) 1 pc. ceramic

(117-4) 1 pc. ceramic

(117-5) 1 pc. ceramic

2 4" iron nails

3 frags. brick

1 bone frag.

## APPENDIX 7:

## BOTTLE AND CERAMICS ANALYSIS - EMPIRE STORES, BROOKLYN, NEW YORK

Joan H. Geismar

## INTRODUCTION

Based on bottle and ceramic material recovered from the excavation of the Empire Stores site in Brooklyn, New York, a chronology related to the building and its subsequent alteration and intrusive work in its immediate vicinity can be reconstructed. A method applied to analysis of ceramics from 18th century British-American sites (South 1972, 1977) has been adapted to this study for developing this chronology. But beyond this, the data derived from this material reveal information which may not be found in any official record.

Analysis of the fill on which the Empire Stores building was erected is in part the archaeology derived from an unknown place--an unidentified 19th century midden, or middens, presumably not too far distant from the construction site, given the modes of transport at the time. Analysis documents the fact that although domestic ceramics were available (Barber, 1901; Stradling 1979:p.c.), the tableware found in this fill, composed of household refuse, is almost entirely of British manufacture. It also indicates that bottled wines and medicines were important components of domestic refuse at this time, and it reveals the nature of fill material itself. In addition, it discloses the bottled beverages available to and we assume to have been popular among construction workers ca. 1860.

Although dealing with numbers of specimens, frequencies, dates, bottle contents and ceramic decoration and ware-types, the archaeology of a site such as the Empire Stores is not merely figures and tables; it is a means of understanding a lifeway long gone.

## METHOD OF ANALYSIS

It should be noted that although this analysis deals solely with bottles and ceramics, artifacts from the Empire Stores excavation also include faunal material (shell and bone), leather, metal and other objects found in domestic middens dating from the first half of the 19th century, and from subsequent intrusions (see list of artifacts).

For the purpose of analysis, bottle and ceramic material was organized into two parts: the 26 pits in the area of the outside north-south wall of the building, and the 4 trenches under the building (Tables 1 and 5). In analysing the pit area, distinction was made between those sections of the pits which were outside and under the wall, and those which were under the building, adjacent to the wall and footings. The pit and trench areas, and any features, were analyzed separately; these data were then combined to obtain information about the site in its entirety.

Tables of relative frequency have been compiled (Tables 1-9), as well as three graphs (Figs. 1-3) illustrating selected data. Percentages for these tables are computed to the nearest tenth. When available, researched data, including bottles and ceramics for which specific dates of manufacture were obtainable, have been incorporated into the analysis. In instances when this specific information was not available, accepted bracketed and median dates of manufacture for ceramics, taken mainly from South (1972, 1977) and based on Noël Hume (1970), were used. Similar information for bottles was obtained from Munsey (1970), Toulouse (1969), Kendrick (1963), McKearin and Wilson (1978) and Whetzel (1979:p.c.). As a source of information, the identification of mineral and soda water bottles was greatly aided through Schmeiser (1970). Other additional

sources are cited when used. The results of research on specific bottles and ceramics can be found in Appendices A and B of this report.

#### BOTTLE ANALYSIS

Bottles and bottle fragments were analyzed for chronological and, when possible, content information (Tables 1, 2a, 2b, 2c, and 4a, 4b, 4c). Much of the chronological placement of the many fragments are based on the method of manufacture. Features with bottle material which were analyzed individually include a bottle cache, a drain and an ash lens<sup>1</sup> in the pits, and an unidentified feature in the trenches.

The formula method used by South (1972, 1977) to analyze 18th century century ceramics, and employed here in the ceramics analysis (see below), was adapted in the bottle analysis. In addition to median dates based on manufacturing techniques, this method required computation of median dates for each bottle for which specific dating was available. All of these dates were then used to compute a mean date for the bottles from the various site components.

This method was particularly rewarding when applied to bottles found in the bottle cache associated with the building's footing (Pit 3, 017B, 097B; and Pit 4, 023). Here specific identifications and research were possible because of the relatively good preservation of the material which included either whole bottles or fragments with identifiable embossing (see Appendix A). Analysis of these bottles confirms their association with the construction of the building, a probability which was noted during excavation. The fourteen bottles from this feature

---

<sup>1</sup>There were two ash lenses located in the pits, but only one (Pit 4, 103) had any bottles in its assemblage.

for which specific dating was possible yield a mean date of 1859.9 (Table 3a). This date is consistent with the construction date of Empire Stores of ca. 1861, derived from documentary sources.

The drain feature (Pit 2, 008B) contained six bottle fragments, four of which appear to be modern, implying association with a 20th century alteration of the building. Bottle information from the ash lens (Pit 4, 103) and from the unidentified feature in Trench 1 (050) appears inconclusive. One identifiable bottle from the ash lens provided a median date of 1837 (Table 3a), while the trench feature contained no identifiable bottle fragments. More conclusive information about the ash lens feature was recovered from ceramic analysis (see below).

Identifiable bottles from the trenches indicate a situation similar to that of the bottle cache, but association with initial construction is not as absolute (Table 3b). Tabulation of the dates for the six identifiable bottles from the trenches resulted in a mean date of 1864.6. This tabulation includes a Hostetter's Bitters bottle fragment which is assumed to be of early manufacture but which, unfortunately, is too fragmentary to date more specifically than the bracketed dates of ca. 1850 to ca. 1904.<sup>2</sup> Since information concerning this fragment is misleading, and its inclusion in the compilation of a mean date could falsely skew the overall dating of the trenches, it appears valid to delete this artifact from computation, bringing the mean date for the trenches to 1862.1. This:

---

<sup>2</sup>Beginning in the early 1850's, Hostetter's Bitters were manufactured for ca. 100 years (Watson 1965:136-137). This particular specimen (Tr 3, 052-54) was probably manufactured prior to machine bottle-making, ca. 1904; more absolute dating is impossible although, within this time period, it is more than likely that it is an earlier rather than a later specimen.

date also falls within acceptable limits for association with the construction of the building foundation. Based on the median dates for both pits and trenches, the mean dates for identifiable bottles is 1860.5 (Table 3c).

From Tables 2a and 2b it can be seen that although many of the bottle fragments cannot be researched, based on manufacturing techniques they can be assigned to categories broadly divided into bottles with median dates of 1850 or earlier and those post 1850. From the data for researchable bottles the assumption we believe can be validly made is that bottle fragments from the site represent both fill and construction-related artifacts. Thus, those bottles with median dates ca. 1850 and before belonging to fill and those ca. 1860 and after coming from construction debris.

In the pits, the frequencies for these two categories are almost equal, with 34.9% being 1850 or earlier and 30.2% being later. In the trenches the frequencies are 37.6% from 1850 or earlier and 12.4% ca. 1860 or later. These data could be interpreted as evidence for the pits containing a greater incidence of construction and post-construction debris than the trenches, but with both being composed of fill and construction-related material. The fact that 16.5% of the bottles in the pits are identified as post-1904, while the trenches have no bottles in this category, may merely reflect the fact that the street side of the building is more prone to constant intrusion, including that of debris relating to building alterations, than the area under the building, a fact that is not surprising.

Comparison of data on bottle contents (Tables 4a, 4b, 4c, Fig. 1), reveals that 44% of the bottles from the pits contained wine, ale or other unidentified alcoholic beverages, while soda and mineral water

bottles make up 28.4% of the assemblage. In the bottle cache, the frequencies are virtually reversed, with 28.6% being wine, ale or alcoholic beverages and 45.2% being soda or mineral water. From this it is inferred that the construction workers were probably drinking bottled soft drinks and that the wine, ale and alcoholic beverage bottles belong mainly to fill. Although not indicated in the tables, the time period for most of the wine bottles found at the site is ca. 1840-1860; their median or mean date, ca. 1850, reinforces the assignment of these bottles to fill.

Medicine bottles in the assemblage provide additional information about the fill chronology. In the pits 5.0%, and in the trenches 25.0%, of the bottles have been identified as medicine bottles.<sup>3</sup> Assuming an increase in availability of bottled medicines over time, this may reflect the fact that the fill in the pits is somewhat earlier than that in the trenches, a fact which is borne out in the ceramic analysis (see below).

In summary, based on an adaptation of South's ceramic formula, bottle data appear to reflect three major episodes at the site: two fill episodes and the construction of the building. This conclusion is confirmed and expanded by the results of the ceramic analysis.

#### CERAMIC ANALYSIS

As noted earlier, the table compiled by South (1972: Fig. 1; 1977: 210-212), and based on Noël Hume (1970), was the main source for dating

---

<sup>3</sup>A sarsaparilla bottle fragment (Pit 3,097B-1) has been identified here as a medicine bottle rather than a soda bottle as this was its designation in the 19th century (Young 1961:61).

the Empire Stores ceramic collection. Although this table was compiled for analysing ceramics from the 18th century British-American sites, and the Empire Stores site dates from the 19th century, its applicability is suggested by the fact that the tableware from this site appears to be of British manufacture. It should be noted, however that utilitarian objects, such as stoneware jugs, crocks and bottles and redware pieces, seem to be domestic in origins.

Ceramics from the bottle cache and ash lens features in the pits, and the unidentified features in the trenches, were analysed. These features also contained bottle material and are to be found in the bottle analysis. In addition, a second ash lens (Pit 5, 032), one with no bottles in its assemblage, was included in the ceramic analysis. The drain feature in the structure identified through bottle analysis as modern in age contained no ceramics.

Unlike the bottle assemblage, which to a large extent can be assumed to have been associated with work on or at the building, the ceramics from the site, on the basis of our research with some noted exceptions, appear to mainly fill material. Analysis of the ceramics based on ware and decoration (Tables 5,6,7a,7b,7c) and ware alone (Tables 8a,8b,8c) provides evidence for a third fill episode, one not apparent from bottle analysis. Further, it can be seen that all three fill episodes occurred prior to the construction of the Empire Stores building.

Based on analysis of ware and decoration combined, 76.4% of the ceramics from the pits and 58.3% from the trenches provide a median



date of 1850 or before.<sup>4</sup> These data indicate that the fill associated with the north-south main street wall of the building is earlier than that under the building and, as in the bottle analysis, suggest two fill episodes.

Although important diagnostic decorative elements may be missing on fragmentary artifactual material, nevertheless we can still glean important information from the ware. It was for this reason that ware analysis, in addition to analysis of ware and decoration combined, was undertaken. At the Empire Stores site ware analysis has proven fruitful in that it has provided corroborative evidence for a third and earliest fill deposit.

From Tables 8a, 8b, 8c and Fig. 3, it can be seen that the predominant wares in the ceramic assemblage are pearlware, whiteware,<sup>5</sup> and stoneware. Given the information from the decoration and ware analysis, it is not surprising to find that in the pits the frequency of pearlware (bracketed date: 1780-1830/65,<sup>6</sup> median date: 1805/22.5)<sup>6</sup> is highest while in the trenches

---

<sup>4</sup>It should be noted that the two researchable ceramics from the pits reveal a mean date of 1849.1; this date does not include two median dates from the ash lens in Pit 4 (103) which, unlike most of the ceramics, can be shown to be non-fill related. When the median dates from this feature are included in the compilation, the mean date for the pits becomes 1856.3. The five researchable ceramics from the trenches provide a mean date of 1846.6. Since both these sample are very small, these data do not necessarily refute the fact that the pit fill appears earlier than the trench fill based on a sample of 352. Based on these data, the mean ceramic date for the pits and trenches is 1847.8, or 1851.8 (Tables 6, 9a, 9b, 9c).

<sup>5</sup>"Whiteware" is used here to identify all white earthenware not identified as creamware, pearlware or stoneware; it does not include the granite-type ware which became popular and persisted after the 1840's.

<sup>6</sup>As noted in Table 5, the second, later bracketed date and median date is based on Noel Hume 1969 (p. 48) where he notes that pearlware production was continued by Wedgwood until 1865.

the frequency of whiteware is highest (bracketed dates 1820-1900+, median date 1860). This reinforces the conclusion that the fill outside the building is earlier than that under the building. In addition, ware analysis reveals a consistency in the frequency of creamware (bracketed dates 1762-1820, median date 1791) in both the pits and the trenches (Fig. 3). It is the presence of creamware consistently throughout the site which indicates the third and earliest fill episode. This is assumed to be early fill which was initially laid down after the ferry fell into disuse, and a land recovery scheme was started.

It has been noted that while most of the ceramics are fill related, there are some exceptions. Non-fill related ceramics were found in the ash lens feature (Pit 4, 103) from which a bottle was recovered with a median date of 1837. Relative to the pits and trenches in general, and based on ware and decoration, this feature shows a decrease in the frequency of ceramics with a median date of 1850 or earlier and an increase in those with a median date of post 1850 (Tables 7a, 7b). Of special interest here are two whiteware plate fragments, both of which could be researched. One provided a median date of 1866.5, the other 1867.5 (Table 9a and Appendix B), associating this feature with building alterations believed from documentary sources to have been undertaken ca. 1869.

The information found on one of the plates is worth describing for its local color. This specimen appears to be a promotional plate with the following advertisement stencilled on its face in cobalt:

"Roberts & Co...  
Pie Plate...  
274 Hudson...  
Brookly..." (writing incomplete).

Research shows that today Hudson Street is approximately 10 blocks from the Empire Stores site, and that Sarah Roberts, a widow, and her son, Ephraim, had a pie-bakery at number 274 from 1865 to 1870 (Brooklyn Directories). We would like to believe that one of the workmen making alterations to the Empire Stores included a Robert's pie as part of his noon day meal.

Another non-fill related ceramic sherd is also from an ash lens (Pit 5, 032). Although this feature yielded a very small sample of ceramics of which none gave specific median dates, and no bottles, the feature seems to be also related to subsequent building work. The frequency of ceramics from this feature dated to 1850 or earlier compared to those dating post-1850 suggests an association with building activity later than that suggested for the ash lens discussed above.

While the two ash lens features appear to be associated with building modifications, ceramics from the bottle cache (Pit 4, 017B, 097B) suggest a different association. From bottle data this feature has been identified with the initial date of construction of the building. The ceramics from this bottle cache appear to be somewhat earlier than those from all the trenches, and later than those from all the pits yet not as late in date as the artifacts from the two ash lenses (Tables 7a, 7b). The data confirm the association of the feature with the building of the structure, suggesting that its ceramics represent a mixture of fill and construction-related debris.

The unidentified feature in Trench 1 (050) and, it should be noted, Trench 4 in its entirety, both with very small artifact samples, yielded ceramic frequencies which are more like the pit assemblages frequencies than those from the trenches in general (Table 7a, 7b). The chronological

information from Trench 4 may reflect the fact that burned floor boards, perhaps representing an earlier structure at the site, were located in this unit. It is possible that the feature in Trench 1 and this unidentified structure in Trench 4 may have been contemporaneous with Main Street which is believed to have been paved ca. 1842.

From the ceramic data it seems likely that the fill which may have originally extended the land mass was added to ca. 1842 or before, perhaps in preparation for road building. Again, ca. 1860, additional fill was deposited prior to the construction of the building, which stood on the site of the present 1885 Empire Stores structure. The ceramics also reflect some of the subsequent additions and alterations which this building has undergone for more than a century.

#### SUMMARY

In summary, the bottle and ceramic data from the Empire Stores site reveal both fill and construction information, and provide some insight into the lifeways of the Brooklynites of the first half of the 19th century.

Based on these data alone, deductions about the history of the building could be made, apart from the written records. It is possible to deduce from these data that Main Street in front of the building was completed prior to the construction of the building itself; it is also possible to infer with some certainty that subsequent alterations to the building were made, and an approximate and relative chronology for these alterations. Based on bottle data, a construction date of 1859-1862 could be assigned to the building foundation.<sup>1</sup> These are all deductions which are basically confirmed by available documentation.

---

<sup>1</sup> This would have to be from the earlier construction, since the present Coffee warehouse was built in 1885 according to documented records (note R. Solecki) See also p. 12 footnote.

Beyond this, these bottle and ceramic data have provided information about domestic refuse from the first half of the 19th century, and its use as fill. These data tell us that no matter what was called for--and in Manhattan sand or "clean and wholesome earth" was what was theoretically required to be acceptable as fill (Minutes of the Common Council: 1796,1797)--the fill used at this and probably other fill-sites, was household refuse. The Minutes of the Common Council in Manhattan have on record many complaints attesting to this fact (Bodenstein 1979:p.c.) and, from the nature of the fill used in three different fill-episodes at the site of the Empire Stores, it is safe to assume that the same situation prevailed in Brooklyn.

This analysis also provides information which market researchers today would like to know about modern products; although bottled wine, ale and alcoholic beverages may have been consumed at home, and may have been consumed to some degree on the job, it was mineral and soda water which appear to be the preferred bottled beverages of the construction worker of the 1860's--at least this is what they were buying, perhaps filling the bottles with other, stronger brews.

## BIBLIOGRAPHY

- Baker, Vernon G.  
 1978 Historical Archaeology at Black Lucy's Garden, Andover, Massachusetts: Ceramics from the Site of a Nineteenth Century Afro-American. Papers of the Robert S. Peabody Foundation for Archaeology, Vol. 8.
- Barber, Edwin Atlee  
 1901 The Pottery and Porcelain of the United States. (1976: edition), Feingold and Lewis, New York.
- Bodenstein, Susan  
 1979 Person Communication, State Maritime Museum, New York, New York.
- Godden, Geoffrey A.  
 1964 Encyclopaedia of British Pottery and Porcelain Marks. Bonanza Books, New York.
- Kendirick, Grace  
 1963 The Antique Bottle Collector. Old Time Bottle Publishing Co., Salem.
- McKearin, Helen and Kenneth M. Wilson  
 1968 American Bottles & Flasks and Their Ancestry. Crown Publishers, New York.
- Munsey, Cecil  
 1970 The Illustrated Guide to Collecting Bottles. Hawthorn Books, New York.
- Noel Hume, Ivor  
 1970 A Guide to Artifacts of Colonial America. Alfred A. Knopf, New York.  
 1969 "Pearlware: Forgotten Milestone of English Ceramics History," English Pottery and Porcelain, Paul Atterbury, edit., 1978: 42-49. Universe Books, New York.
- Schmeiser, Alan  
 1970 More Pop. Michalan Press, Dixon.
- South, Stanley  
 1972 "Evolution and Horizon as Revealed in Historical Archaeology," Conference on Historic Sites Archaeology, Papers, Vol. 6:71-116.  
 1977 Method and Theory in Historical Archaeology. Academic Press, New York.
- Stewart, Regina and Geraldine Cosentino  
 1977 Stoneware: A Guide for the Beinning Collector. Golden Press, New York.

## BIBLIOGRAPHY (continued)

Stradling, Diana and J.G.

1979 Personal Communication, New York, New York.

Toulouse, Julian H.

1969 "A Primer on Mold Seams," Western Collector 7(11):526-537;  
Western Collector 7(12):578-587.

Watson, Richard

1965 Bitters Bottles. Thomas Nelson, Inc., Nashville.

Whetzel, Jim

1979 Personal Communication, Jim's Bottle Shop, Ardsely, New York.

Young, James H.

1961 The Toadstool Millionaires: A Social History of Patent Medicines in America Before Federal Regulation. (1972 edition), Princeton University Press, Princeton.

APPENDIX A--RESEARCHED BOTTLES						
PIT OR TRENCH AND NUMBER	NUMBER OF SPECIMENS	COMPANY AND ADDRESS	TYPE OF BOTTLE	BRACKETED DATES	MEDIAN DATE	SOURCE
Pit 3, 097B- 16,18,34	1	Charles Whittemore 162 Varick St. 86 E. 11 St. New York	M/S	1850-1852	1851	N.Y. Business Directories
Pit 3, 097B- 14,42,65	2	Alex Eagle (no information)	M	1860-1861	1860-5	McKearin and Wilson
Pit 3, 097B- 62	2	R. Robinson 376 Bowery New York	M	1859-1865	1861.5	N.Y. Business Directories
Pit 4, 023- 2						
Pit 3, 017B- 17	3	Taylor and Wilson (T & W)				
097B- 67		127 Reade	M	1861	1861	N.Y. Business
Pit 2, 085A- 3		141 Franklin	M	1862-1865	1863	Directories
		139 Franklin	S	1866-1879	1872.5	
		New York		(1861-1879	1870)	
Pit 2, 085A- 4		Morgan Brothers & Co. (M.B. & Co.)	M			N.Y. Business Directories
Pit 3, 097B- 64	3	97 W. 35th St.		1856-1860	1858	
Pit 4, 023- 3	1	145 W. 35th St.		1861-1873	1867	
Pit 6, 074- 4		New York		(1856-1873	1864.5)	
Pit 3, 097B- 66	1	J & A Dearborn 95 Third Avenue New York	M	1851-1852	1851.5	N.Y. Business Directories

(Note: M=Mineral Water  
S=Soda)  
PAC=Porter, Ale or Cider  
B=Bitters)

(Continued)



APPENDIX A--RESEARCHED BOTTLES (Continued)

PIT OR TRENCH AND NUMBER	NUMBER OF SPECIMENS	COMPANY AND ADDRESS	TYPE OF BOTTLE	BRACKETED DATES	MEDIAN DATE	SOURCE
Pit 3, 017B- 18	1	Dixon & Carson 41 Walker St. New York	S	1856-1865	1860.5	N.Y. Business Directories
Pit 4, 023- 4	1	Robinson, Charlesworth & Tryner (R.C. & T.) 376 Bowery New York	PAC	1850-1853	1851.5	N.Y. Business Directories
Trench 3, 052-41	1	Hanbury Smith 833 Broadway 808 Broadway and 32 Pine	M	1860/61 1863-1868 (1860-1868)	1860.5 1865 1864)	N.Y. Business Directories
Trench 3, 052-54	1	Dr. J. Hostetter's Bitters	B	ca.1850-1904*	1877*	Watson
Pit 4, 103- 4	1	Ricketts & Co. Bristol, England	?	1821-1853	1837	McKearin and Wilson

IT SHOULD BE NOTED THIS IS A PARTIAL COUNT OF RESEARCHED BOTTLES; IT REPRESENTS THOSE SPECIMENS WHICH COULD BE SPECIFICALLY IDENTIFIED.

(Note: M=Mineral Water  
S=Soda  
PAC=Porter, Ale or Cider  
B=Bitters)

\*Hostetter's Bitters were actually produced for ca. 100 years beginning about 1850, but the specimen in this assemblage was produced prior to 1904.

Geismar/

APPENDIX B--RESEARCHED CERAMICS

<u>PIT OR TRENCH AND NUMBER</u>	<u>NUMBER OF SPECIMENS</u>	<u>COMPANY AND LOCATION</u>	<u>ITEM</u>	<u>BRACKETED DATES</u>	<u>MEDIAN DATE</u>	<u>SOURCE</u>
Pit 2, 085B- 4	1	D.L. Ormsby New York	Pottery Bottle (beer?)	ca.1840-1860	ca.1850	McKearin and and Wilson
Pit 4, 103- 1	1	James Edwards & Co. Dale Hall, Staffordshire	Plate fragment	1851-1852	1866.5	Godden
Pit 4, 103- 2	1	" Roberts & Co. Pie Plate 274 Hudson [St.] Brooklyn, New York"	Pie Plate	1865-1870	1867.5	Brooklyn Directories
Trench 1, 054-3	1	J.A. Brown 378 Bowery New York	Pottery Bottle (ale?)	1846/1847	1846.5	N.Y. Business Directories
Trench 2, 044-4	1	Elsmore & Foster Staffordshire	Unid. fragment	1853-1871	1862	Godden
Trench 3, 052-71	1	Henry Alcock & Co. Staffordshire	Basin or platter base fragment	1861-1910	1885.5	Godden
Pit 24, 040- 8	1	A.O. Whittemore ?	Stoneware Jug?	1869-1893	1881	Stewart and Cosentino

IT SHOULD BE NOTED THAT THIS IS A PARTIAL LIST OF RESEARCHED CERAMICS; IT REPRESENTS THOSE SPECIMENS WHICH COULD BE SPECIFICALLY IDENTIFIED.

TABLE 1

BOTTLE DATA--EMPIRE STORES, BROOKLYN, NEW YORK

DATING AND TYPE INFORMATION

PITS																	TRENCHES					PITS & TRENCHES	
Pit/Trench #	2	3	4	5	6	7	9	11	12	18	19	23	24	25	26	PITS	1	2	3	4	TRENCHES		
Opening ASL	4.5'	4.5'	4.4'	4.3'	4.2'	4.3'	4.4'	4.4'	4.2'	4.4'	4.3'	4.4'	4.3'	4.4'	4.4'	PITS	5.1'	5.2/53	46'	52'	TRENCHES		
	008A (4' to 1' IFB) 008B (IFB Drain) 085A (-3' to -3.5' UB) 093 (3.5' to 0' IFB) 017A (0' IFB) 017B (0' IFB Bottle Cache) 096 (2.4' to 0' UW) 097B (2' to 0' UB Bottle Cache) 103 (3.6' to 0' IFB Ash Lens) 023 (3' IFB Bottle Cache) 024 (1' to 0' UB East Side) 031 (1' to 0' UB West Side) 033 (2.5' to 0.5' IFB) 035 (0' UB) 074 (0' UB) 055 (0' UB) 014 (2' to -3.5' IFB) 100 (0' UB) 091 (3' UB) 004 (-0.7' to -1.8' IFB) 068 (-3' UB) 080 (Top IFB) 025 (3.5' to -2.5' IFB) 026 (2' to 1' IFB) 106 (1' to -3' IFB) 111 (0.5' IFB) 040 (1' to 0' IFB) 021 (0' IFB) 105 (-1.5' IFB) 009 (0' IFB) SUBTOTAL						048 (5.1' to 3.5') 049 (3.5' to 2.0') 050 (3.5' to 2.0' Feature) 054 (2' to 0.7') 044 (5.2' to 4.4') 045 (4.4' to 2.9') 046 (2.9' to 0.3') 052 (2.6' to 2.0') 053 (? to 2.9') SUBTOTAL						TOTAL										
DATING (with median dates when applicable)																							
N (# of Specimens)	2 6 3	5 2 8 2 22	5 12 5 2	4 2	2 1	3 1	1 1	1 1	1 1	1 1	1 1 2 1	1 1	9 2 1	10						3 1 2 2	4 1 6 12 1	32	141
Pre 1850-ca 1850		1 1 2	3 1	2 2									1 1	11						1 1	1 1	3	14
ca. 1850 (no other info.)		1 1	2 1	2 2									1 1	9						1 1	2 3	6	15
ca. 1840-ca. 1860 (1850)		1 1 3	1 1			1					1		7 1 1	18						1 1	1 1	3	21
ca. 1850-ca. 1870 (1860)		1 2 1 6	1 2											13						1 1		2	15
ca. 1850-ca. 1880 (1865)		1											1	1						1		2	1
ca. 1850-ca. 1904 (1877)		1											1	1						1		2	3
Post 1904	1 4	2				3		1 1	1 1	1 1	1 1 1 1	1		18						1		1	18
Unid./ no dating info.	2	1 1	2 2	1	1								1 1	12						1 1	1 1	3	15
Specific Dates	1 2	3 10	2 5 1	1	1									26						1 1	1 2 7	13	39
TYPE																							
N (# of Specimens)	2 6 3	5 2 8 2 22	5 12 5 2	4 2	2 1	3 1	1 1	1 1	1 1	1 1	1 1 2 1	1 1	9 2 1	10						3 1 2 2	4 1 6 12 1	32	141
WINE/ALE/ALCOHOLIC	1 4	1 1 1 7	2 5 3 2	1 2	1						1 1 1 1	1	9 2 1	18						2 1 1	1 1 2	8	56
SODA/MINERAL	2	1 6 1 10	3 1	3	1	1					1 1			31						1 1	1 1	4	35
MEDICINE		2 1 1	1 1								1 1			5						1 1	2 4	8	13
FOOD	1	1 1 1	1 1											4									4
UNID.	1 2	3 1 1	2 2 2 1		1 2		1 1			1				21							3 3 5 1	12	33

Note: IFB=in front of building  
UB=under building

TABLE 2a

BOTTLE ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK				PIT DATING INFORMATION					
PITS 2,3,4,5,6,7, 9,11,12,18,19, 23,24,25,26.				PIT 3 (017B,097B) PIT 4.(023) (Bottle Cache)		PIT 4 (103) (Ash Lens)		PIT2(008B) (Drain)	
Median Date	#	%		#	%	#	%	#	%
Pre-1850 to ca. 1850	11	101		6	14.3	1	200		
ca. 1850 (no further info)	9	8.3		1	2.4				
ca. 1840 to ca. 1860 (1850)	18	16.5		4	9.5	1	200		
ca. 1850 to ca. 1870 (1860)	13	11.9		9	21.4				
ca. 1850 to ca. 1880 (1865)	1	.9		1	2.4				
ca. 1850 to ca. 1904 (1877)	1	.9		1	2.4	2	400		
Post 1904	18	16.5						4	66.7
Specific Dates	26	11.0		2	42.9				
Unid./no dating info.	12	23.9		18	4.8	1	200	2	33.3
TOTALS	109	100.0		42	100.1	5	1000	6	100.0

TABLE 2b

BOTTLE ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK										TRENCH DATING INFORMATION									
TRENCHES				TRENCH		TRENCH		TRENCH		TRENCH		TRENCH		TRENCH					
1-4				1		2		3		4		1 (050)		(Feature)					
Median Date				#	%	#	%	#	%	#	%	#	%	#	%				
Pre-1850 to ca. 1850				3	9.9	1	12.5	2	18.2										
ca. 1850 (no further info)				6	18.8	1	12.5	2	18.2	3	25.0								
ca. 1840 to ca. 1860 (1850)				3	9.9	1	12.5	1	9.1	1	8.3			1	500				
ca. 1850 to ca. 1870 (1860)				2	6.2	2	25.0												
ca. 1850 to ca. 1880 (1865)														1	500				
ca. 1850 to ca. 1904 (1877)				2	6.2	1	12.5	1	9.1										
Post 1904																			
Specific Dates				13	70.6	2	25.0	4	36.4	7	58.3								
Unid./no dating info.				3	9.9			1	9.1	1	8.3	1	100						
TOTALS				32	100.0	8	100.0	11	100.0	12	99.9	1	100	2	100.0				

TABLE 2c

BOTTLE ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK		PIT AND TRENCH DATING INFORMATION	
PITS 2,3,4,5,6,7, 9,11,12,18,19, 23,24,25,26.		and TRENCHES 1,2,3,4.	
Median Date	#	%	
Pre-1850 to ca. 1850	14	9.9	
ca. 1850 (no further info.)	15	10.6	
ca. 1840 to ca. 1860 (1850)	21	14.9	
ca. 1850 to ca. 1870 (1860)	15	10.6	
ca. 1850 to ca. 1880 (1865)	1	0.7	
ca. 1850 to ca. 1904 (1877)	3	2.1	
Post 1904	18	12.8	
Specific Dates	39	27.7	
Unld./no dating info.	15	10.6	
TOTALS	141	100	

TABLE 3a

## BOTTLE ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK MEDIAN and MEAN-DATE INFORMATION (DATED BOTTLES)

PITS 2,3,4,5,6.

(Note: IFB=in front of building; UB=under building)

MEDIAN-DATES		MEAN-DATE
1) 1842-76	Pit 2 (008A) IFB	1859
1) 1861-79	Pit 2 (085A) UB	1870
1) 1856-60		1858
1) 1840-75	Pit 3 (017B) IFB (Bottle Cache)	1857.5
1) 1861-79		1865
1) 1856-65		1860.5
1) 1840-75	Pit 3 (097B) UB (Bottle Cache)	1857.5
1) 1850-52		1851
1) Post 1860		?
1) Post 1840		?
1) 1860-70		1865
1) 1859-64		1861.5
1) 1858-67		1862.5
1) ca. 1860		1860
1) 1861-79		1870
1) 1856-60		1858
1) 1821-53	Pit 4 (103) IFB (Ash Lens)	1837
1) 1842 →		?
2) Post 1842		?
1) 1850-53	Pit 4 (023) IFB (Bottle Cache)	1851.5
1) 1859-64		1861.5
1) 1856-60		1858
1) 1842-60	Pit 4 (024) UB	1851
1) 1842-70	Pit 5 (033) IFB	1856
1) 1861-73	Pit 6 (074) UB	1867

21 bottles with mean bottle date  
1858.9

14 of these from Bottle Cache  
with mean bottle date  
1859.9

TABLE 3b

BOTTLE ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK MEDIAN and MEAN-DATE INFORMATION (DATED BOTTLES)  
TRENCHES 1, 2, 3.

		MEDIAN-DATES	MEAN-DATE
1) ca. 1860→	Tr. 1 (049)	?	
1) 1854-67	Tr. 1 (054)	1860.5	
1) Post 1860	Tr. 2 (044)	?	
1) 1861-79	Tr. 2 (045)	1870	
1) 1842 →	Tr. 2 (046)	?	
1) Post 1860		?	
1) 1860-68*	Tr. 3 (052)	1864	6 bottles with mean bottle date 1864.6
1) 1842-70		1856	
1) 1860		1860	
2) Post 1860		?	
1) ca. 1850-1904		1877 **	
1) Post 1842		?	

\* This manufacturer, Hanbury Smith, used own name from 1860-1868, took a partner from 1869-1883 and returned to own name from 1884 to 1893 when he appears to go out of business. The assumption is made here that the fragment in assemblage belongs to earliest period of manufacture.

\*\* Hostetter's Bitters were produced from ca. 1850-1950 (Watson 1965:136-137). Although the fragment in this assemblage is probably from an early period, the median-date reflects production from 1850-1904. Deletion of this date reduces the mean bottle date to 1862.1. This date probably reflects the chronology of the trenches more accurately than the date of 1864.6.

TABLE 3c

BOTTLE ANALYSIS--EMPRIRE STORES, BROOKLYN, NEW YORK      MEAN-DATE INFORMATION (DATED BOTTLES)  
PITS AND TRENCHES

	MEAN-DATES	MEAN-DATE
PITS	1858.9	
TRENCHES	1864.6 (with Hostetter's date)	= 1861.7
	-or-	
PITS	1858.9	
TRENCHES	1862.1 (with deletion of Hostetter's date)	=1860.5

TABLE 4a

BOTTLE ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK						ANALYSIS OF BOTTLE TYPES (PITS)					
PITS 2,3,4,5,6,7, 9,11,12,18,19, 23, 24, 25,26.						PIT 3 (017B,097B) PIT 4 (023) (Bottle Cache)		PIT 4 (103) (Ash Lens)		PIT 2 (008B) (Drain)	
	#	%		#	%		#	%		#	%
WINE/ALE/ALCOHOLIC	48	44.0		12	28.6		2	70.0		4	66.7
SODA/MINERAL	31	28.7		19	45.2		-	-		-	-
MEDICINE	5	4.6		3	7.1		1	20.0		-	-
FOOD	4	3.7		3	7.1		-	-		-	-
UNID.	21	19.3		5	11.9		2	70.0		2	33.3
TOTALS	109	100.0		42	99.7		5	100.0		6	100.0

TABLE 4b

BOTTLE ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK									ANALYSIS OF BOTTLE TYPES (TRENCHES)								
TRENCHES			TRENCH			TRENCH			TRENCH			TRENCH			TRENCH		
1-4			1			2			3			4			1(050)		
															Feature		
	#	%		#	%		#	%		#	%		#	%		#	%
WINE/ALE/ALCOHOLIC	9	25.0		4	50.0		2	18.2		2	16.7					1	50.0
SODA/MINERAL	4	16.5		2	25.0		1	9.1		1	8.3					-	-
MEDICINE	8	25.0		2	25.0		2	18.2		4	33.3					1	50.0
FOOD	-	-		-	-		-	-		-	-					-	-
UNID.	12	37.5		-	-		6	54.6		5	41.7		1	100.0		-	-
TOTALS	32	100.0		8	100.0		11	100.1		12	100.0		1	100.0		2	100.0

TABLE 4c

BOTTLE ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK						ANALYSIS OF BOTTLE TYPES (PITS AND TRENCHES)					
PITS 2,3,4,5,6,7, and 9,11,12,18,19, 23,24,25,26.						TRENCHES 1,2,3,4.					
	#	%		#	%		#	%		#	%
WINE/ALE/ALCOHOLIC	56	39.7									
SODA/MINERAL	35	24.8									
MEDICINE	13	9.2									
FOOD	4	2.8									
UNID.	33	23.4									
TOTALS	141	99.9									



CERAMIC DATA--EMPIRE STONES, BROOKLYN, NEW YORK

**DATING AND MARRIAGE INFORMATION**

\*Except where noted, median dates are drawn from South (based on Hall Hume) as found in Figure 1, p. 85. Conference on Historic Sites Archaeology, PAPERS, 1972, Volume 6, and from computations made for this study.

\*This second median date (1622.5) is based on Noel Hume, 1969, whom he notes that the manufacture of man-lantern continued in England until 1845.

NOTE: NO-ONE HAS REFUSED IN THE REUNITE-TYPE WARD SINCE 1980.

\*\*\*The gold red redware is based on Meier, 1978.

\*\*\*\*The date for placement is based on Hoel Humb 1976.78.80.101.

Note: IFB=In front of building  
UB=under building  
UW=under wall

TABLE 6

## CERAMIC ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK

## DATING BASED ON WARE AND DECORATION (PITS AND TRENCHES)

(Bracketed and Median Dates indicated where available)

PITS 2,3,4,5,6,7,

TRENCHES

PITS 2,3,4,5,6,7,

and

TRENCHES

9,10,11,12,13,

1,2,3,4,

9,10,11,12,13,

1,2,3,4,

14,15,16,17,18,19,

14,15,16,17,18,19,

21,22,23,24,25,26,

21,22,23,24,25,26

DATING (median date when available)	#	%		#	%		#	%	
N (# of specimens)	237			115			352		
1745-1795 (1770)	10	4.2		-			10	2.8	
1775-1820 (1797.5)	12	5.1		9	7.8		21	6.0	
1780-1820 (1800)	2	.8		3	2.6		5	1.4	
1780-1830 (1805)	14	5.9		5	4.3		19	5.4	
1780 1830/65 (1805/1822.5)	12	5.1		4	3.5		16	4.5	
1790-1820 (1805)	10	4.2		4	3.5		14	4.0	
1795-1840 (1817.5)	14	5.9		1	.9		15	4.3	
Late 18th-mid 19th	2	.8		1	.9		3	.9	
1800-1820 (1810)	7	3.0		-	-		7	2.9	
1800-1830 (1815)	8	3.4		1	.9		9	2.6	
1810-1820 (1815)	2	.8		-	-		2	.6	
1820-1840 (1830)	3	1.3		1	.9		4	1.1	
1820-1900+(ca.1860)	24	10.1		24	20.9		48	13.6	
Pre-1825	4	1.7		1	.9		5	1.4	
1825-1850 (1837.5)	4	1.7		-	-		4	1.1	
1830	6	2.5		13	11.3		19	5.4	
1840	8	3.4		4	3.5		12	3.4	
1845/6	5	2.1		-	-		5	1.4	
Pre-1850	12	5.1		1	.9		13	3.7	
ca. 1850	13	5.5		10	8.7		23	6.5	
Post 1850	1	.9		1	.9		2	.6	
19th	38	16.0		13	11.3		51	14.5	
18th and 19th C.	14	5.9		9	7.8		23	6.5	
Unid.	6	2.5		4	3.5		10	2.8	
Specific dates	6	2.5		6	5.2		12	3.4	
TOTALS	237	99.9		115	100.2		352	99.9	

TABLE 7a

CERAMIC ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK						PIT MEDIAN DATES BASED ON WARE AND DECORATION					
PITS 2,3,4,5,6,7, 9,10,11,12,13, 14,15,16,17,18,19, 21,22,23,24,25,26.						PIT 3(017B,097B) (Bottle Cache)		PIT 4(103) (Ash Lens)		PIT 5(032) (Ash Lens)	
	#	%		#	%		#	%		#	%
Median Date 1850 or earlier	181	76.4		7	63.6		4	50.0		2	40.0
Median Date Post 1850	30	12.7		2	18.2		2	25.0		3	60.0
Unid.	6	2.5		-	-					-	-
Specific, but no Median Date Info.	20	8.4		2	18.2		2	25.0		-	-
TOTALS	237	100.0		11	100.0		8	100.0		5	100.0

TABLE 7b

CERAMIC ANALYSIS-- EMPIRE STORES, BROOKLYN, NEW YORK						TRENCH MEDIAN DATES BASED ON WARE AND DECORATION									
TRENCHES						TRENCH		TRENCH		TRENCH		TRENCH		TRENCH	
1-4.						1		2		3		4		1(050)	
(Feature)															
	#	%		#	%		#	%		#	%		#	%	
Median Date 1850 or earlier	67	58.3		11	64.7		15	53.6		38	57.6		3	75.0	
Median Date Post 1850	27	23.5		4	23.5		6	21.4		16	24.2		1	25.0	
Unid.	4	3.5		1	5.9		-	-		3	4.6		-	-	
Specific, but no Median Date info.	17	14.8		1	5.9		7	25.0		4	13.6		-	-	
TOTALS	115	100.1		17	100.0		28	100.0		66	100.0		4	100.0	

TABLE 7c

CERAMIC ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK						PIT AND TRENCH MEDIAN DATES BASED ON WARE AND DECORATION					
PITS 2,3,4,5,6,7, 9,10,11,12,13, 14,15,16,17,18,19, 21,22,23,24,25,26.						and		TRENCHES 1,2,3,4.			
	#	%		#	%						
Median Date 1850 or earlier	248	70.5									
Median Date Post 1850	57	16.2									
Unid.	10	2.8									
Specific, but no Median Date Info.	37	10.5									
TOTALS	352	100.0									

TABLE 8a

CERAMIC ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK

WARE TYPES (with bracketed and Median Dates when available) (PITS)

PITS 2,3,4,5,6,7,

PIT 3(017B,097B)

PIT 4(103)

PIT 5(032)

9,10,11,12,13,

(Bottle Cache)

(Ash Lens)

(Ash Lens)

14,15,16,17,18,19,

21,22,23,24,25,26.

Median Date	#	%	#	%	#	%	#	%
Porcelain 1660→	6	2.5	-	-	-	-	-	-
Porcelain 1745-1795 (1770)	6	2.5	-	-	1	12.5	-	-
Porcelain 1800-1830 (1815)	6	2.5	-	-	-	-	-	-
Creamware 1762-1820 (1791)	19	8.0	1	9.1	-	-	-	-
Pearlware 1790-1830/65 (1805/1822.5)	65	27.4	2	18.2	1	12.5	2	40.0
Lustreware 1790-1840 (1815)	1	.4	-	-	-	-	-	-
Whiteware 1820-1900+ (1860)	55	23.2	4	36.4	5	62.5	3	60.0
Yellowware 1830→	1	.4	-	-	-	-	-	-
Ironstone/1840→	2	.8	-	-	-	-	-	-
Graniteware	-	-	-	-	-	-	-	-
Redware 18th and 19th C. (ca.1800)	14	5.9	3	27.3	-	-	-	-
Stoneware 19th C. (ca.1850)	41	17.3	-	-	-	-	-	-
Unid. Earthenware	14	5.9	1	9.1	-	-	-	-
Earthenware	2	.8	-	-	-	-	-	-
Pearlware/Creamware?	1	.4	-	-	1	12.5	-	-
Whiteware/Pearlware?	3	1.3	-	-	-	-	-	-
Unid.	1	.4	-	-	-	-	-	-
TOTALS	237	99.7	11	100.1	8	100.0	5	100.0

TABLE 8b

## CERAMIC ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK

## WARE TYPES (with bracketed and Median Dates when available) (TRENCHES)

	TRENCHES 1,2,3,4.		TRENCH 1		TRENCH 2		TRENCH 3		TRENCH 4		TRENCH 1(050) (Ash Lens)	
Median Date	#	%	#	%	#	%	#	%	#	%	#	%
Porcelain 1660 →	-	-	-	-	-	-	-	-	-	-	-	-
Porcelain 1745-1795 (1770)	-	-	-	-	-	-	-	-	-	-	-	-
Porcelain 1800-1830 (1815)	1	.9	-	-	-	-	1	1.5	-	-	-	-
Creamware 1762-1820 (1791)	9	7.8	-	-	2	7.1	6	9.1	1	25.0	-	-
Pearlware 1780-1830/65 (1805/1822.5)	22	19.1	1	5.9	5	17.9	15	22.7	1	25.0	-	-
Lustreware 1790-1840 (1815)	-	-	-	-	-	-	-	-	-	-	-	-
Whiteware 1820-1900+ (1860)	33	28.7	5	29.4	13	46.4	14	21.2	1	25.0	1	25.0
Yellowware 1830 →	9	7.8	-	-	1	3.6	8	12.1	-	-	-	-
Ironstone/1840 →	3	2.7	-	-	1	3.6	1	1.5	1	25.0	-	-
Graniteware	-	-	-	-	-	-	-	-	-	-	-	-
Redware 18th and 19th C. (ca.1800)	8	7.0	3	17.6	1	3.6	4	6.1	-	-	2	50.0
Stoneware 19th C. (ca.1850)	22	19.1	7	41.2	5	17.9	10	15.2	-	-	1	25.0
Unid. earthenware	-	-	-	-	-	-	-	-	-	-	-	-
Earthenware	1	.9	-	-	-	-	1	1.5	-	-	-	-
Pearlware/Creamware?	2	1.7	-	-	-	-	2	3.0	-	-	-	-
Whiteware/Pearlware?	2	1.7	-	-	-	-	2	3.0	-	-	-	-
Unid.	3	2.6	1	5.9	-	-	2	3.0	-	-	-	-
TOTALS	115	100.0	17	100.0	28	100.1	66	99.9	4	100.0	4	100.0

TABLE 8c

CERAMIC ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK

WARE TYPES (with bracketed and Median Dates when available (PITS AND TRENCHES))

PITS 2,3,4,5,6,7, and TRENCHES  
 9,10,11,12,13, 1,2,3,4.  
 14,15, 16,17,18,19,  
 21,22,23,24,25,26.

Median Date	#	%
Porcelain 1660—	6	1.7
Porcelain 1745-1795 (1770)	6	1.7
Porcelain 1800-1830 (1815)	7	2.0
Creamware 1762-1820 (1791)	28	8.0
Pearlware 1780-1830/65 (1805/1822.5)	87	24.7
Lustreware 1790-1840 (1815)	1	.3
Whiteware 1820-1900+ (1860)	88	25.0
Yellowware 1830—→	10	2.8
Ironstone/ 1840—→ Graniteware	5	1.4
Redware 18th and 19th C. (ca1800)	22	6.3
Stoneware 19th C. (ca.1850)	63	17.9
Unid. Earthenware	14	4.0
Earthenware	3	.9
Pearlware/Creamware?	3	.9
Whiteware/Pearlware?	5	1.4
Unid.	4	1.1
TOTALS	352	100.1

TABLE 9a

CERAMIC ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK

MEDIAN and MEAN-DATE INFORMATION (DATED CERAMICS)

PITS 2,4,9,18,24.

(Note: IFB=in front of building;UB=under building)

		MEDIAN-DATES	MEAN-DATE
1) 1854-60	Pit 2 (085B) UB	1857	
1) 1865-70		1867.5	5 ceramics with mean ceramic date
1) 1851-82	Pit 4 (103) IFB (Ash Lens)	1866.5	1856.3
1) 1789-1830	Pit 9 (102) UB	1809.5	2 of these from Ash Lens
1) Post 1800	Pit 18(080) IFB	?	with mean ceramic date
1) 1869-93	Pit 24(040) IFB	1881	1867
			3 remaining ceramics from Pits
			with mean ceramic date
			1849.1

TABLE 9b

CERAMIC ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK

MEDIAN and MEAN-DATE INFORMATION (DATED CERAMICS)

TRENCHES 1,2,3.

(Note: Trenches all under building)

		MEDIAN-DATES	MEAN-DATE
1) 1846/7	Tr.1 (054)	1846.5	
1) 1853-71	Tr.2 (044)	1862	5 ceramics with mean ceramic date
1) 1828-1849	Tr.2 (045)	1834	1846.6
1) 1795-1815	Tr.2 (046)	1805	
1) 1828(?)	Tr.3 (052)	?	
1) 1861-1910		1885.5	

TABLE 9c

CERAMIC ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK

MEAN-DATE INFORMATION (DATED CERAMICS)

PITS AND TRENCHES

	MEAN-DATES	MEAN-DATE
PITS	1856.3 (all)	= 1851.8
TRENCHES	1846.6	
-or-		
PITS	1849.1 (without Ash Lens date)	= 1847.8
TRENCHES	1846.6	

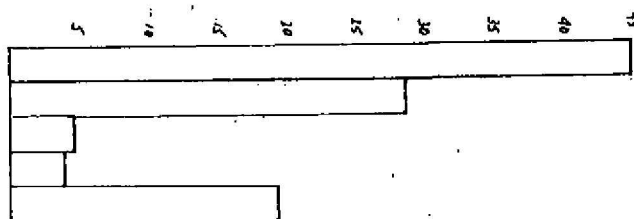
FIG. 1

BOTTLE ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK

BOTTLE-TYPE (PITS & TRENCHES)

PITS

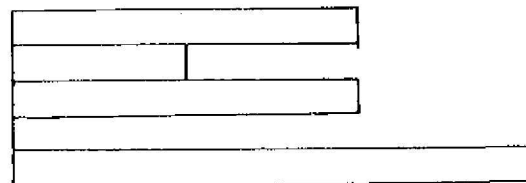
Wine/Ale/Alcoholic  
Soda/Mineral  
Medicine  
Food  
Unid.



41.0 27.4 4.6 3.7 7.3

TRENCHES

Wine/Ale/Alcoholic  
Soda/Mineral  
Medicine  
Food  
Unid.

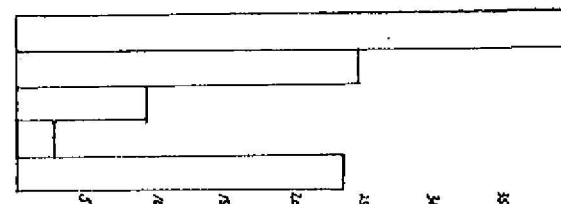


55.0 12.5 25.0 - 75.5

PITS  
&

TRENCHES

Wine/Ale/Alcoholic  
Soda/Mineral  
Medicine  
Food  
Unid.



34.7 23.8 4.2 2.4 13.4

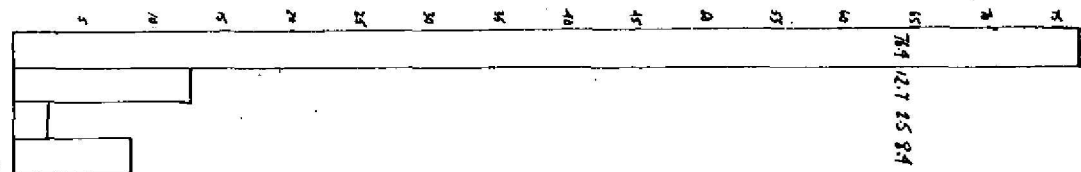


FIG. 2

CERAMIC ANALYSIS, EMPIRE STORES--BROOKLYN, NEW YORK MEDIAN DATES BASED ON WARE AND DECORATION (PITS & TRENCHES)

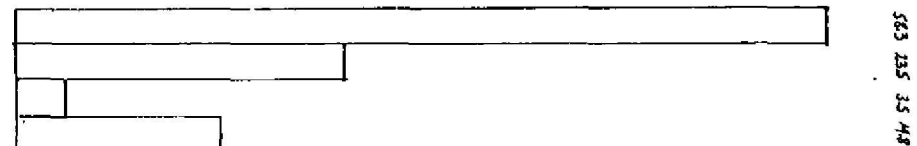
PITS

Median Date 1850 or earlier  
Median Date Post 1850  
Unid.  
Specific, but no Median Date Info.



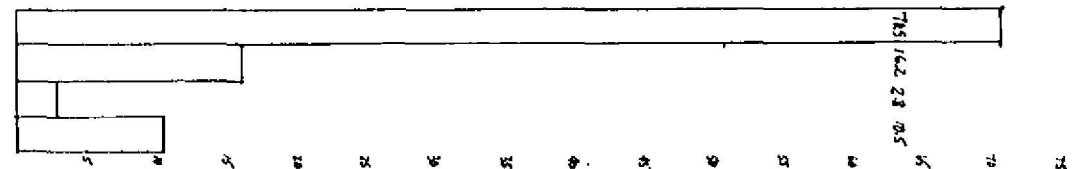
TRENCHES

Median Date 1850 or earlier  
Median Date Post 1850  
Unid.  
Specific, but no Median Date Info.



PITS  
&  
TRENCHES

Median Date 1850 or earlier  
Median Date Post 1850  
Unid.  
Specific, but no Median Date Info.

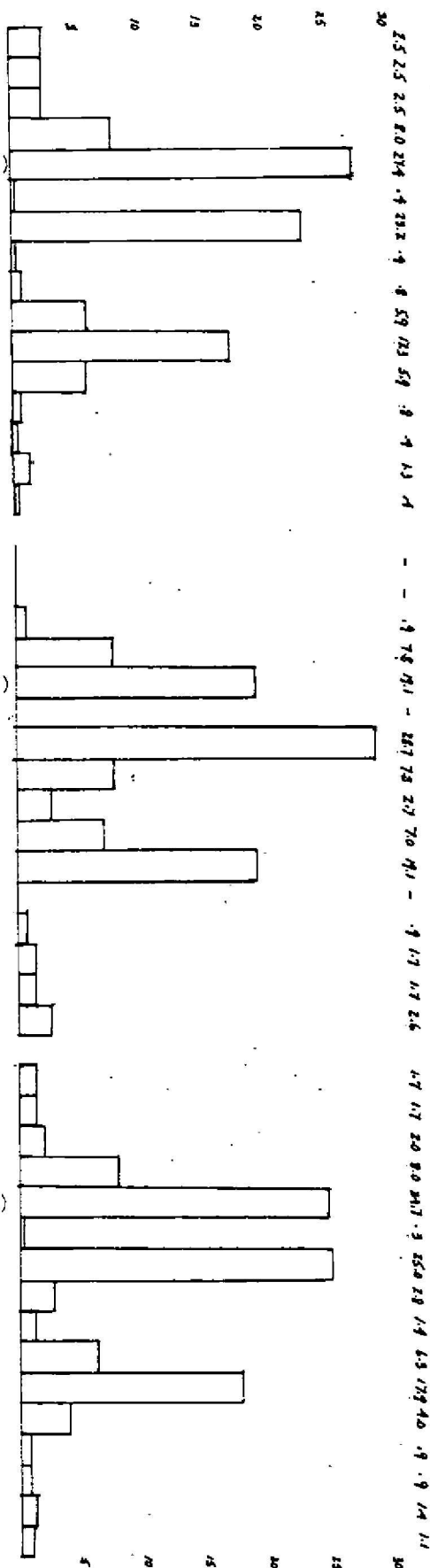


WARE BRACKETED MEDIAN  
DATE(ca.) DATE(ca.)

Porcelain 1660 →  
Porcelain 1745-1795 (1770)  
Porcelain 1800-1830 (1815)  
Creamware 1762-1820 (1791)  
Pearlware 1780-1830/65 (1805/1822.5)  
Lustreware 1790-1840 (1815)  
Whiteware 1820-1900+ (1860)  
Yellowware 1830 →  
Ironstone/  
Graniteware 1840 →  
Redware 18th and 19th C. (1800)  
Stoneware 19th C. (1850)  
Unid. Earthenware  
Earthenware  
Pearlware/Creamware?  
Whiteware/Pearlware?  
Unid.

Porcelain 1660 →  
Porcelain 1745-1795 (1770)  
Porcelain 1800-1830 (1815)  
Creamware 1762-1820 (1791)  
Pearlware 1780-1830/65 (1805/1822.2)  
Lustreware 1790-1840 (1815)  
Whiteware 1820-1900+ (1860)  
Yellowware 1830 →  
Ironstone/  
Graniteware 1840 →  
Redware 18th and 19th C. (1800)  
Stoneware 19th C. (1850)  
Unid. Earthenware  
Earthenware  
Pearlware/Creamware?  
Whiteware/Pearlware?  
Unid.

Porcelain 1660 →  
Porcelain 1745-1795 (1770)  
Porcelain 1800-1830 (1815)  
Creamware 1762-1820 (1791)  
Pearlware 1780-1830/65 (1805/1822.5)  
Lustreware 1790-1840 (1815)  
Whiteware 1820-1900+ (1860)  
Yellowware 1830 →  
Ironstone/  
Graniteware 1840 →  
Redware 18th and 19th C. (1800)  
Stoneware 19th C. (1850)  
Unid. Earthenware  
Earthenware  
Pearlware/Creamware?  
Whiteware/Pearlware?  
Unid.



PITS

TRENCHES

PITS AND TRENCHES

CERAMIC ANALYSIS--EMPIRE STORES, BROOKLYN, NEW YORK

WARE TYPES (PITS AND TRENCHES)

FIG. 3

Appendix No. 8  
The Tunnel Artifacts.

A group of 23 artifacts were presented to me on June 5, 1979 by Chris Nobriga who said that they came from the tunneling excavation in the Main Street area. This area is outside the historic district (Fig. Fig 1, 29), although a little part of the tunnel's curvature may be within range. These specimens are cataloged as No. 118 in the series, with sub-numbers. Six non-artifactual specimens, including 1 piece of wood, 1 oyster shell, 1 snail shell, and 3 animal bones are in the lot from Mr. Nobriga, cataloged as No. 119, with sub-numbers. One specimen, a piece of wood which I personally collected from the tunnel head at Washington Street, is cataloged as No. 120. The most interesting specimen is a Mocha salt shaker, dating between 1790-1825 according to Joan Geismar. In her determinations, the material dates between ca. 1790 to 1840, and probably came from a contemporary dump. The find spot of one artifact was located precisely in the tunnel. A piece of sawed wood was also recovered from a precise point in the tunnel. It is significant that these specimens date from an earlier period than the majority of the specimens from the Empire Stores, indicating that they come from an undisturbed fill deposit. From the depth of the fill (Fig. 10), it would appear that the top part of the tunnel was the artifact bearing section. However, some fill did penetrate into the organic silt deposit. The depth from street to the tunnel crown at bore hole No. 34 is about 12 feet.

## Appendix No. 8 (Continued)

## Cat. No. 118

1. Shoe sole of leather, hand stitched (?), right or left, before 1846 (?).
2. Piece of red brick, grit tempered.
3. Three unidentified leather fragments.
4. Platter, creamware fragment, undecorated, ca. 1775-1820.
5. Fragment redware, interior and exterior glazed, 18-19 cent.
6. Fragment plate slipware redware, 18-19 cent.
7. Rim fragment creamware platter undecorated, ca. 1775-1820.  
This is a special piece because of an inscription on it.  
A practical jokester among the tunnel crew had inscribed the legend in German, "Liebe Mütter Von Clause 1642". Confirmed by Chris Nobriga.
8. Mocha ware salt shaker, complete, red, ca. ? 1790-1825.
9. Glass base, pontil marked. Base very worn, probably reused tumbler or bottle. Prior to 1850.
10. Bottle fragment, before 1825.
11. Bottle fragment, before 1850, about 1840 or earlier.
12. Two glass sherds, possibly part of No. 10.
13. Fragment redware ceramic, interior and exterior glaze, 18-19 cent. Possibly 18th cent. because of shape.
14. Part of a shallow bowl or plate, hand decorated creamware, ca. 1820-1840.
15. Base of redware bowl (crock?), interior and exterior glazed, 18-19 cent.
16. Fragment green shell edge plate, pearlware rim, well made shallow bowl or plate, ca. 1780-1830.
17. Fragment redware architectural slab, interior glazed, not dated.
18. Base red ware crock or bowl, exterior and interior glazed, 18-19 cent. Recovered by tunnelers 3/28/79 at Station N 12+ 90, L of E at crown, Herman Clause, Fred Gollob, C.W. Nobriga.
19. Fragment red brick, grit temper.
20. Burned fragment of wooden barrel cover.

## Appendix No. 8 (continued)

## Non-artifactual remains.

## Cat. No. 119

1. oyster shell
2. snail shell, land
3. piece of sawed wood from tunnel, "Station N.13+50. E. 16" down from crown 13" Ø across face 12N to 4 PM shift 4/6/79."
4. Long bone cattle, sawed at both ends.
5. Large rib, butchered on distal end, cattle (?).
6. Metapodial bone, mature animal, small.

## Cat. No. 120

1. Piece of wood log collected in tunnel at Washington Street head June 5, 1979 by R. Solecki.

## Appendix No. 9

Empire Stores: Artifact Storage Sheet May 21, 1979

Box No.	Pit/ Trench No.	Cat. No.	No. of Bags or Containers
1	Trench 1	048	2
		049	2
		050	1
		054	2
	Trench 2	044	1
		045	2
		046	2
	Trench 3	052	8
	Trench 4	053	1
		misc.	1
2	Pit 2	008	3
		008B	1
		081	1
		078	1
		086	1
		085A	1
		085B	1
		085C	1
	Pit 5	032	2
		035	3
		033	1
	Pit 6	071	1
		074	1
		055	1
	Pit 7	014	2
		089A	1
		089B	1

Box No.	Pit/Trench No.	Cat. No.	No. of Bags or Containers
3	Pit 3	018	1
		093	1
		097A:	2
		097B:	1
		096:	1
		098:	1
		017A:	1
4	Pit 3:	097B:	4 + Bottles(Whole)
5	Pit 4	103	2
		104	1
		023-	1
		024:	2
		031	1
		028:	1
		107	1
		Misc.	2
	Pit 9:	Brick	1
		100:	1
		102	1
		019:	1
		019B	2
		019C	1
		Misc.(leatner)	1
		Misc.	1
		Pit 10	112
		112	1
6	Pit 11	076:	1
		073	2
		091	1
		016	2
		Misc.(Bricks)	1
	Pit 12	004	1
		065	1
		006	1
		068	1

Box No.	Pit/Trench No.	Cat. No.	No. of Bags or Containers
6	Pit 13	004	1
		Misc.	1
	Pit 14	037	1
		038	1
		038B	1
		116	1
		115	1
	Pit 15	110	1
		029	1
		029	1
		Misc.(Flagstone)	1
7	Pit 16	051	2
		095	1
		099	1
	Pit 17	063	1
		003	1
		070	1
	Pit 18	090	1
		080	2
		084	1
	Pit 19	106	1
		025	1
		026	1
		109	1
	Pit 21	042	1
		023	1
		041	1
		113	1
		117	1



Box	Pit/Trench No.	Cat. No.	No. of Bags or Containers
8	Pit 22	091	1
		092	1
		Misc.	1
	Pit 23	111	1
		114	1
	Pit 24	040	1
	Pit 25	101	1
		021	3
		105	1
		108	1
	Pit 26	007	2
		075	1
		077	1
		083	1
		009	1
		082	1
		087	1
	Manhole 5	-	1
	--	--	Misc. Metal
9	--	--	Misc. Metal

Complete Count of Artifacts from the Empire Stores Site.

	Pits	Trenches	Total
Architectural (building artifacts)			
Brick and Brick frags.	58	1	59
Slate	-	4	4
Marble slab	-	1	1
Roof tiles	17	10	27
Drain-pipe(ceramic)	1?	1	2
Plaster frags.	<u>3</u>	<u>3</u>	<u>6</u>
	79	20	99
Glass			
Identified and analyzed bottles	109	32	141
Window glass frags.	23	7	30
Unidentified/unanalyzed frags.	<u>139</u>	<u>13</u>	<u>152</u>
	271	52	323
Metal			
Nails	13	10	23
Spikes	3	-	3
Nails/Spikes	2	-	2
Hooks	1	-	1
Bolts	3	-	3
Rods	8	4	12
Horseshoes	2	-	2
Carriage hardware	1	-	1
Hinges	1	2	3
Key plate	1	-	1
Copper wire/screen	-	2	2
Copper frags., unidentified	2	1	3
Brass tubing	1	-	1
Bucket frags.	4	-	4
Unidentified	<u>16</u>	<u>2</u>	<u>18</u>
	58	21	79

	Pits	Trenches	Total
Ceramics			
Identified and analyzed	237	115	352
Pipe frags.	20	8	28
Unidentified/unanalyzed frags.	18	-	18
	<u>275</u>	<u>123</u>	<u>398</u>
Leather			
Shoe frags.	40	16	56
Unidentified	4	1	5
	<u>44</u>	<u>17</u>	<u>61</u>
Miscellaneous			
Coal	24	2	26
Cinders/slag	6	3	9
Coin, copper penny corroded	-	1	1
Flint frags.	1	-	1
Flint/Jasper frags.	1	-	1
	<u>32</u>	<u>6</u>	<u>38</u>
A. Subtotal	<u>759</u>	<u>239</u>	<u>998</u>

In addition, the pits contained:

- 2 Champion spark plugs.
- 4 pieces of conglomerate iron and stone
- 1 piece of dressed sandstone
- 1 "Octagon" lock
- 1 Schaeffer beer can
- 1 flagstone frag. (Sample of many in Pit 16)
- 3 porcelain electric/plumbing fixture frags.
- 1 church-key bottle opener
- 1 Delmonte Fruit Cocktail can, with label
- 1 aluminum and plastic basting brush
- 1 tin fish fork
- 1 lamp part, cranberry glass, "Wizzard"
- 1 bone object with nail through center

B. Subtotal 19

A. Subtotal 998 plus B. Subtotal 19 equals 1017 specimens.

	Pits	Trenches	Total
<u>Faunal Materials</u>			
Bones <sup>1</sup>			
Bird	1	2	3
Fish	1	-	1
Pig: ( <u>Sus</u> )	2	3	5
Sheep ( <u>Ovis</u> )	3	6	9
Cattle ( <u>Bos</u> )	19	11	30
Unidentified	<u>32</u>	<u>6</u>	<u>38</u>
Subtotals.	58	28	86
Teeth			
Sheep ( <u>Ovis</u> )	1	-	1
Cattle ( <u>Bos</u> )	<u>3</u>	<u>-</u>	<u>3</u>
Subtotals:	4	-	4
Shells:			
Clam	20	5	25
Oyster	135	22	157
Unidentified	<u>5</u>	<u>1</u>	<u>6</u>
Subtotals:	160	28	188
<u>Total Faunal Materials:</u>			<u>278</u>
TOTAL ARTIFACTS:	<u>1000</u>	<u>295</u>	<u>1295</u>

- 
- 1 Of the animal bones, 14 from the pits and 7 from the trenches were sawed. In all 21 of the 83 bones, or 25% of the animal bones show evidence of butchering.

## Bibliography

Anonymous.

1960 List of Paved Streets in the Borough of Brooklyn on January 1, 1960. The City of New York, Borough of Brooklyn.

Armbruster, Eugene L.

1919 The Ferry Road on Long Island. New York, New York.

Bolton, Reginald F.

1920 New York City in Indian Possession, Indian Notes and Monographs. Museum of the American Indian, Heye Foundation, New York.

Bonner

1924

Brooklyn Street Directory, Brooklyn. In Long Island Historical Society, Brooklyn.

Burt, Leevan M., compiler

1943 History of Paved Streets in Brooklyn, Annotated Volume at the Department of Transportation, Worth Street, New York, New York.

Furman, Gabriel

1865 Notes, Geographical and Historical Pertaining to Brooklyn with Notes and a Memoir of the Author. Reprinted, E.B. Spooner and Sons, Philadelphia.

Furman, Gabriel

1874 Antiquities of Long Island. Edited by Frank Moore. J.W. Bouton, Publisher, New York, New York.

Furman, Robert and Consuelo Furman

1937 Furman Homes and Sites. Privately printed, Polographic Co. of America, New York, New York.

Landmarks Preservation Commission Report, Fulton Ferry Historic District Designation Report. City of New York.

Rennie, Leonard C. et al.

1974 Museum Consultant's Narrative Report, New York State Maritime Museum. New York State Office of Parks and Recreation, Albany.

Rosan, Richard et al.

1972 Fulton Ferry. Office of Downtown Brooklyn Development, Office of the Mayor; Brooklyn Office, Department of City Planning, and Office of Brooklyn Development, Housing and Development Corporation, City of New York.

Stiles, Henry R.

1867 A History of the City of Brooklyn. 3 Volumes. Brooklyn, New York.

Stiles, Henry R.

1884 The Civil, Political, Professional and Ecclesiastical History and Commercial and Industrial Record of the County of Kings and the City of Brooklyn, New York from 1683 to 1884. 2 Volumes. W.W. Munsell Co.

Plates\*

1. Looking northeast over Fulton Street toward the Empire Stores, the long series of buildings with arched windows in the upper center of view.
2. Looking southwest over the roofs of the Empire Stores in the foreground toward Manhattan.
3. Looking South up Main Street from the corner of Main and Plymouth Streets. Empire Stores on the right.
4. Looking southeast at Empire Stores, corner of Plymouth and Main.
5. Front of 2-14 Main Street, Empire Stores.
6. Detail front of Empire Stores.
7. Facade of the Empire Stores on the East River.
8. Front of Empire Stores on the East River looking toward Brooklyn Bridge.
9. Using the bucket and pulley in the pit excavations.
10. Excavation at Adams and Plymouth Street in fill deposit, outside of historic district area.
11. Pit excavation in front of Empire Stores showing water level.
12. Excavation of pits showing demasted pilings. Hose is for dewatering.
13. Excavation underway in front of Empire Stores.
14. Finished excavation in front of Empire Stores, looking north.

---

\* All photographs by R. Solecki

## Plates (Continued)

15. At work in pits in front of Empire Stores looking north.
16. The rotted pilings stumps on waste heap outside Empire Stores.
17. Trench 2 inside Empire Stores, work underway.
18. Trench 1 inside Empire Stores, filling in excavation.
19. Anne Donadeo ~~screening~~ soil from pit excavations using water hose.
20. Trench 4 inside warehouse where burned floor boards were found.
21. Trench 3 inside warehouse.
22. Trench 4 excavation inside warehouse. M. Alterman in attendance.
23. The burned floor boards at the base of Trench 4 marking the presence of a previous structure, presumably a warehouse burned in 1869.
- 24a. Cast iron object ca. 2 feet long, presumably part of a horse collar (Cat. No. 035, pit 5).
- b. Part of a balance beam (?) (Cat. No. 021, pit 25).
- c. Iron rod (Cat. No. 021, pit 25).
- d. Iron hinge part (Cat. No. 024, pit 4).
- e. Copper plate (from roof?) (Cat. No. 021, pit 25).
25. a, b. Two examples for red bricks from excavations.



- Plate 26 a: (E.S. Pit 3-097B-59) medicine or perfume bottle, ca. 1850-1870.  
 b: (E.S. Pit 3-097B-66) "J. & A. Dearborn New York", (XXX reverse), porter or ale, ca. 1860.  
 c: (E.S. Pit 3-097B-65) "Alex Eagle Mineral Water", mineral water, ca. 1860.  
 d: (E.S. Pit 3-097B-64) "M.B. & Co. 97 W. 35 N.Y.", mineral or soda water, ca. 1856-1861.  
 e: (E.S. Pit 4-023-2) "R. Robinson 376 Bowery, N.Y.", (XX reverse), soda water (?), ca. 1859-1864.  
 f: (E.S. Pit 3-097B-67) "T & W", mineral or soda water, ca. 1861-1879.

- Plate 27 a: (E.S. Pit 4-103-2) pie plate fragments, whiteware, cobalt stenciling underglaze on face: "Roberts & Co., Pie Plate, 274 Hudson...Brooklyn", ca. 1865-1870.  
 b: (E.S. Pit 4-103-1) plate fragments, whiteware, stamped underglaze on reverse: "Jas. Edwards & Sons DeAlahall", ca. 1851-1882.

- Plate 28
- a: (E.S. Pit 5-033-3) blue shelledge plate fragment, pearlware, ca. 1800-1820.
  - b: (E.S. Tr. 2-045-5) blue shelledge plate fragment, pearlware, ca. 1800-1820.
  - c: (E.S. Pit 26-082-1) green shelledge plate fragment, pearlware, ca. 1780-1830.
  - d: (E.S. Pit 25-021-1) green shelledge plate fragment, pearlware, ca. 1780-1830.
  - e: (E.S. Tr. 2-045-4) green shelledge plate fragment, pearlware, ca. 1780-1830.
  - f, g: (E.S. Pit 19-026-3) two cup rim fragments, blue floral painted underglaze, pearlware, ca. 1780-1820.
  - h: (E.S. Pit 19-026-2) cup rim fragment, blue, brown and ochre design with brown stripe painted underglaze, pearlware, ca. 1790-1820.
  - i, j: (E.S. Tr. 3-052-59) two bowl rim fragments, blue and brown "fingerpaint" with brown stripes, pearlware, ca. 1790-1820.
  - k: (E.S. Pit 9-102-5) plate base, blue "Chinoiserie" painted underglaze, pearlware, ca. 1800-1830.
  - l: (E.S. Pit 10-112-1) bowl fragment, blue chinese pattern painted underglaze, pearlware, ca. 1800-1830.
  - m: (E.S. Pit 9-019B-1) bowl base fragment, blue design, Canton, porcelain, ca. 1800-1830.

- Plate 29 a: (E.S. Pit 25-108-1) unidentified fragment, grey-blue glazed exterior with white cherubim relief, blue puddling on relief glaze, bluish tint on white exterior glaze, whiteware, ca. 1840's.
- b: (E.S. Tr. 2-046-3) plate base and rim fragment, sprigged-on-floral design, lavender on white (Chelsea-type), granite-type ware, post 1840's.
- c: (E.S. Tr. 2-044-4) unidentified base fragment, cranberry-colored transfer printed manufacturer's mark, "IM...ELSMO..." (Elsmore and Foster\*), whiteware, ca. 1853-1871.
- d: (E.S. Tr. 3-052-25) unidentified base fragment, cobalt blue house and tree transfer print, pearlware, ca. 1795-1830.
- e: (E.S. Tr. 3-052-71) unidentified base fragment, printed manufacturer's mark, "Imperial Ironstone China Henry Alcock...", ironstone, ca. 1861-1910.
- f: (E.S. Pit 5-032-4) plate(?) fragment, Willow pattern transfer print, rim design, pearlware, ca. 1795-1840.
- g: (E.S. Pit 9-0190-3) plate(?) fragment, Willow pattern transfer print, rim design, pearlware, ca. 1795-1840.
- h: (E.S. Pit 14-038-2) plate rim and body fragments, dark blue Willow pattern transfer print, manufacturer's printed mark "L" or "I"...ON STONE...", whiteware (ironstone), ca. 1820-1900+.

\*identified by D. and J.G. Stradling.

Plate 30 a: (E.S. Pit 12-006-1) redware plate fragment, slipware design "A...", lead glaze on face, ca. 18th and 19th century.  
b: (E.S. Pit 4-103-4) bottle base, "Ricketts & Co. Bristol", ca. 1821-1853.

### Figures

1. The Fulton Ferry Historic District. From the Landmarks Preservation Commission, New York City.
2. Historic Buildings in the Historic District Showing the Location of the Empire Stores. From the Landmarks Preservation Commission, New York City.
3. The Empire Stores (Coffee Warehouse) at 2-14 Main Street, Brooklyn, From the Landmarks Preservation Commission, New York City.
4. Location of New Ferry, or the Catherine Street Ferry.
5. Brookland Ferry, ca. 1766-7. From Henry Stiles, History of the City of Brooklyn, 1867, Vol. 1, p. 310. Brooklyn. Map drawn before the New Ferry was put in.
6. The Ancient Shore Line Superimposed on the Ferris Map 1855 Street Plan of Brooklyn.
7. Floor plan of the Empire Stores. From the Rennie (1972) report.
8. Plan of the Empire Stores. Red Hook Water Pollution Control Project, Contract 1 A Engineer's Drawing.
9. Plan of the Route of the Sewer in old "Olympia". From Red Hook Water Pollution Control Project, Contract 1 A Engineer's Drawing.
10. Section of Geological Stratigraphy Including Section Between Water Street and Plymouth on Main Street (Bore Holes 35 to 31). Engineer's Drawing, R.W.P.C.P. Contract 1A.
11. Section of Supplemental Geological Borings in Front of Empire Stores Showing Depth of Fill. Engineer's Drawing, R.W.P.C.P., Contract 1A.
12. Plan Showing Location of Sewer and Man Hole No. 5 With Relation to the Coffee Warehouse. From Engineer's Drawing, R.W.P.C.P. Contract 1A.

Figures (Continued)

13. Plan of Front of Empire Stores Showing Location of Pits 1-5, Borings (Supplemental) 1-3, and Section of Wall Foundation. From Engineer's Drawing, R.W. P. C. P. Contract 1A.
14. Empire Stores Showing Locations of Interior Trenches 1-4 and Exterior Test Pits 1-5. From Michael Alterman.
15. Sample of Underpinning and Foundation Constructors, Inc. Daily Report of Work at 2-14 Main Street (Coffee Warehouse).
16. Details of Specifications for Support of East Wall Coffee Warehouse by Underpinning and Foundation Constructors.
17. Test Pit No. 2 (New Pit No. 6 in Sequence of 26 Numbered Pits) Section. From Paul R. Huey.
18. Test Pit No. 3 (New Pit No. 12 in Sequence of 26 Numbered Pits) Section. From Paul R. Huey.
19. Sample of Data Record Cards. From M. Alterman and A. Donadeo.
20. Section of Trench 1 Inside Coffee Warehouse. From M. Alterman.
21. Section of Trench 3 Inside Coffee Warehouse. From M. Alterman.
22. Section Pit 12 (Paul Huey's Test Pit No. 3) Showing Wood Beams in Place. From M. Alterman.
23. Cut Block of Wood Found In Place in Manhole No. 5 in Main Street. From M. Alterman.
24. Section Pit 3. From A. Donadeo.
25. Section Pit 4. From A. Donadeo.
26. Section Pit 5. From M. Alterman.
27. Sections Pit 9. From A. Donadeo.
28. Section Pit 22. From A. Donadeo.
29. Plan of Route of Intercepting Sewer at Front, Main and Plymouth Streets. From Engineer's Drawing, R.W. P. C.P., Contract 1A. Empire Stores Not Shown.

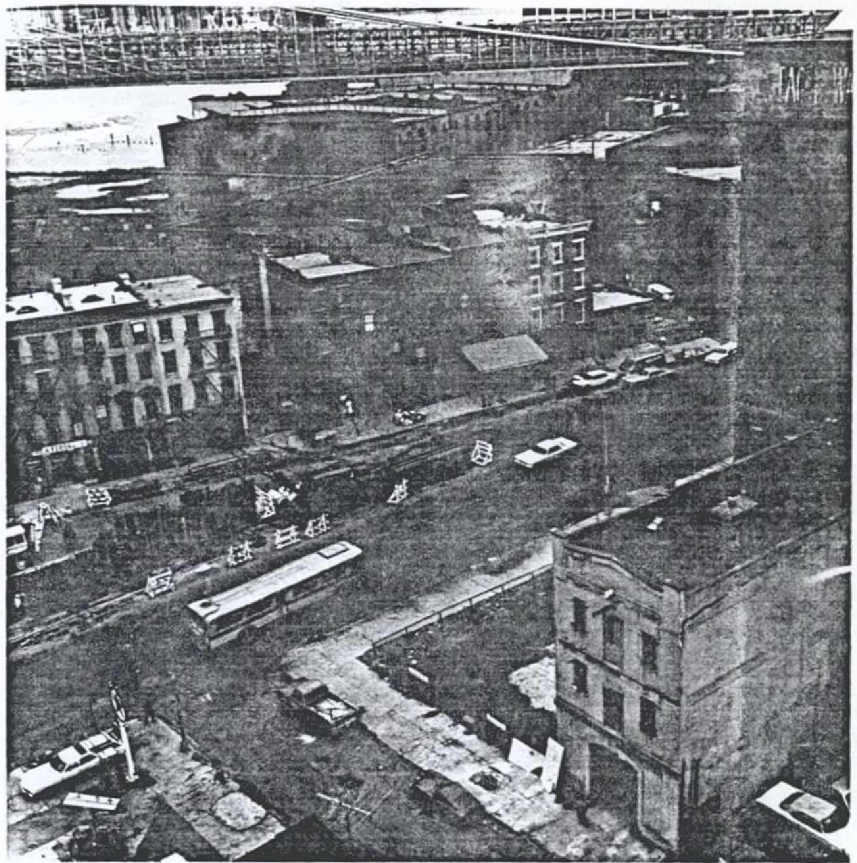


Plate 1

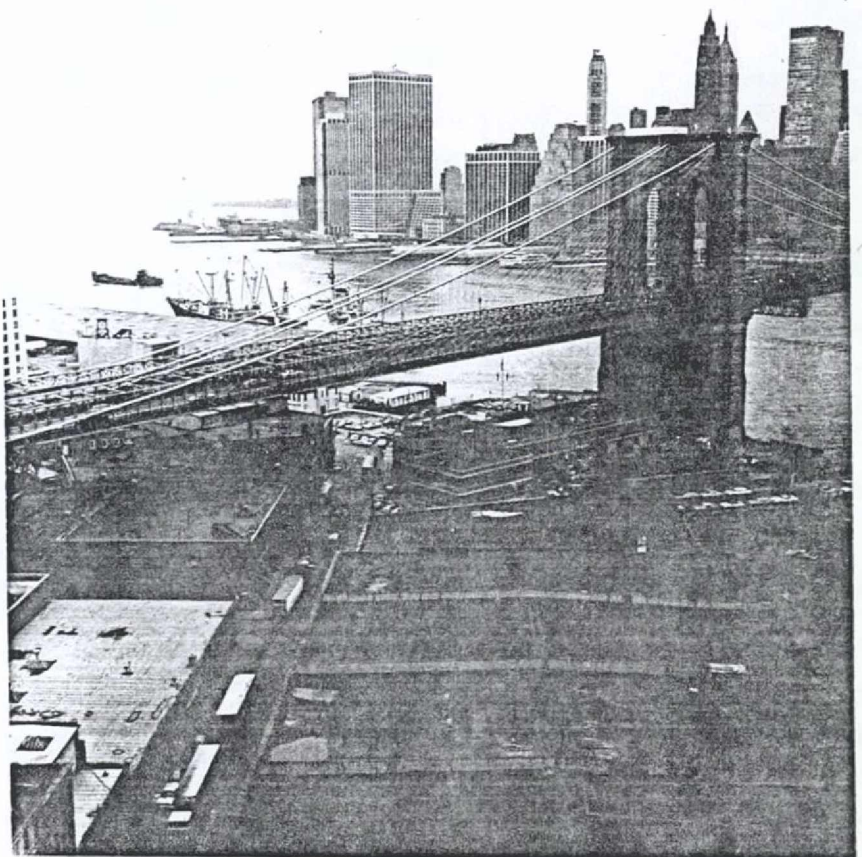


Plate 2



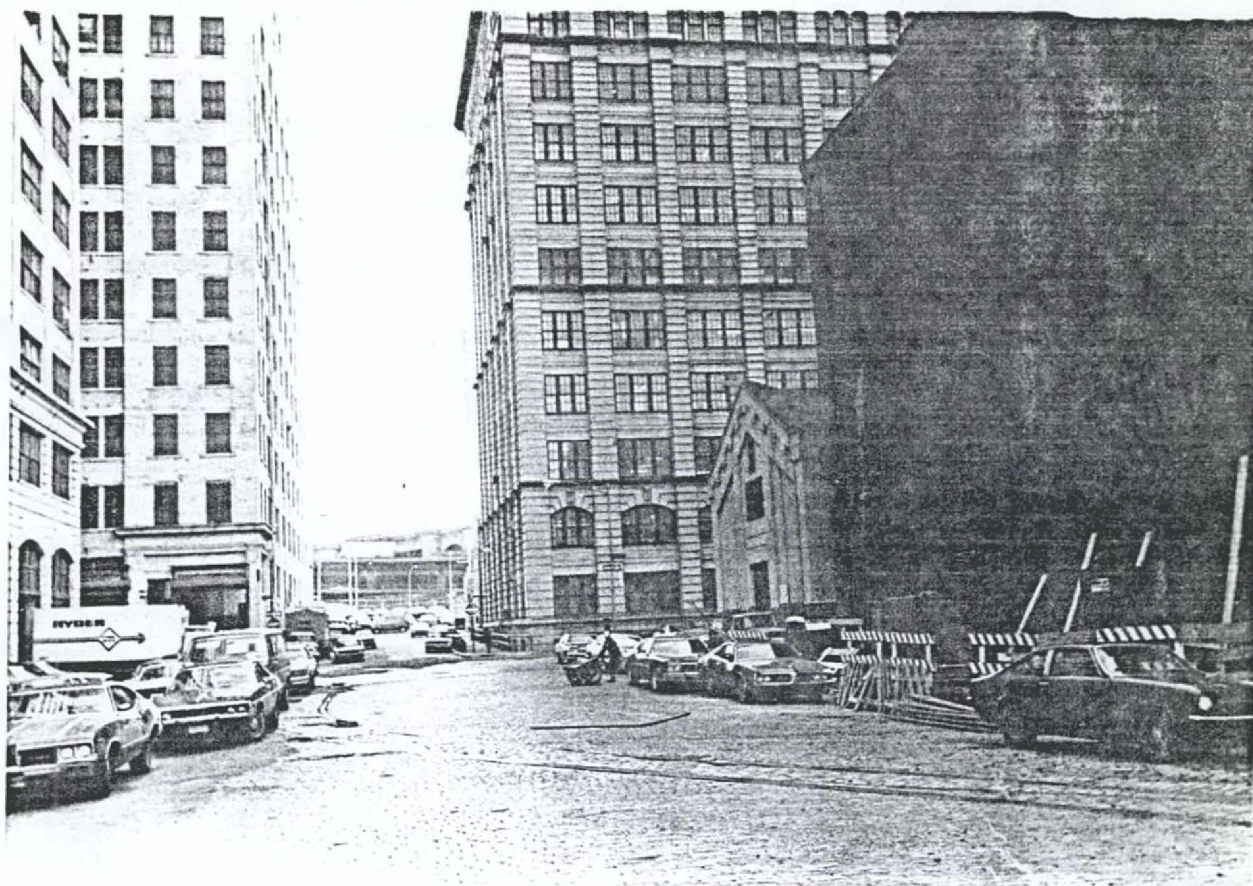


Plate 3

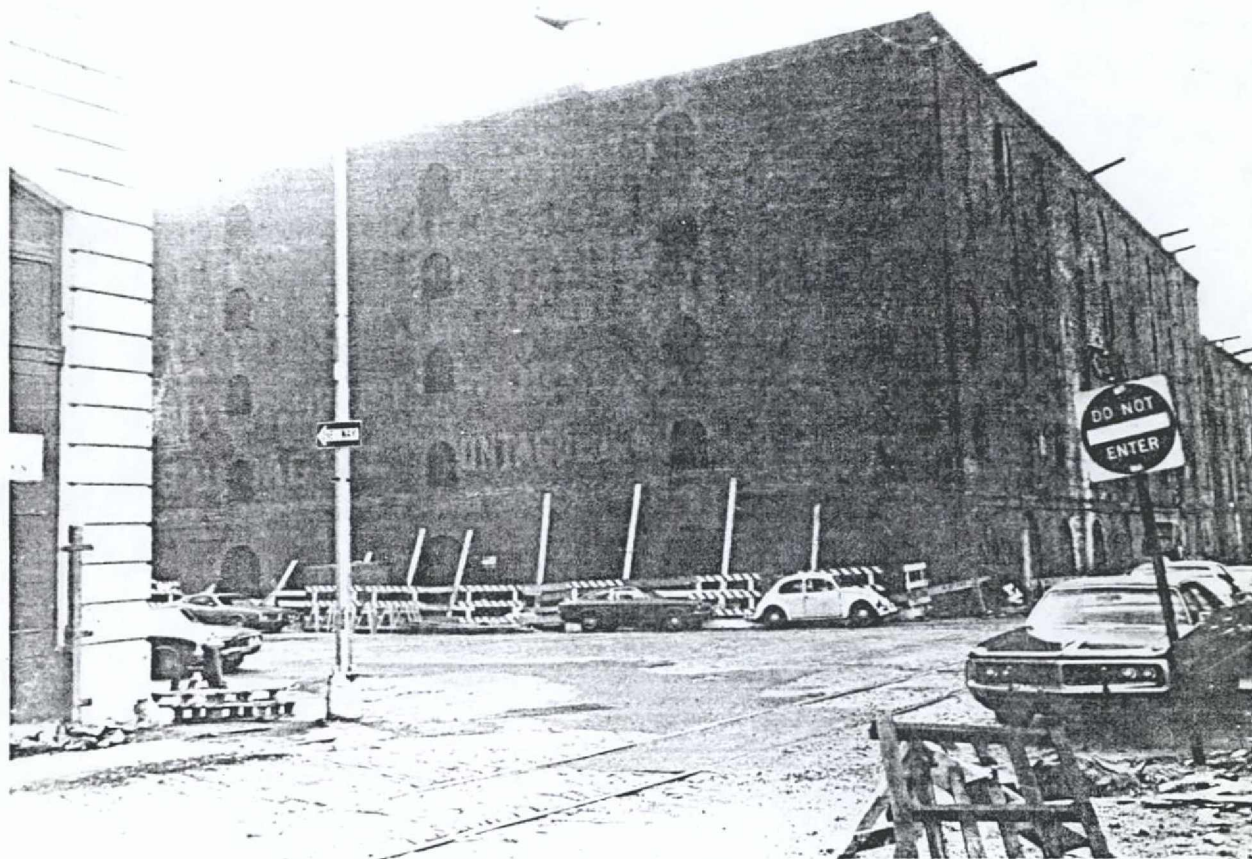


Plate 4



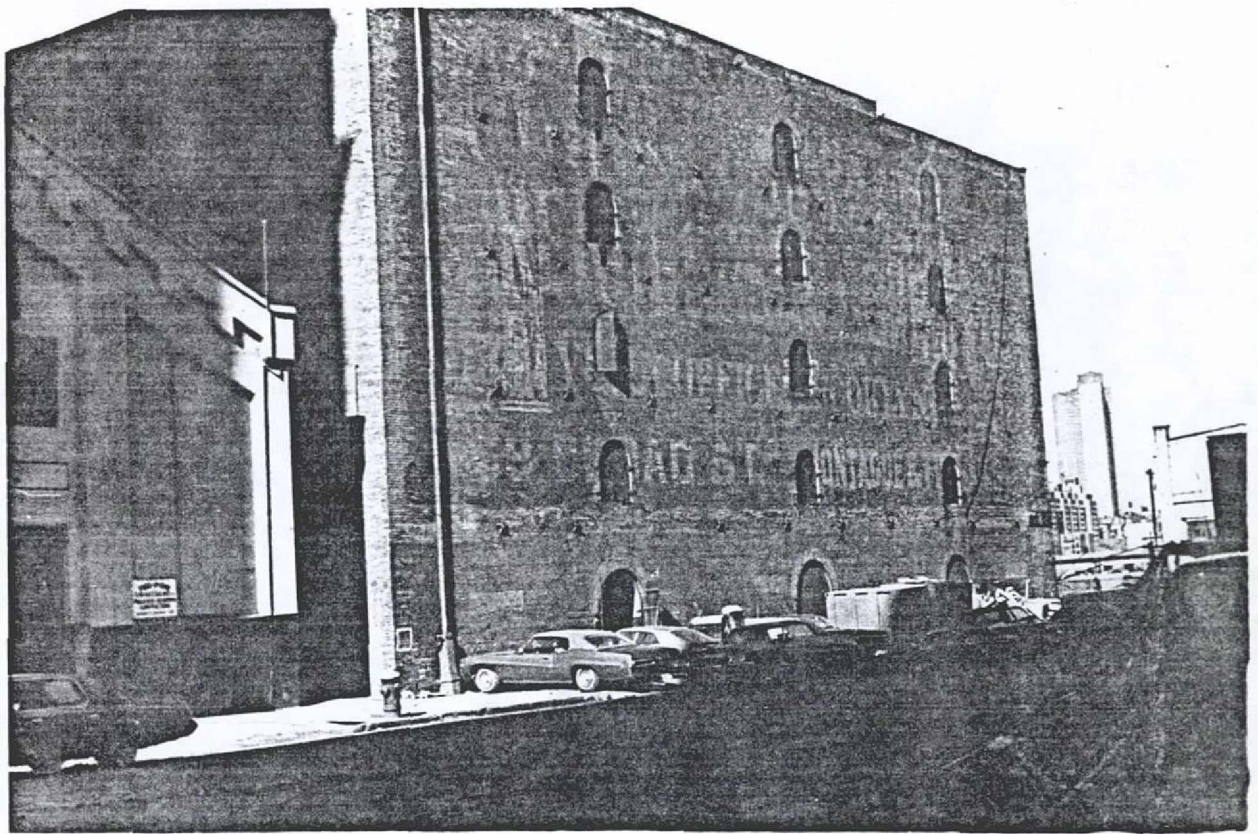


Plate 5

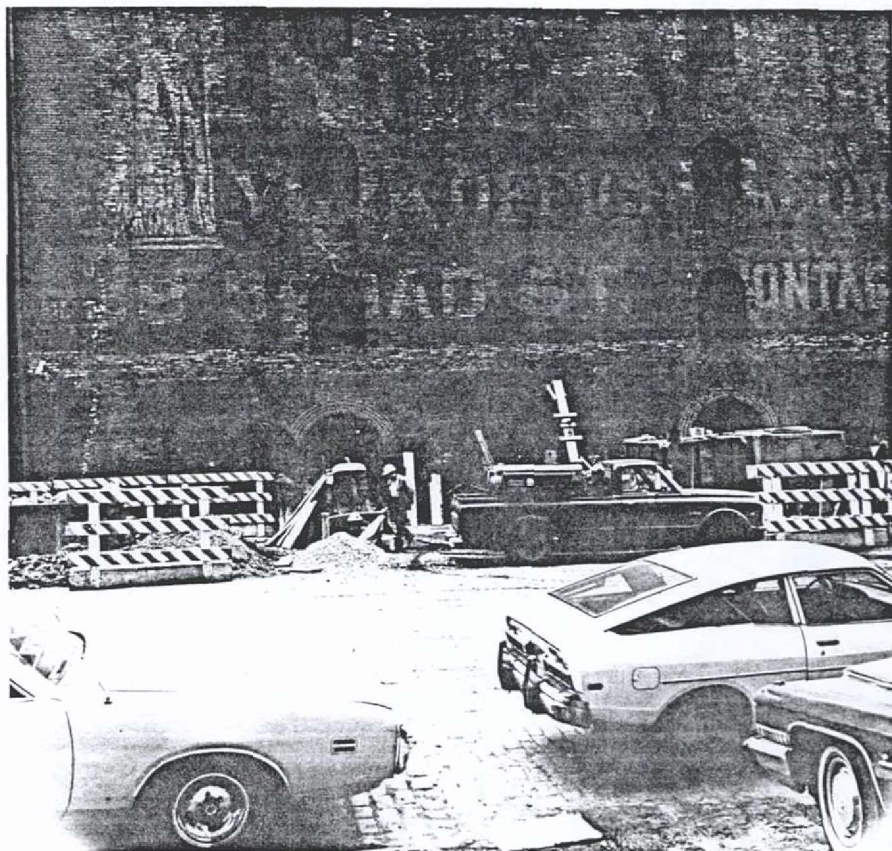


Plate 6



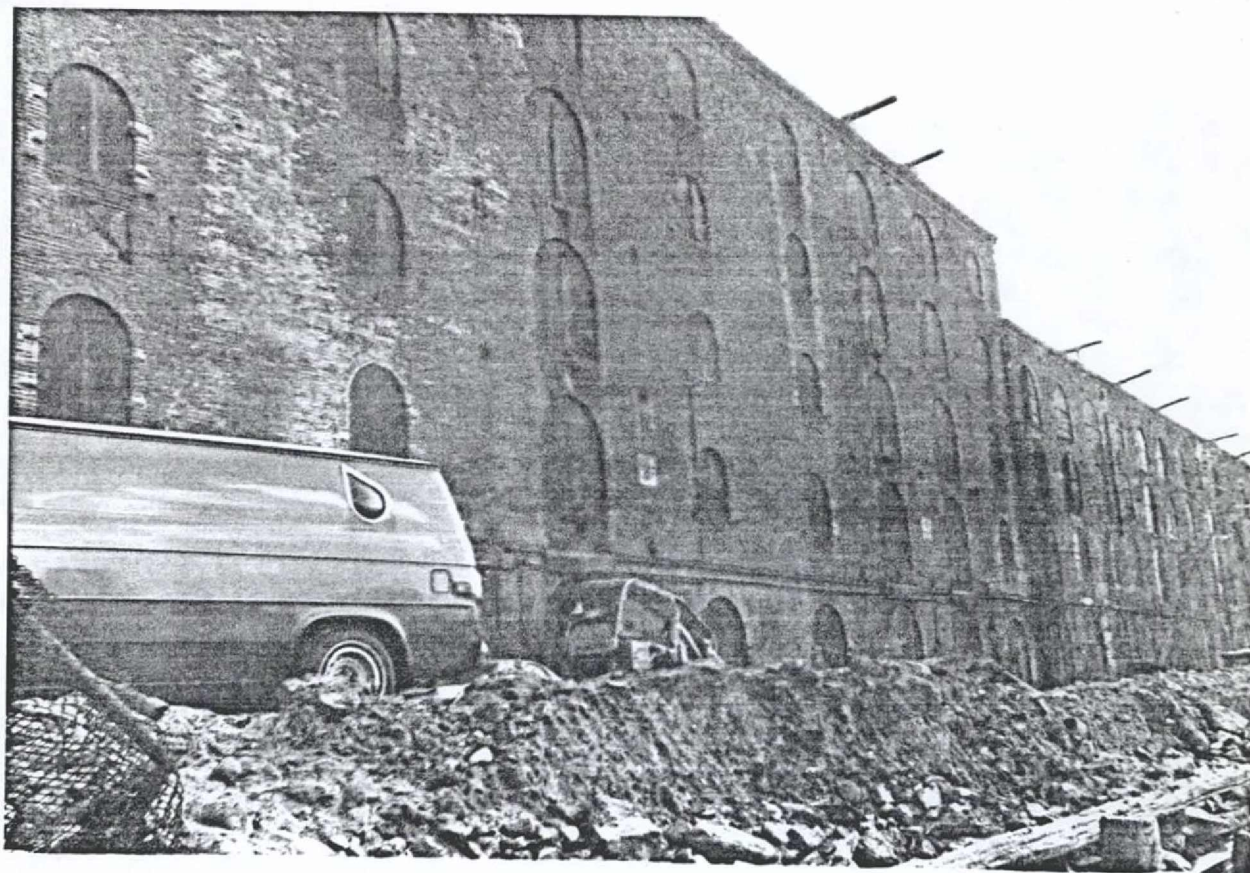


Plate 7



Plate 8



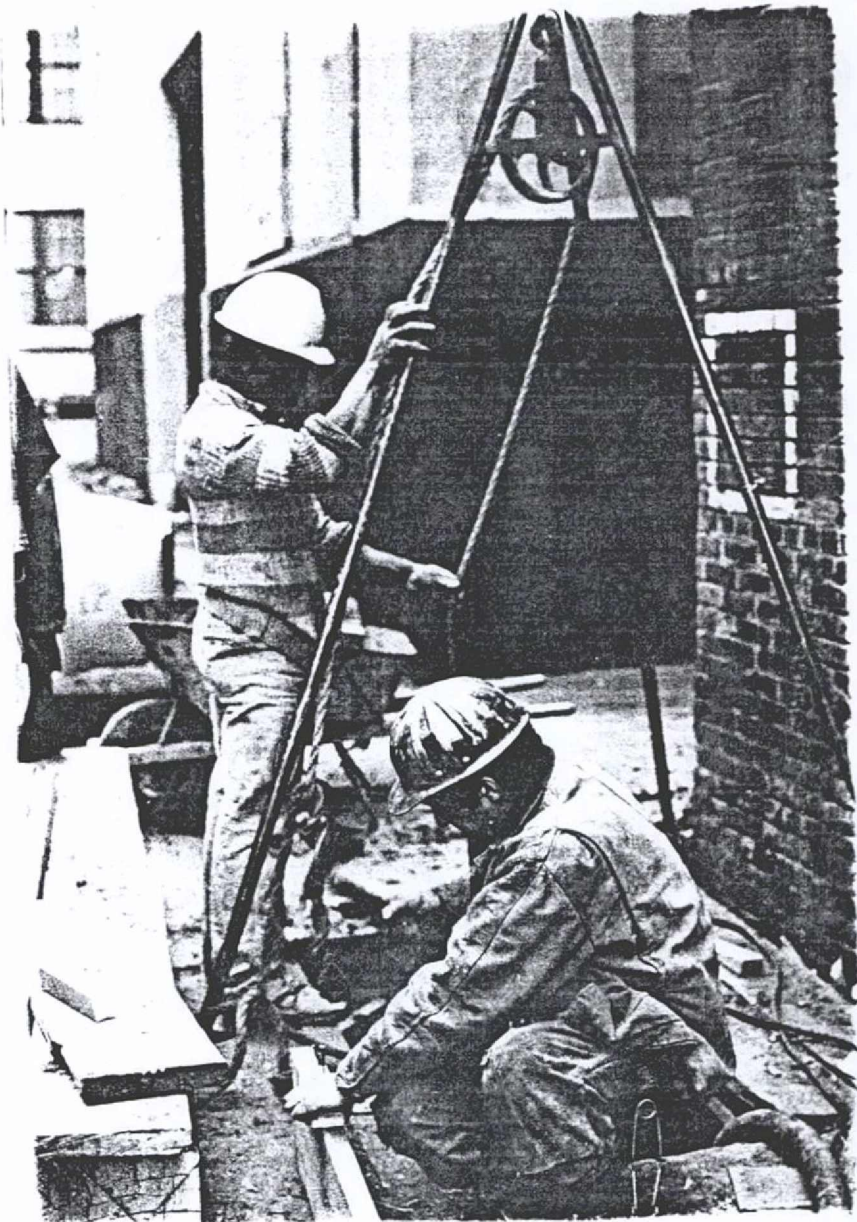


Plate 9

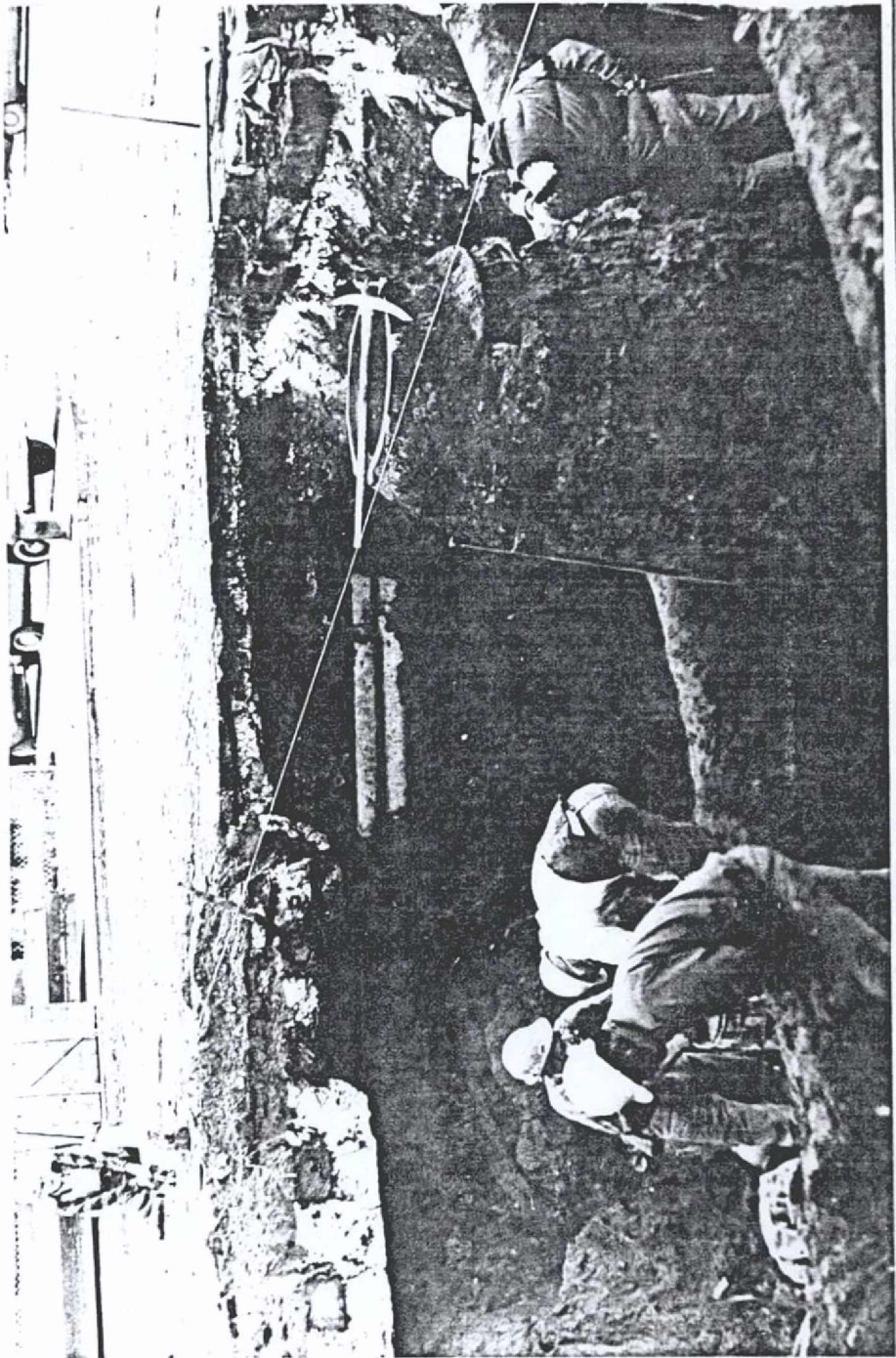


Plate 10



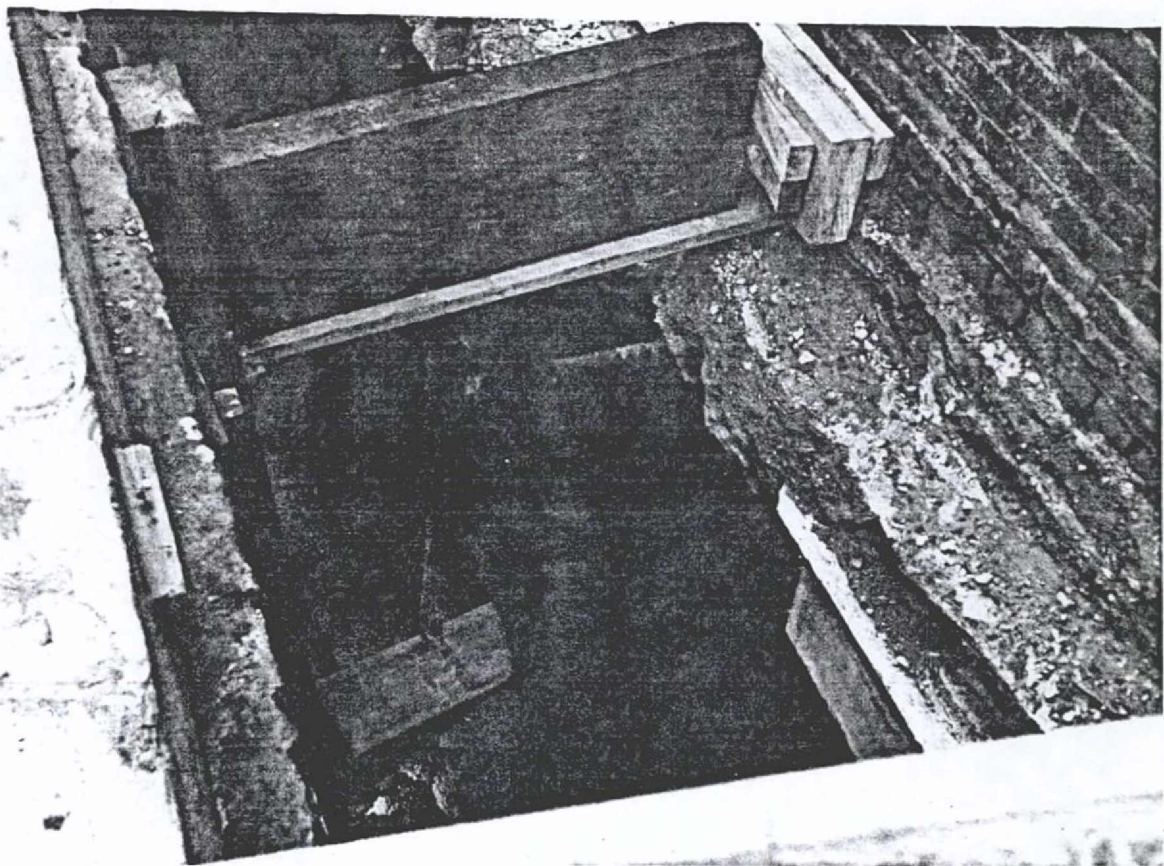


Plate 11

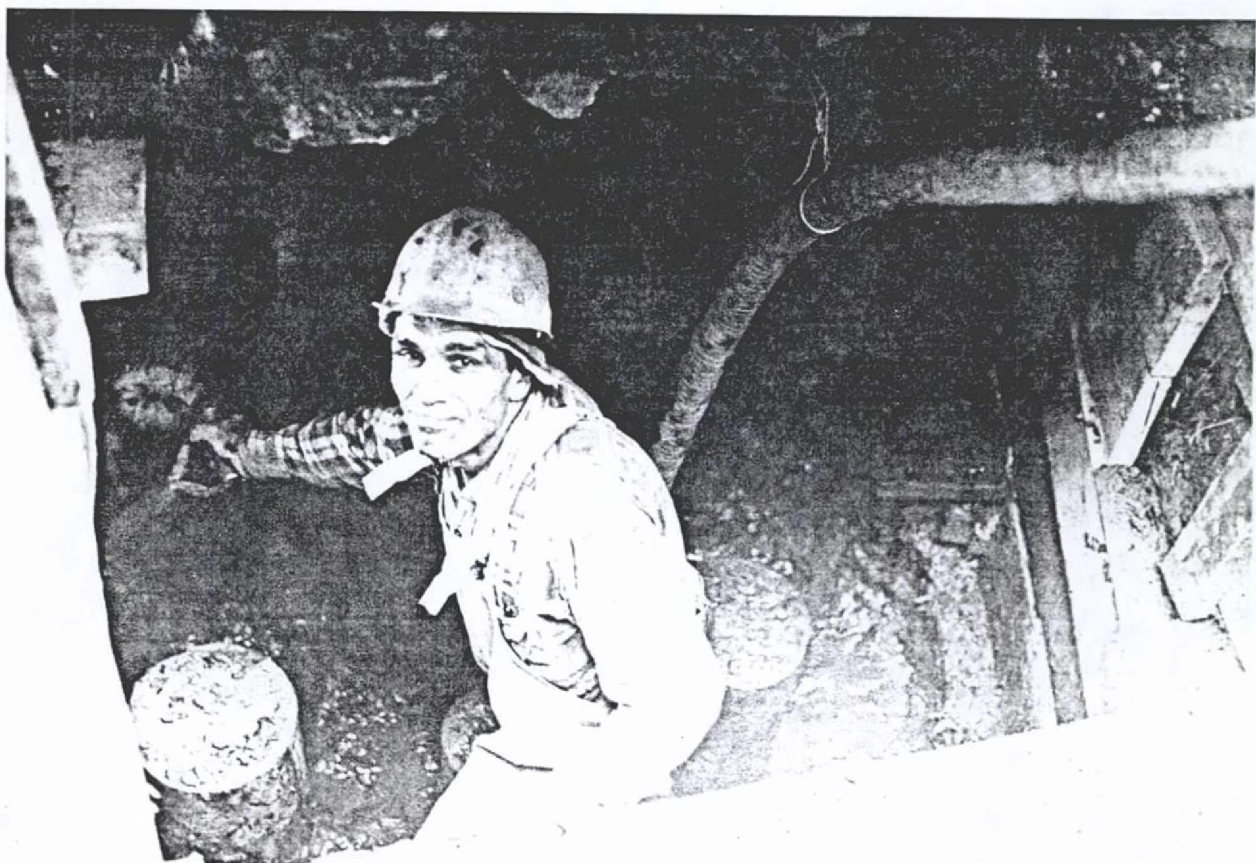


Plate 12



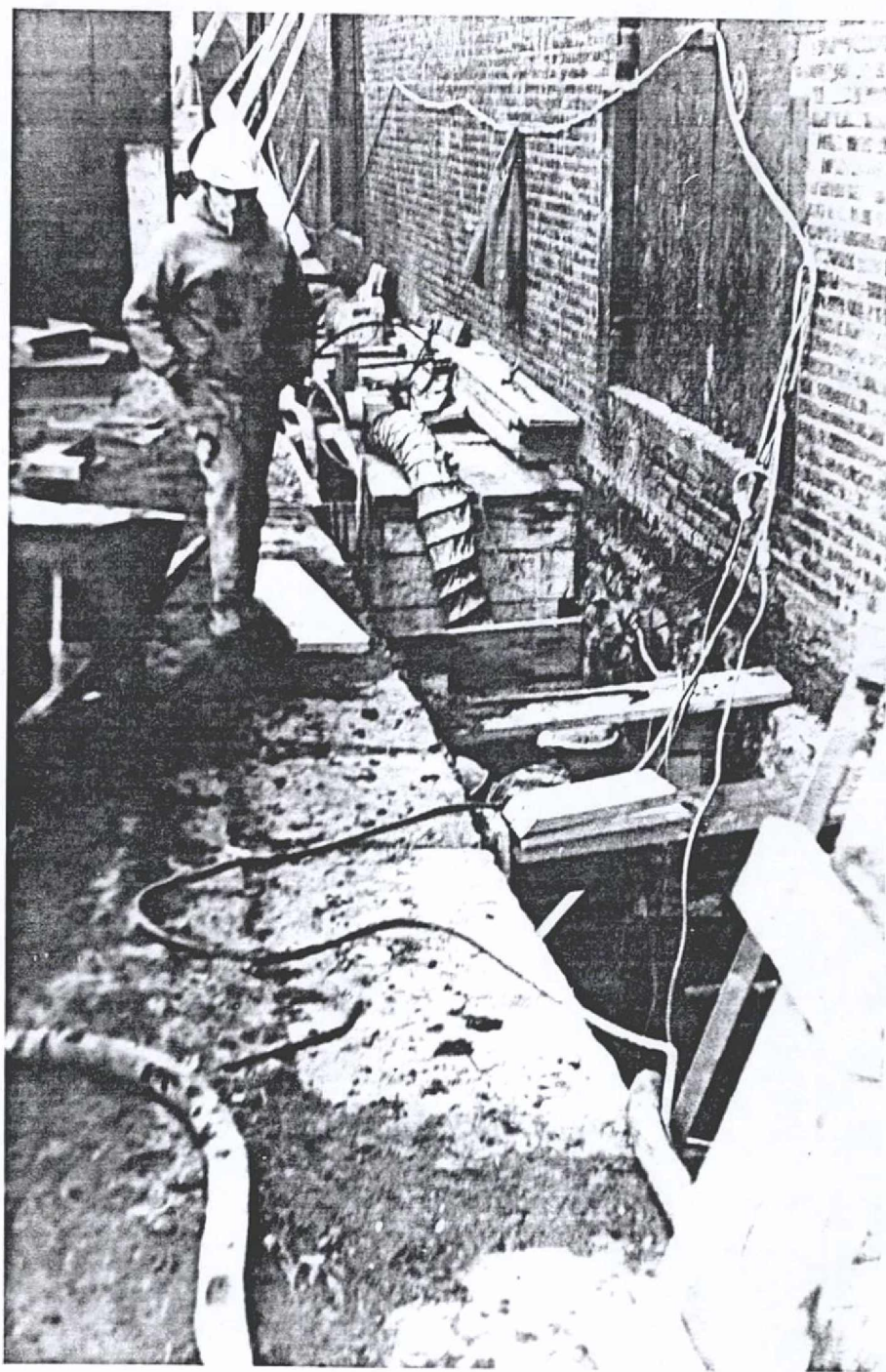


Plate 13



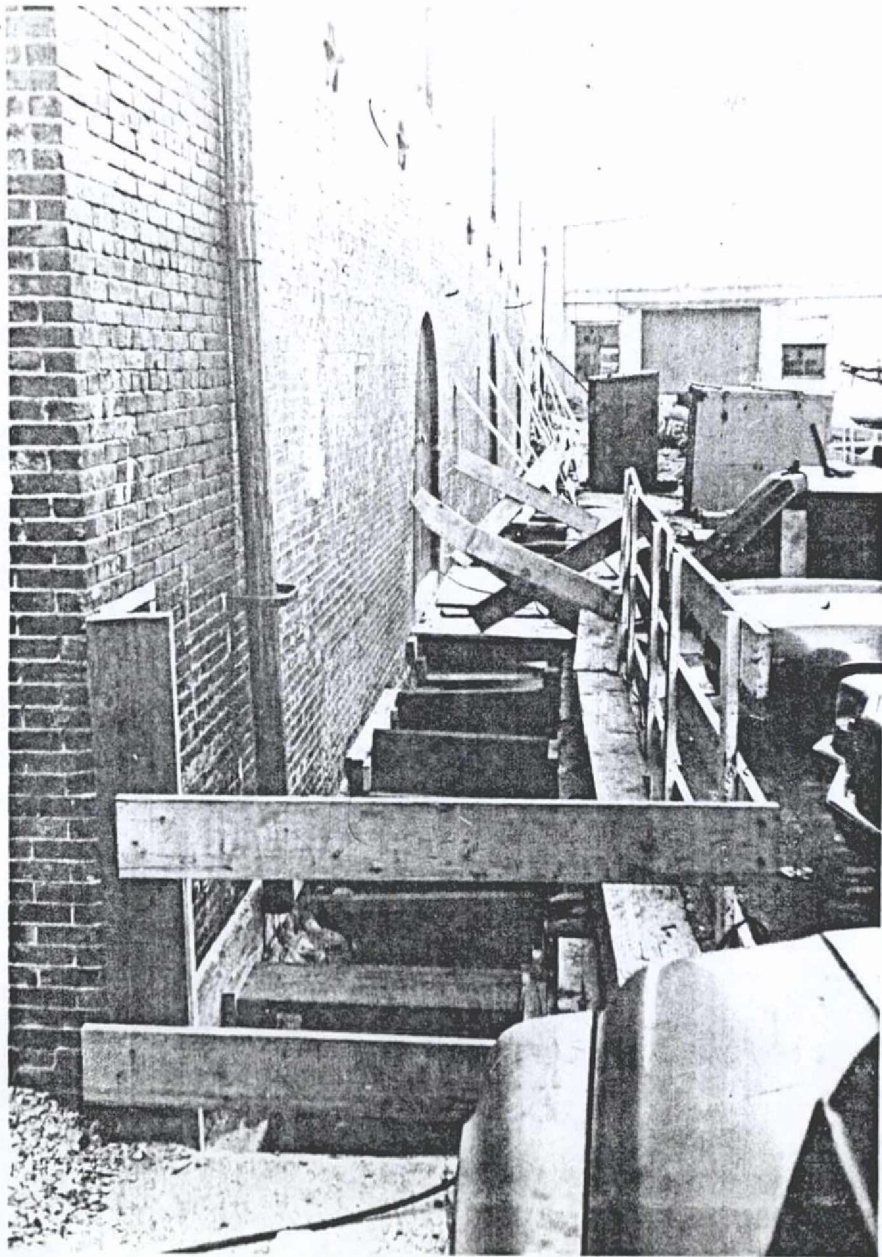


Plate 14

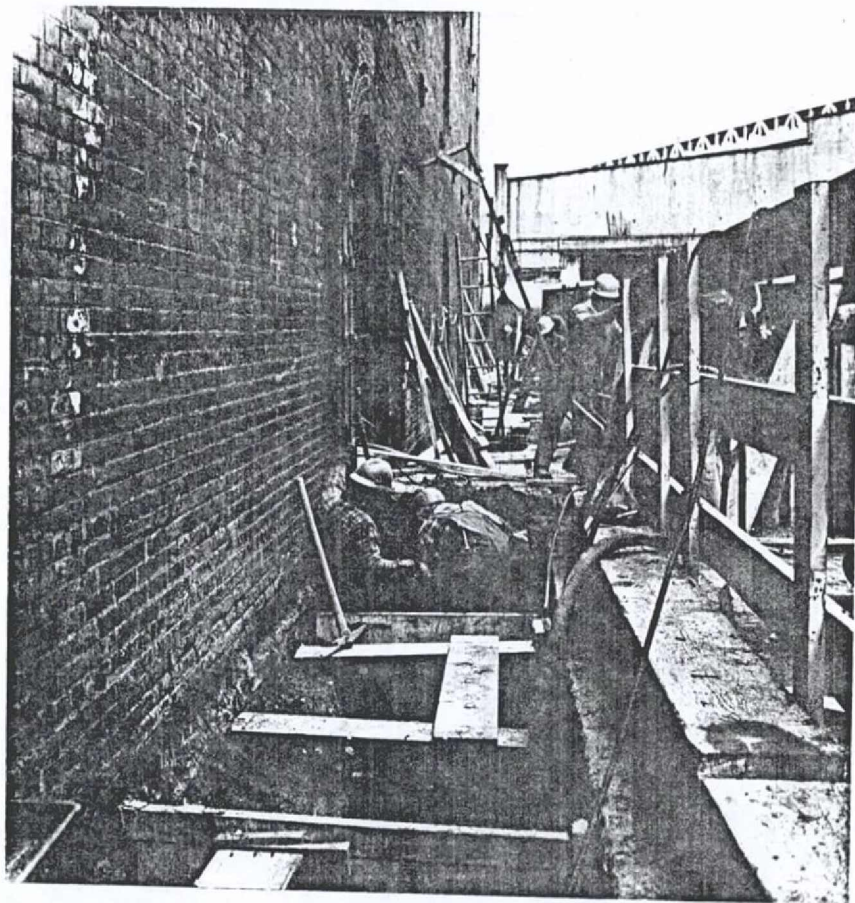


Plate 15





Plate 16



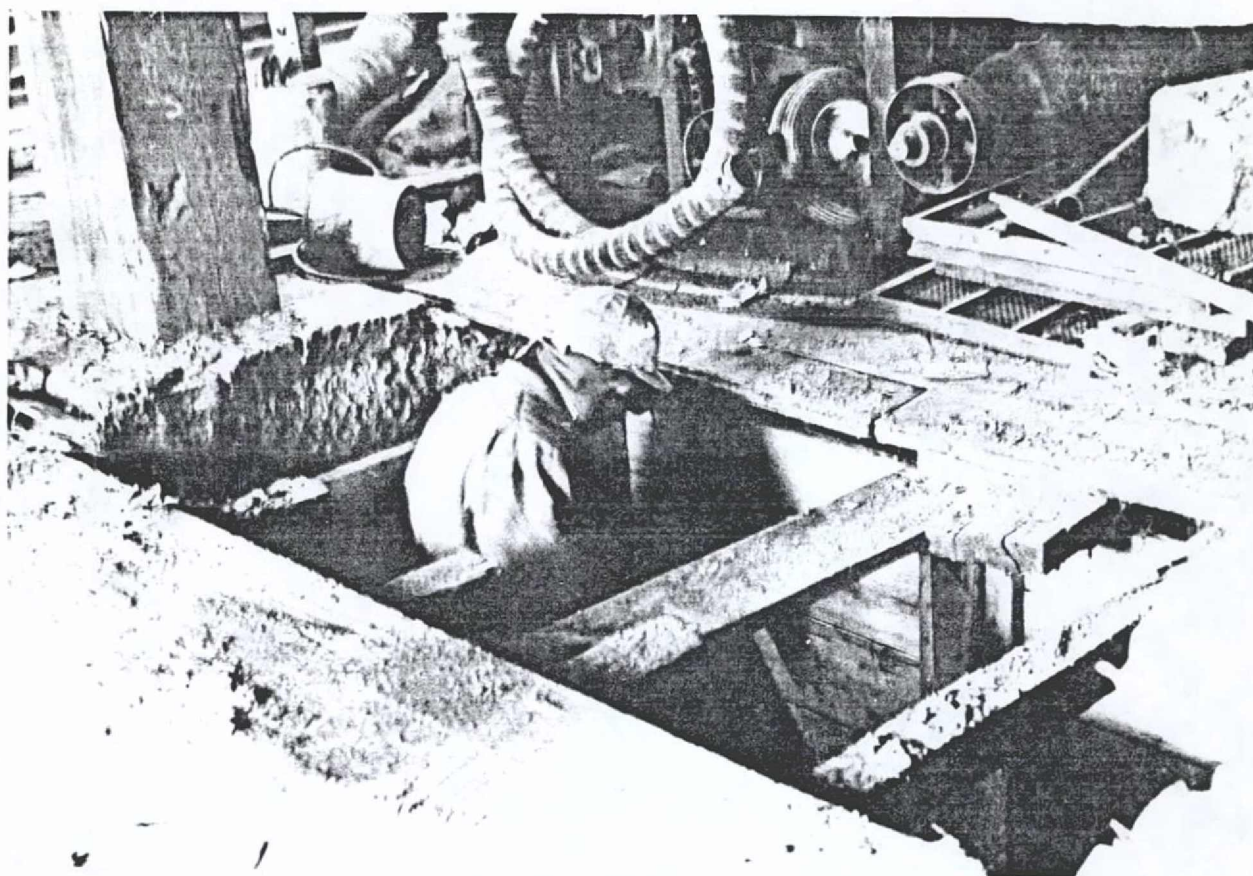


Plate 17



Plate 18



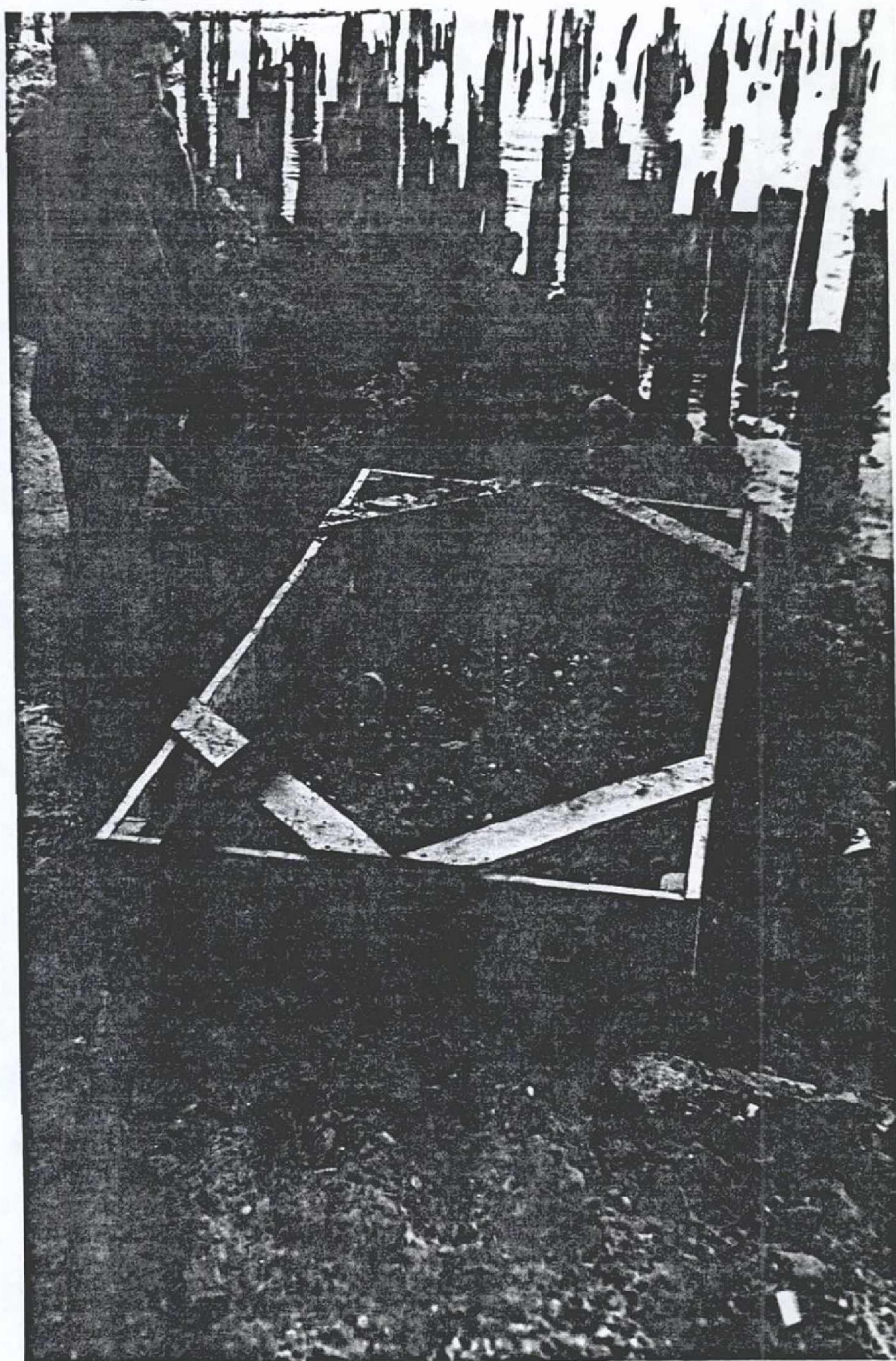


Plate 19

PLEASE RETURN TO  
LIBRARY  
LANDMARKS PRESERVATION  
COMMISSION



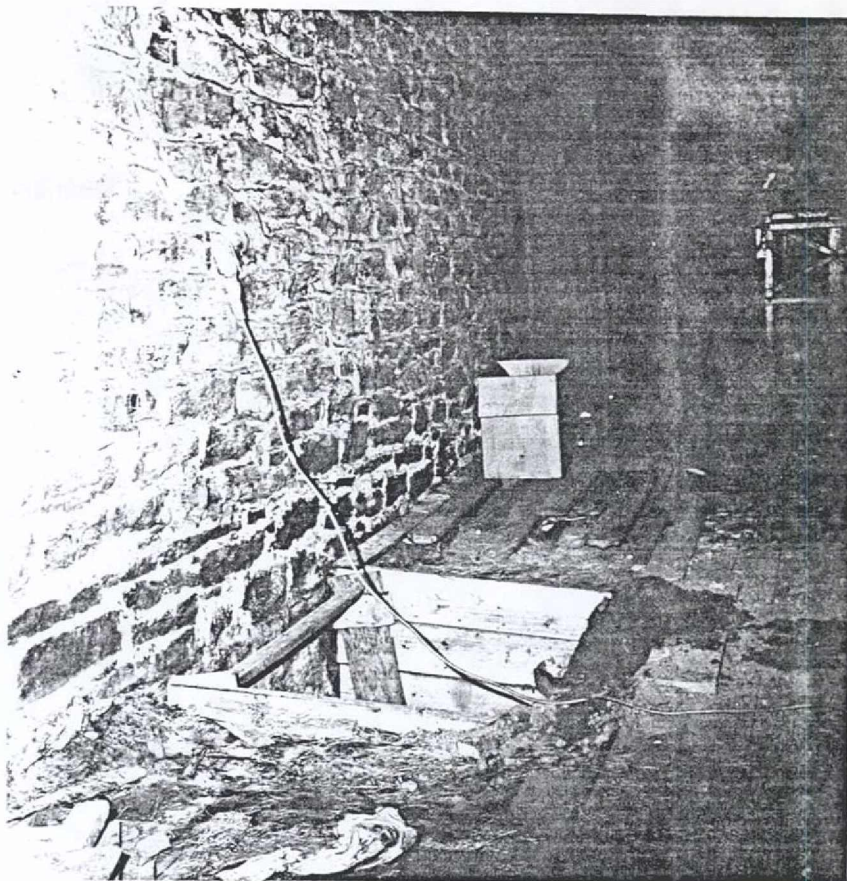


Plate 20

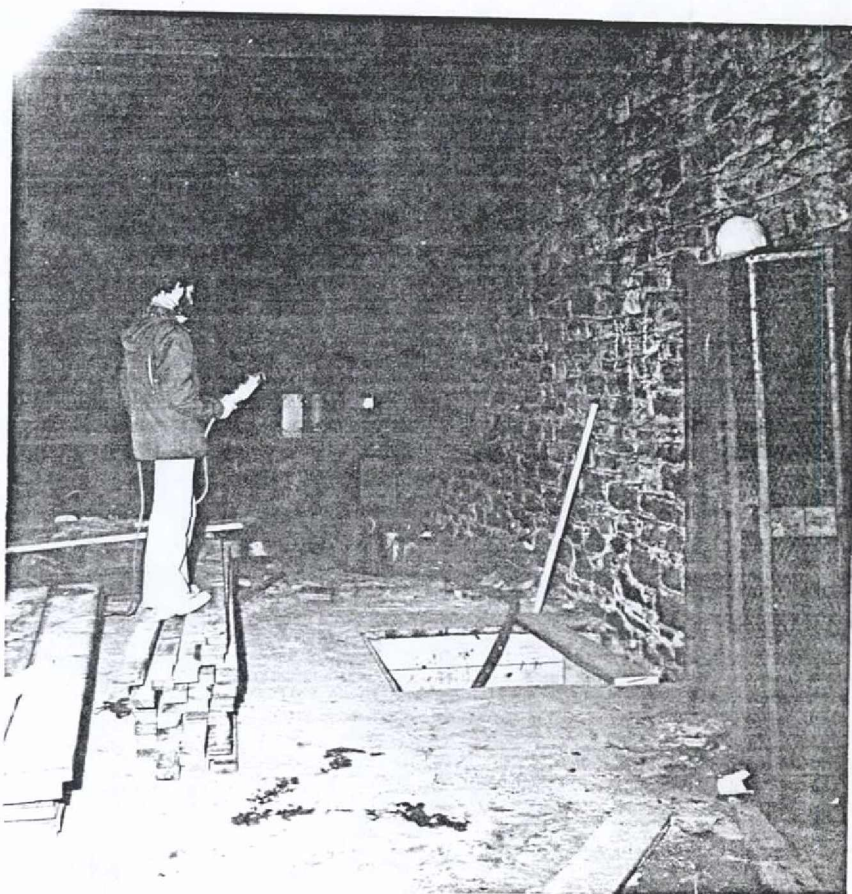


Plate 21



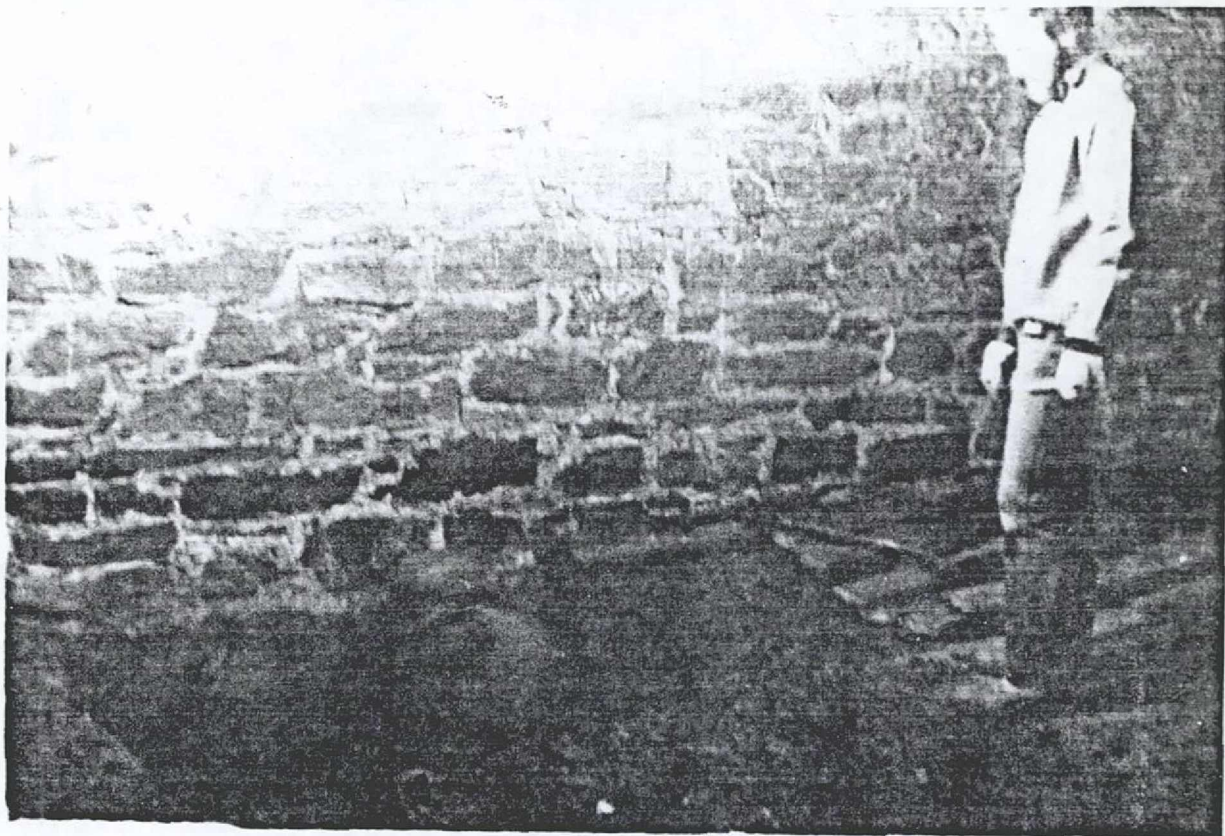


Plate 22

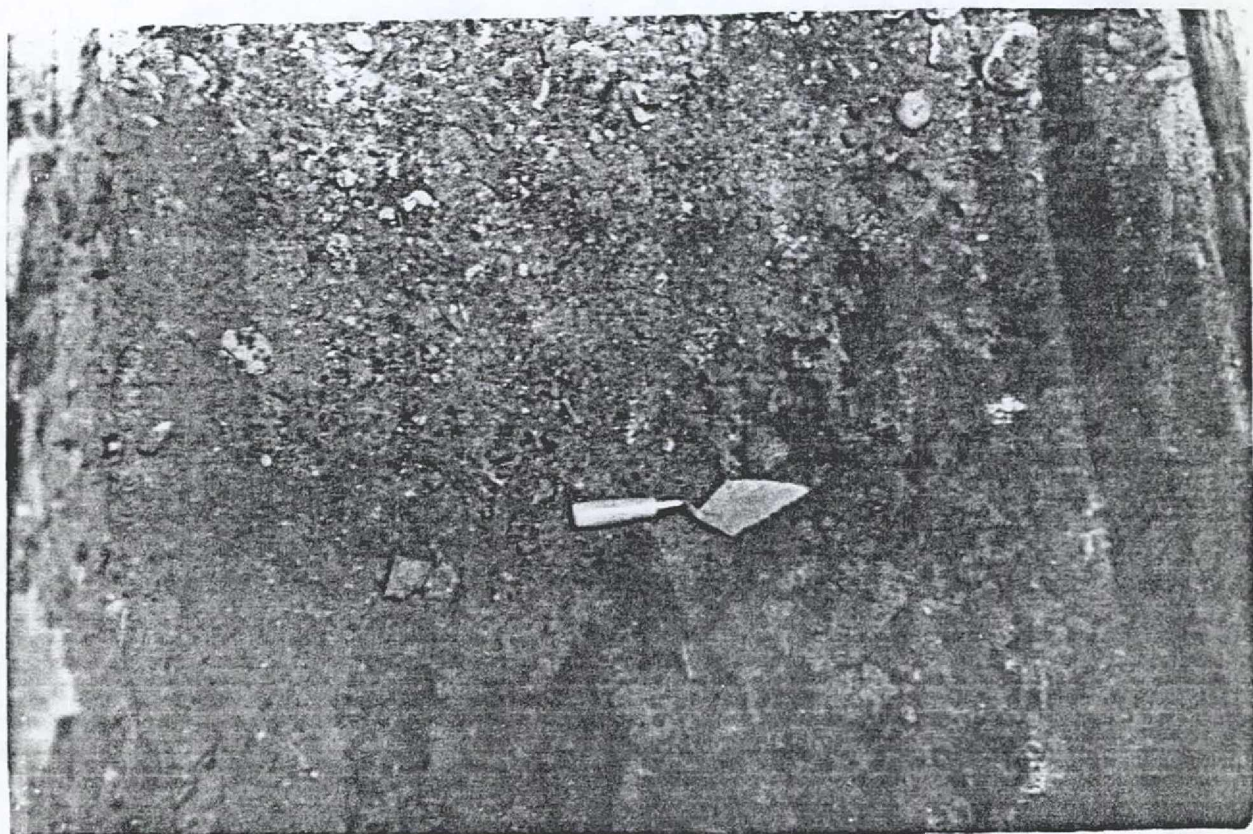


Plate 23



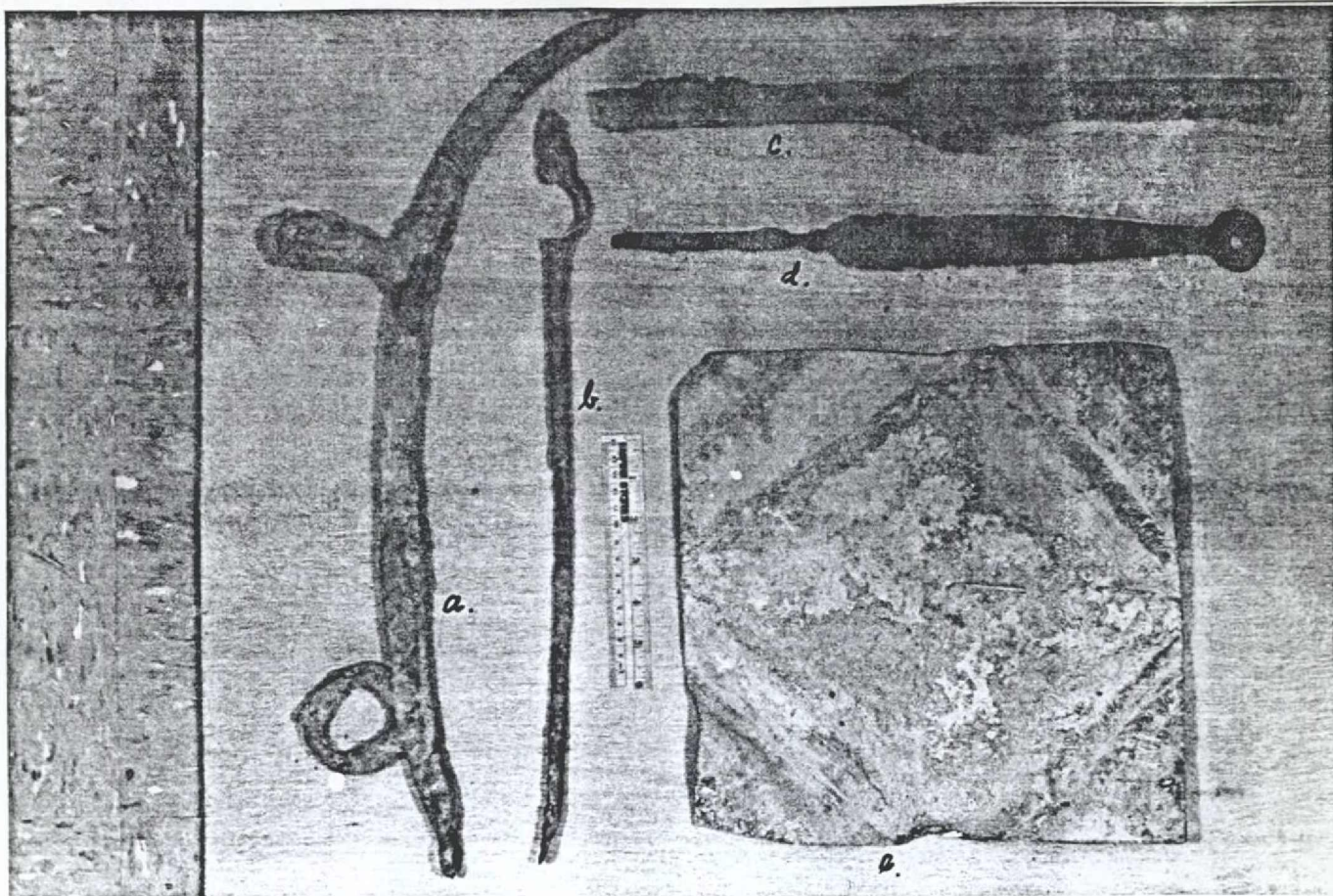
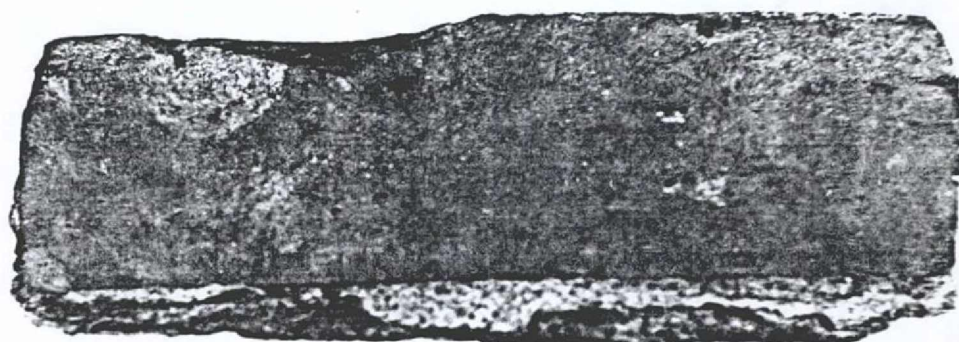
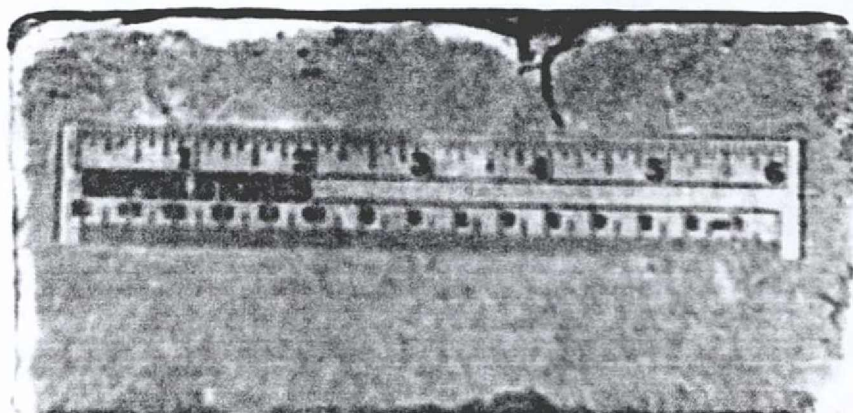


Plate 24



a.



b.

Plate 25



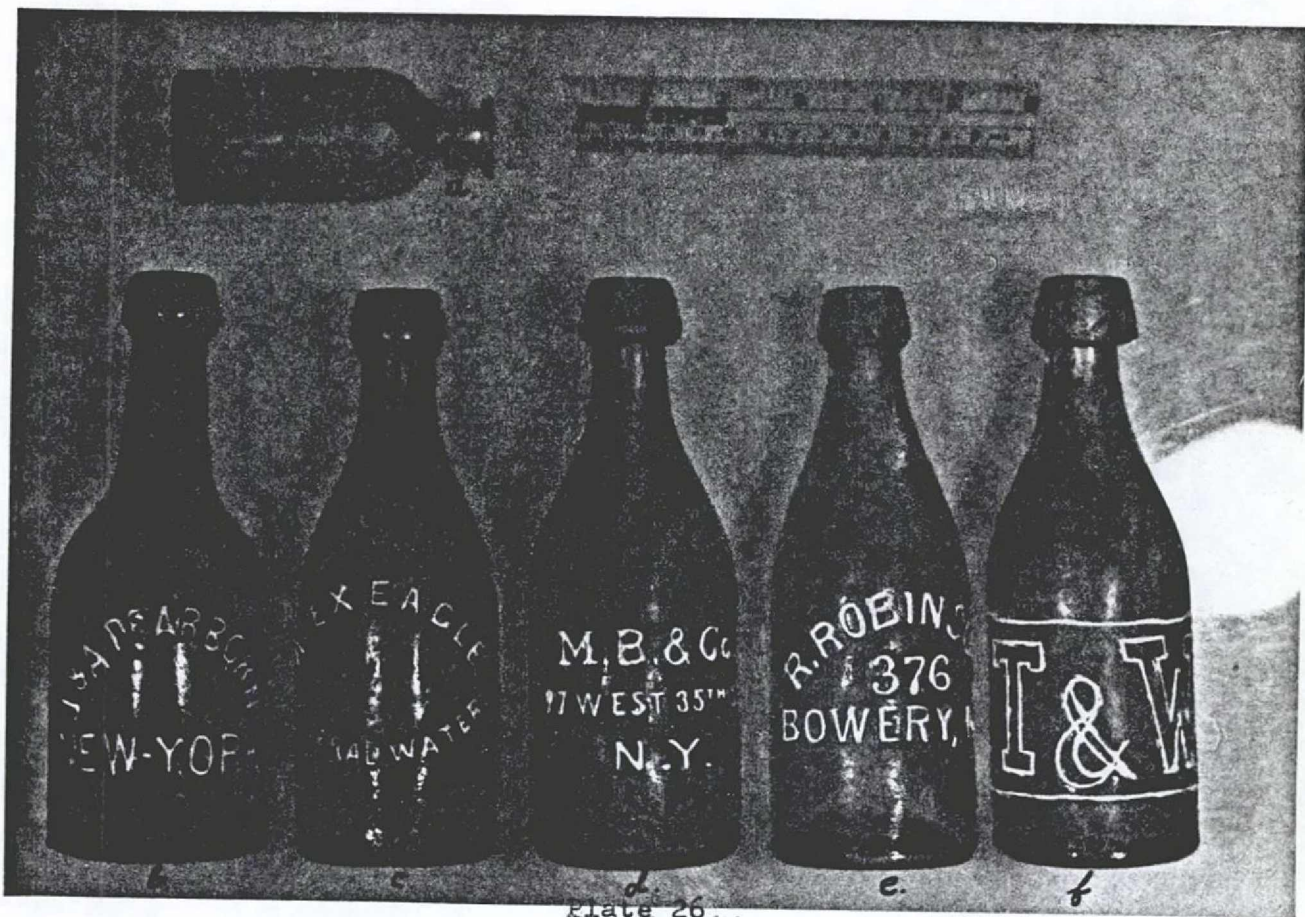


Plate 26

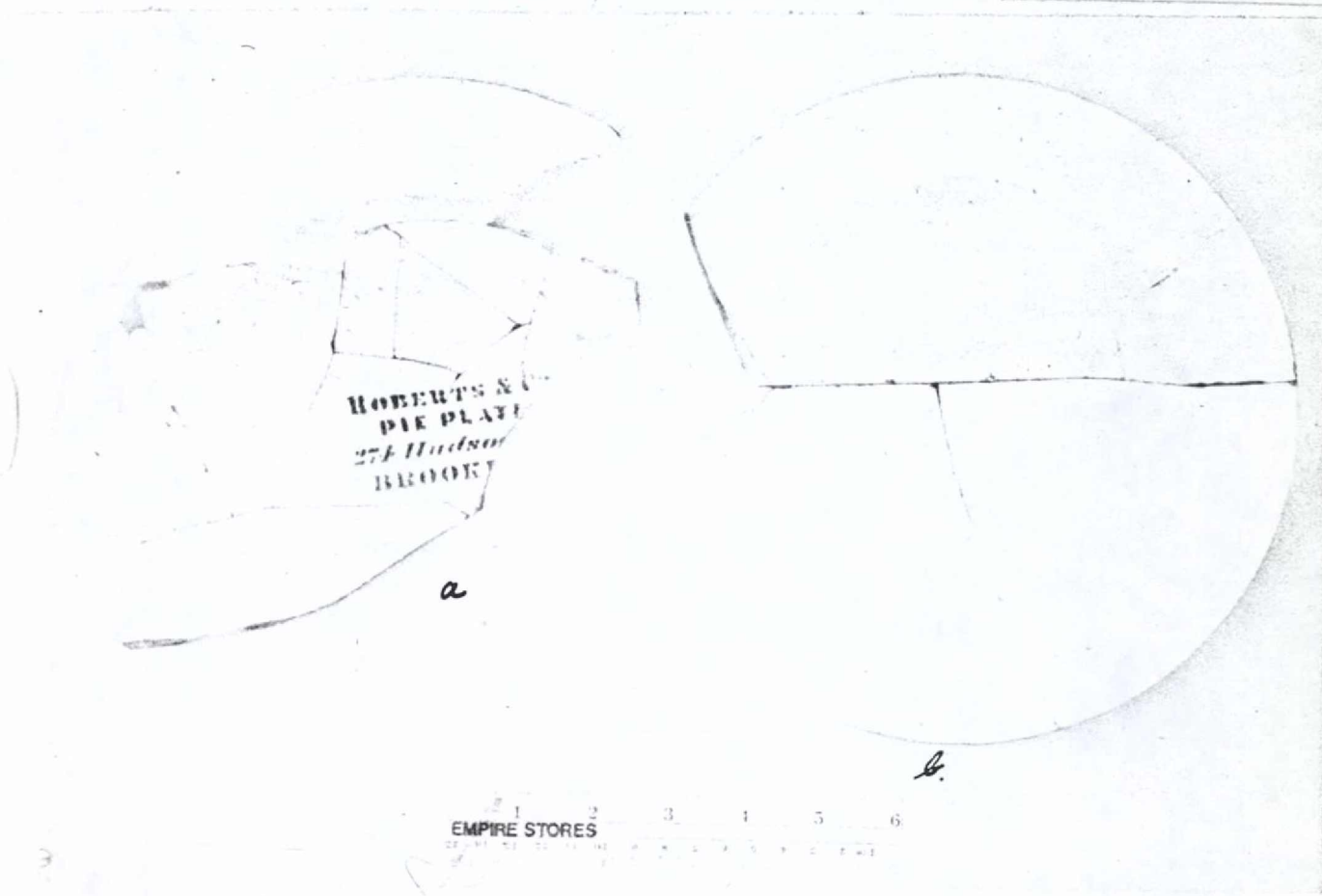


Plate 27

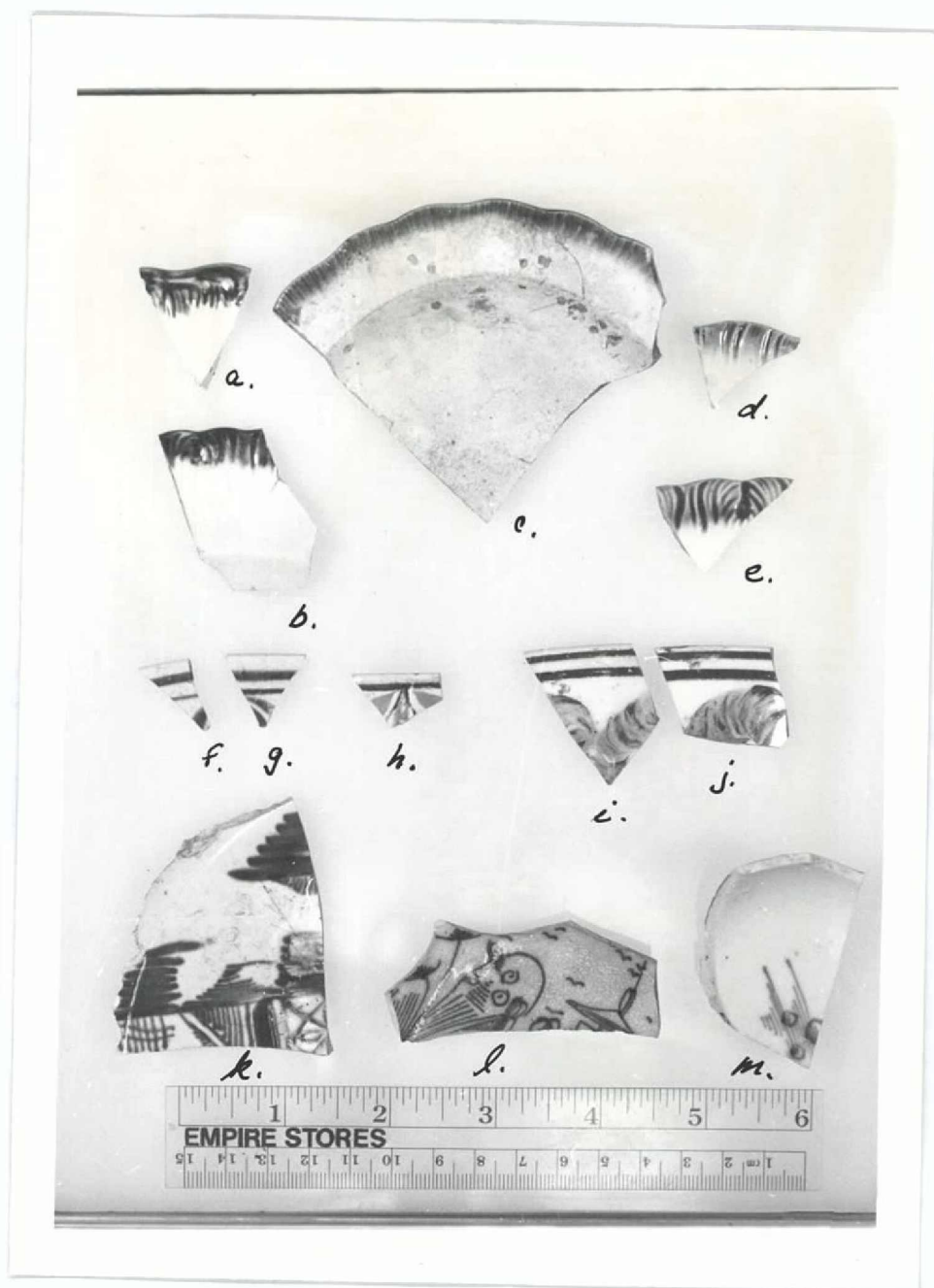


Plate 28

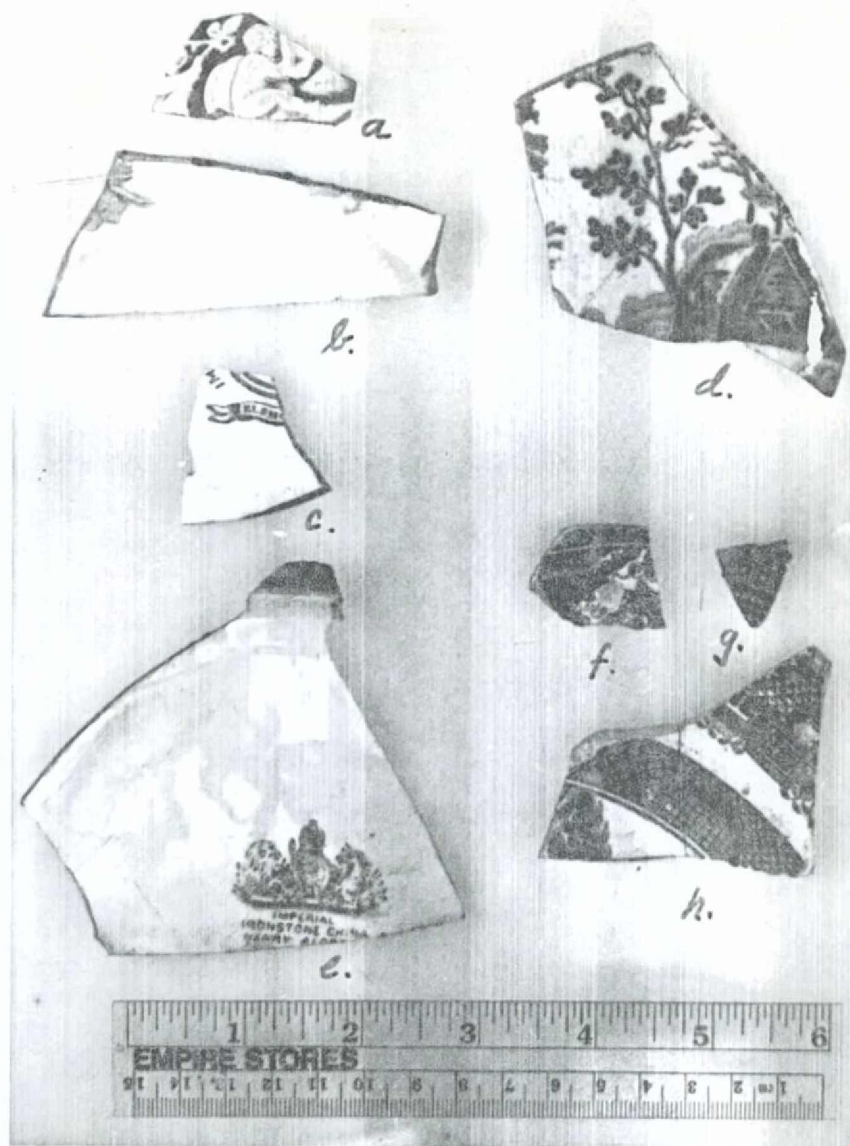


Plate 29





1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400  
401  
402  
403  
404  
405  
406  
407  
408  
409  
410  
411  
412  
413  
414  
415  
416  
417  
418  
419  
420  
421  
422  
423  
424  
425  
426  
427  
428  
429  
430  
431  
432  
433  
434  
435  
436  
437  
438  
439  
440  
441  
442  
443  
444  
445  
446  
447  
448  
449  
450  
451  
452  
453  
454  
455  
456  
457  
458  
459  
460  
461  
462  
463  
464  
465  
466  
467  
468  
469  
470  
471  
472  
473  
474  
475  
476  
477  
478  
479  
480  
481  
482  
483  
484  
485  
486  
487  
488  
489  
490  
491  
492  
493  
494  
495  
496  
497  
498  
499  
500  
501  
502  
503  
504  
505  
506  
507  
508  
509  
510  
511  
512  
513  
514  
515  
516  
517  
518  
519  
520  
521  
522  
523  
524  
525  
526  
527  
528  
529  
530  
531  
532  
533  
534  
535  
536  
537  
538  
539  
540  
541  
542  
543  
544  
545  
546  
547  
548  
549  
550  
551  
552  
553  
554  
555  
556  
557  
558  
559  
560  
561  
562  
563  
564  
565  
566  
567  
568  
569  
570  
571  
572  
573  
574  
575  
576  
577  
578  
579  
580  
581  
582  
583  
584  
585  
586  
587  
588  
589  
590  
591  
592  
593  
594  
595  
596  
597  
598  
599  
600  
601  
602  
603  
604  
605  
606  
607  
608  
609  
610  
611  
612  
613  
614  
615  
616  
617  
618  
619  
620  
621  
622  
623  
624  
625  
626  
627  
628  
629  
630  
631  
632  
633  
634  
635  
636  
637  
638  
639  
640  
641  
642  
643  
644  
645  
646  
647  
648  
649  
650  
651  
652  
653  
654  
655  
656  
657  
658  
659  
660  
661  
662  
663  
664  
665  
666  
667  
668  
669  
670  
671  
672  
673  
674  
675  
676  
677  
678  
679  
680  
681  
682  
683  
684  
685  
686  
687  
688  
689  
690  
691  
692  
693  
694  
695  
696  
697  
698  
699  
700  
701  
702  
703  
704  
705  
706  
707  
708  
709  
710  
711  
712  
713  
714  
715  
716  
717  
718  
719  
720  
721  
722  
723  
724  
725  
726  
727  
728  
729  
730  
731  
732  
733  
734  
735  
736  
737  
738  
739  
740  
741  
742  
743  
744  
745  
746  
747  
748  
749  
750  
751  
752  
753  
754  
755  
756  
757  
758  
759  
760  
761  
762  
763  
764  
765  
766  
767  
768  
769  
770  
771  
772  
773  
774  
775  
776  
777  
778  
779  
780  
781  
782  
783  
784  
785  
786  
787  
788  
789  
790  
791  
792  
793  
794  
795  
796  
797  
798  
799  
800  
801  
802  
803  
804  
805  
806  
807  
808  
809  
810  
811  
812  
813  
814  
815  
816  
817  
818  
819  
820  
821  
822  
823  
824  
825  
826  
827  
828  
829  
830  
831  
832  
833  
834  
835  
836  
837  
838  
839  
840  
841  
842  
843  
844  
845  
846  
847  
848  
849  
850  
851  
852  
853  
854  
855  
856  
857  
858  
859  
860  
861  
862  
863  
864  
865  
866  
867  
868  
869  
870  
871  
872  
873  
874  
875  
876  
877  
878  
879  
880  
881  
882  
883  
884  
885  
886  
887  
888  
889  
890  
891  
892  
893  
894  
895  
896  
897  
898  
899  
900  
901  
902  
903  
904  
905  
906  
907  
908  
909  
910  
911  
912  
913  
914  
915  
916  
917  
918  
919  
920  
921  
922  
923  
924  
925  
926  
927  
928  
929  
930  
931  
932  
933  
934  
935  
936  
937  
938  
939  
940  
941  
942  
943  
944  
945  
946  
947  
948  
949  
950  
951  
952  
953  
954  
955  
956  
957  
958  
959  
960  
961  
962  
963  
964  
965  
966  
967  
968  
969  
970  
971  
972  
973  
974  
975  
976  
977  
978  
979  
980  
981  
982  
983  
984  
985  
986  
987  
988  
989  
990  
991  
992  
993  
994  
995  
996  
997  
998  
999  
1000

Plate 30

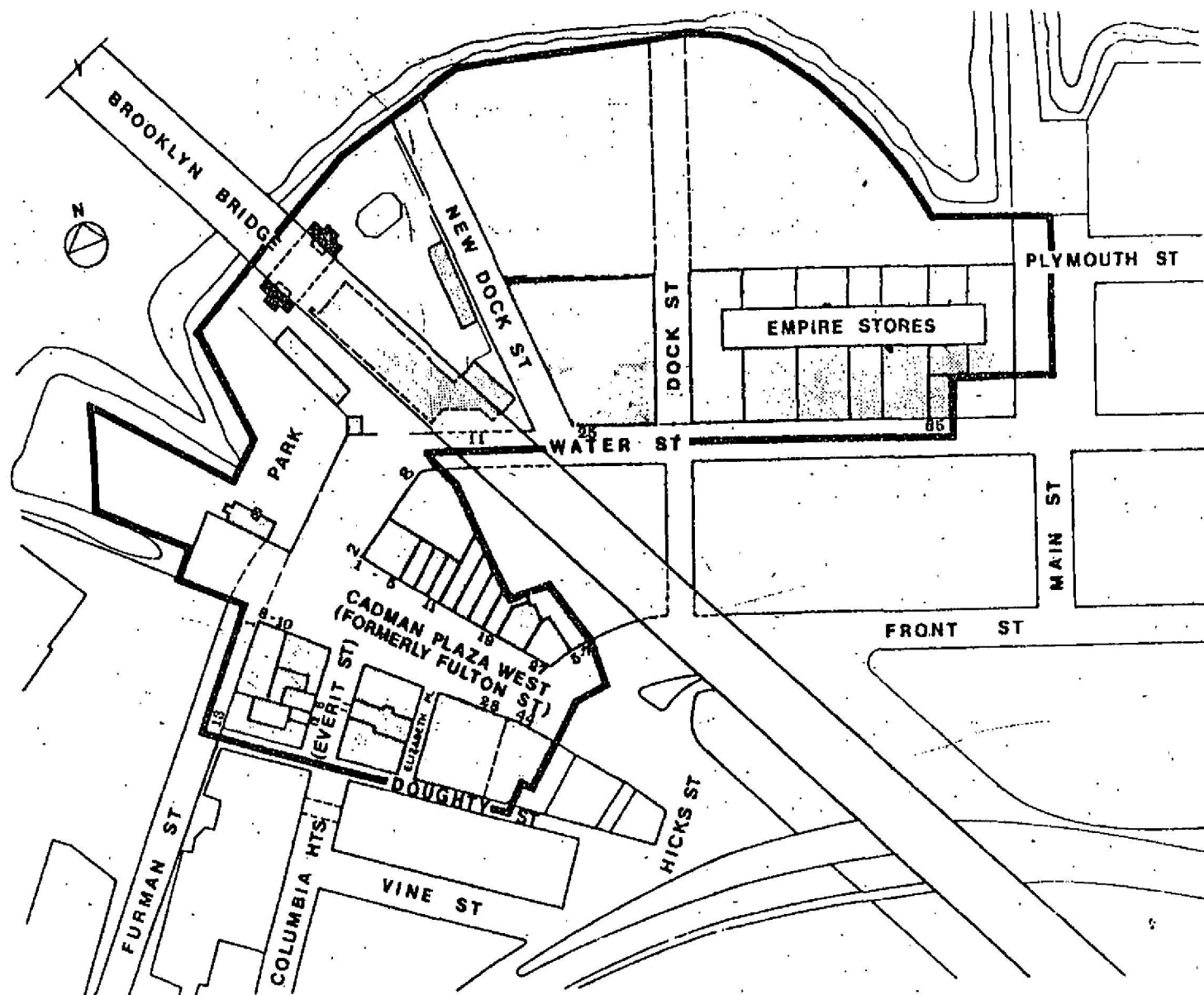


Fig 1

**FULTON FERRY HISTORIC DISTRICT**  
BROOKLYN

# Historic Buildings

- 1 Empire Stores
- 2 Eagle Warehouse
- 3 Fulton Frontage
- 4 Brooklyn City R.R.
- 5 48 Columbia Hgts.
- 6 85 Water St.

Historic District

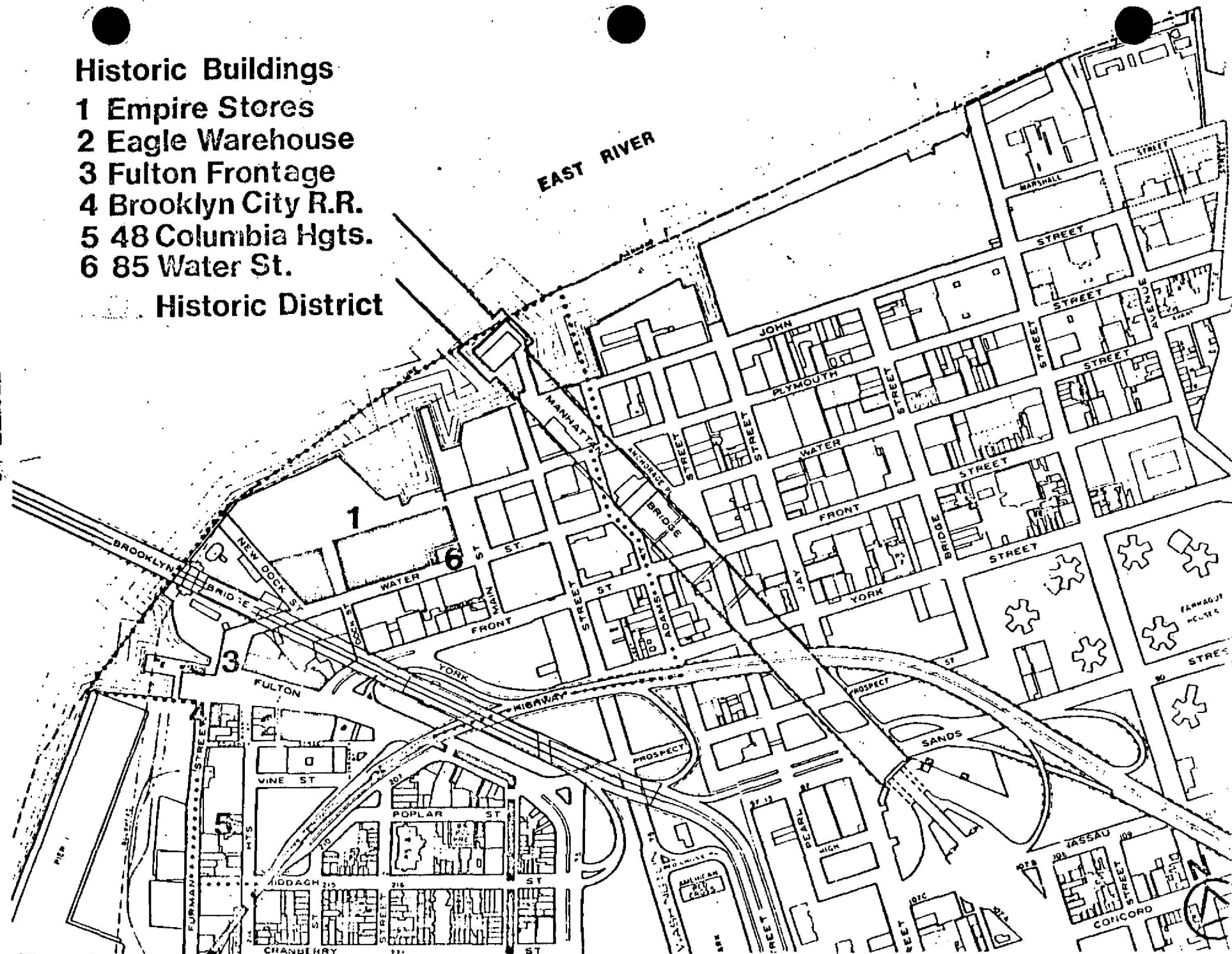
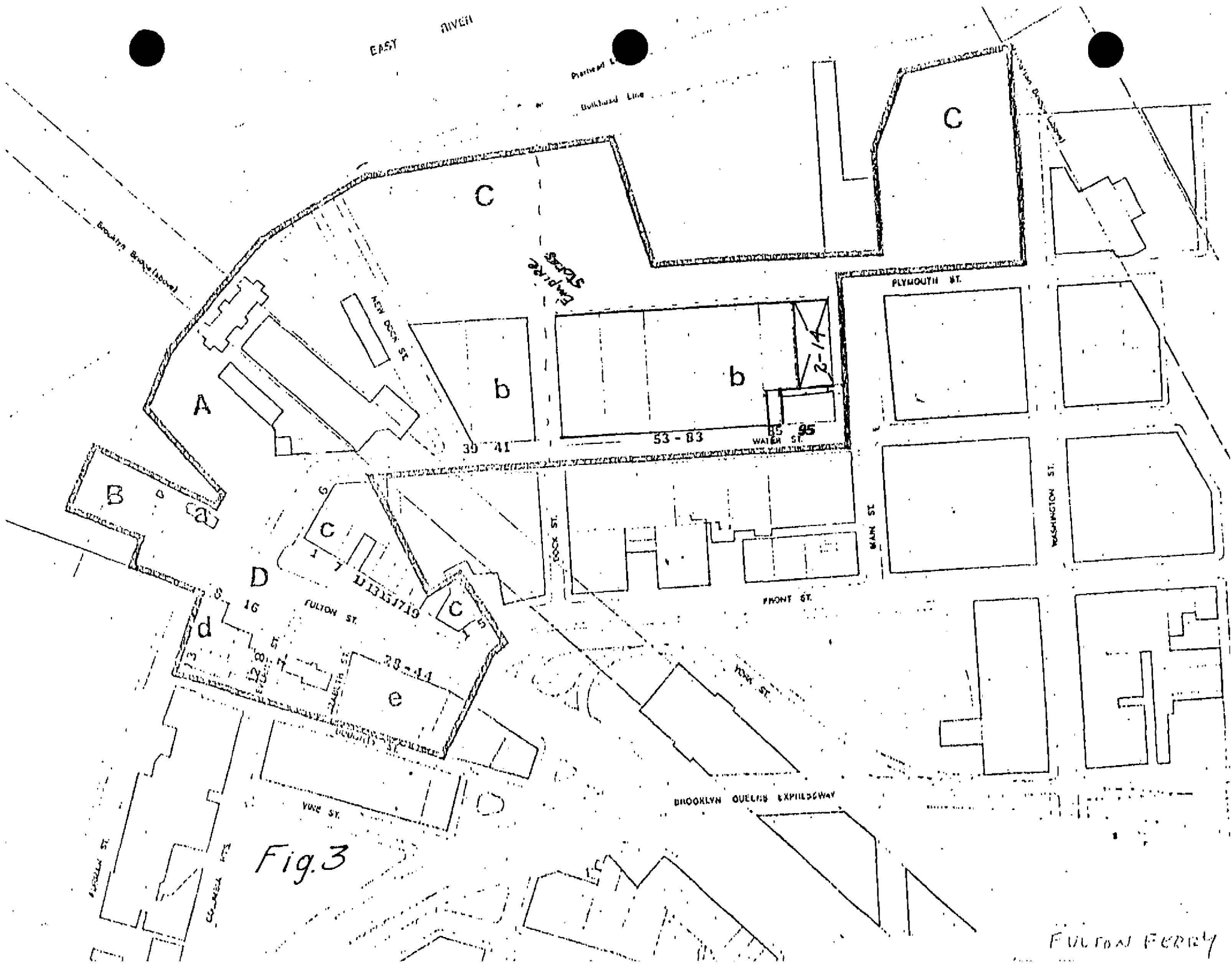
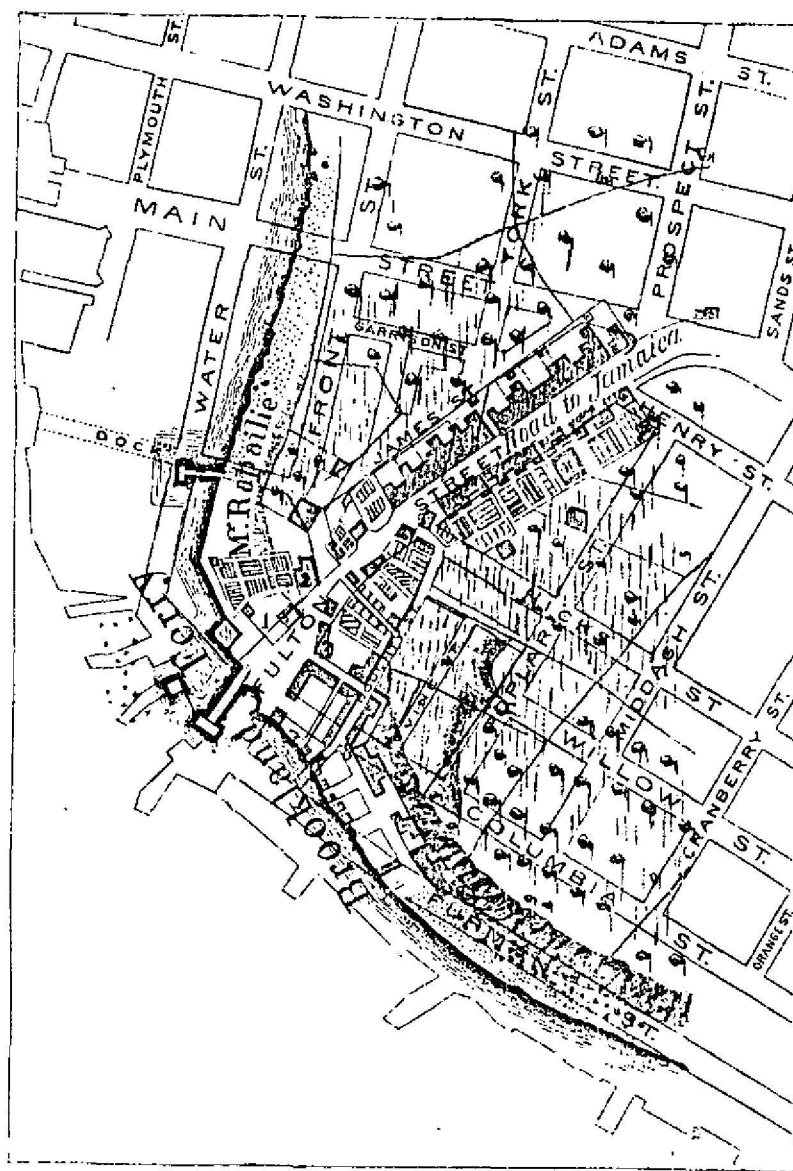


FIGURE 46





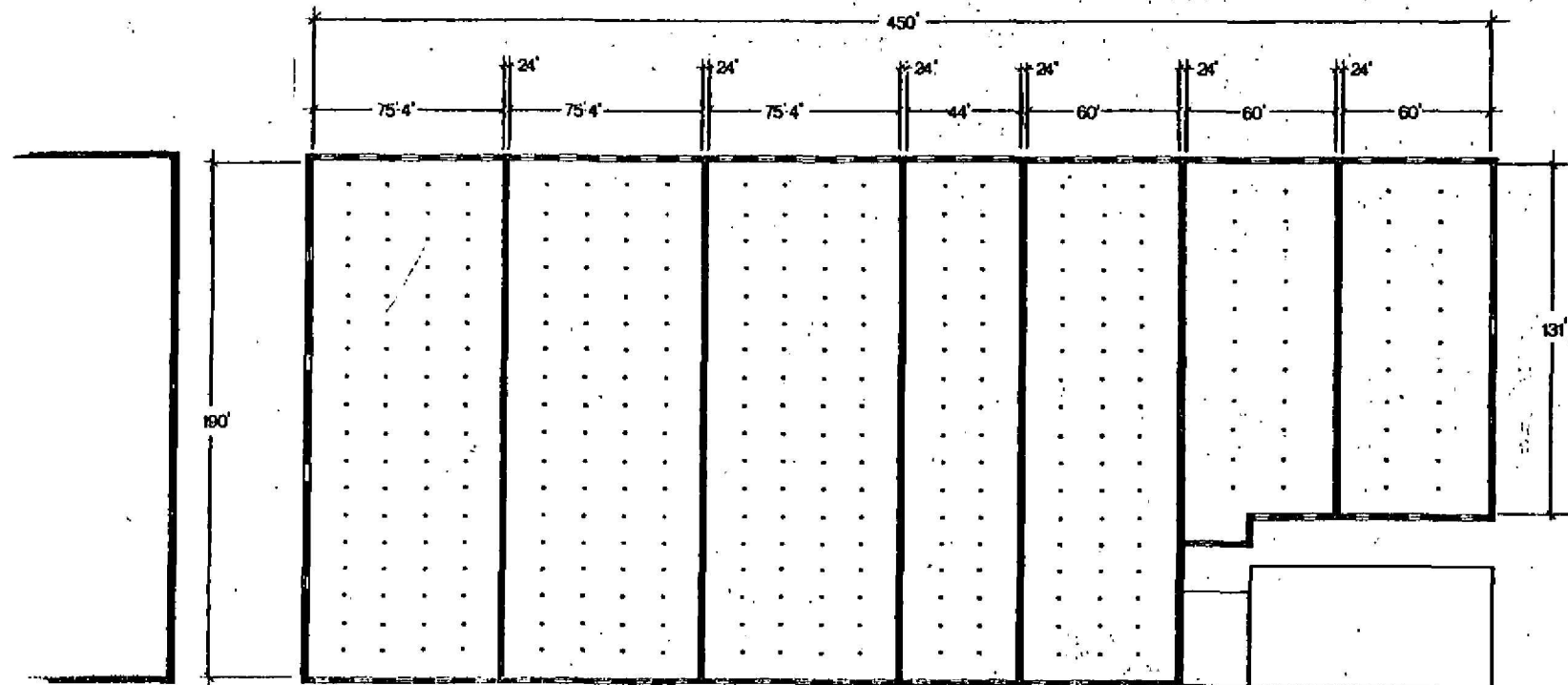




MAP OF BROOKLAND FERRY, IN 1766-7 AND 1867.

Figure 5





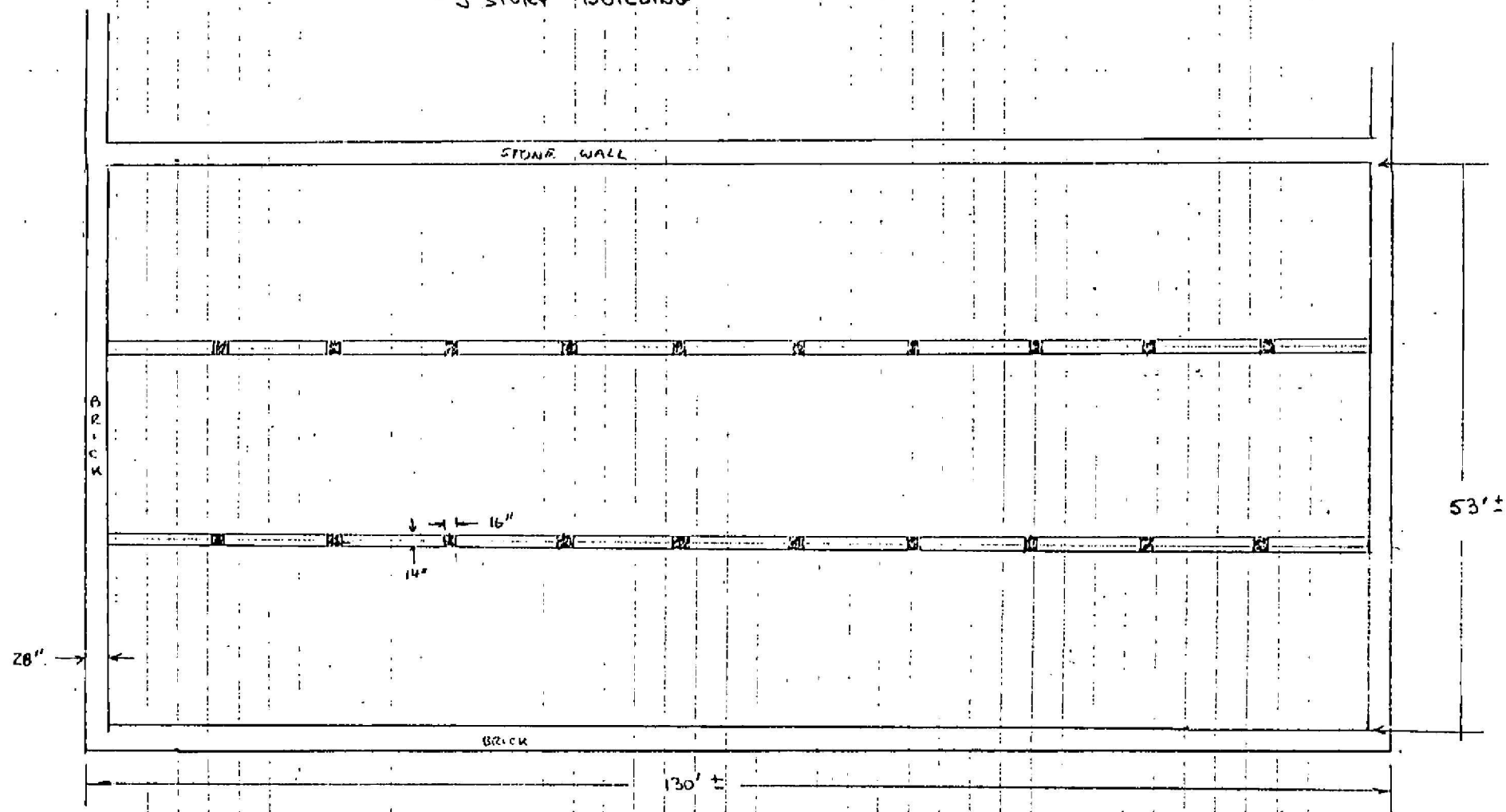
Dimensional plan of a typical floor in the main building of Empire Stores shows simplicity of arrangement and adequacy of existing spaces.

Fig. 7



# COFFEE WAREHOUSE - EMPIRE STORES

5 STORY BUILDING



- COLUMNS - 11.5' C-C - 2 ROWS 17.5' APART - 14" x 16" MEMBERS
- BEAMS - SPLICED ON COLUMNS - 14" x 16" GIRDERS SUPPORTING 4" x 14" JOISTS
- JOISTS - 4" x 14" 12" ON CENTERS
- WALLS - EXTERIOR 28" BRICK WALLS - INTERIOR STONE WALLS - THICKNESS ?
- FLOORING - 5/4" LUMBER
- HEIGHT - 62 FEET ±
- ROOF - 5/4" SHEATHING WITH FAPR BUILD UP AND GRAVEL

(4 MEMBERS DECREASE IN SIZE ON TOP FLOORS)

Fig. 8

83 WATER ST.

16 MAIN ST.

2 - 14 MAIN STREET

PLYMOUTH STREET

102" DIA. INTERCEPTING SEWER

M.H.5

MAIN STREET

WATER STREET

7 MAIN STREET

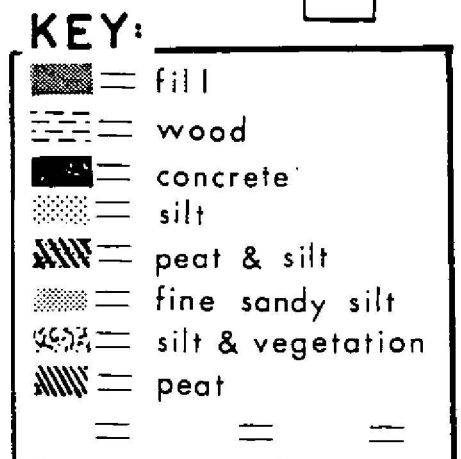
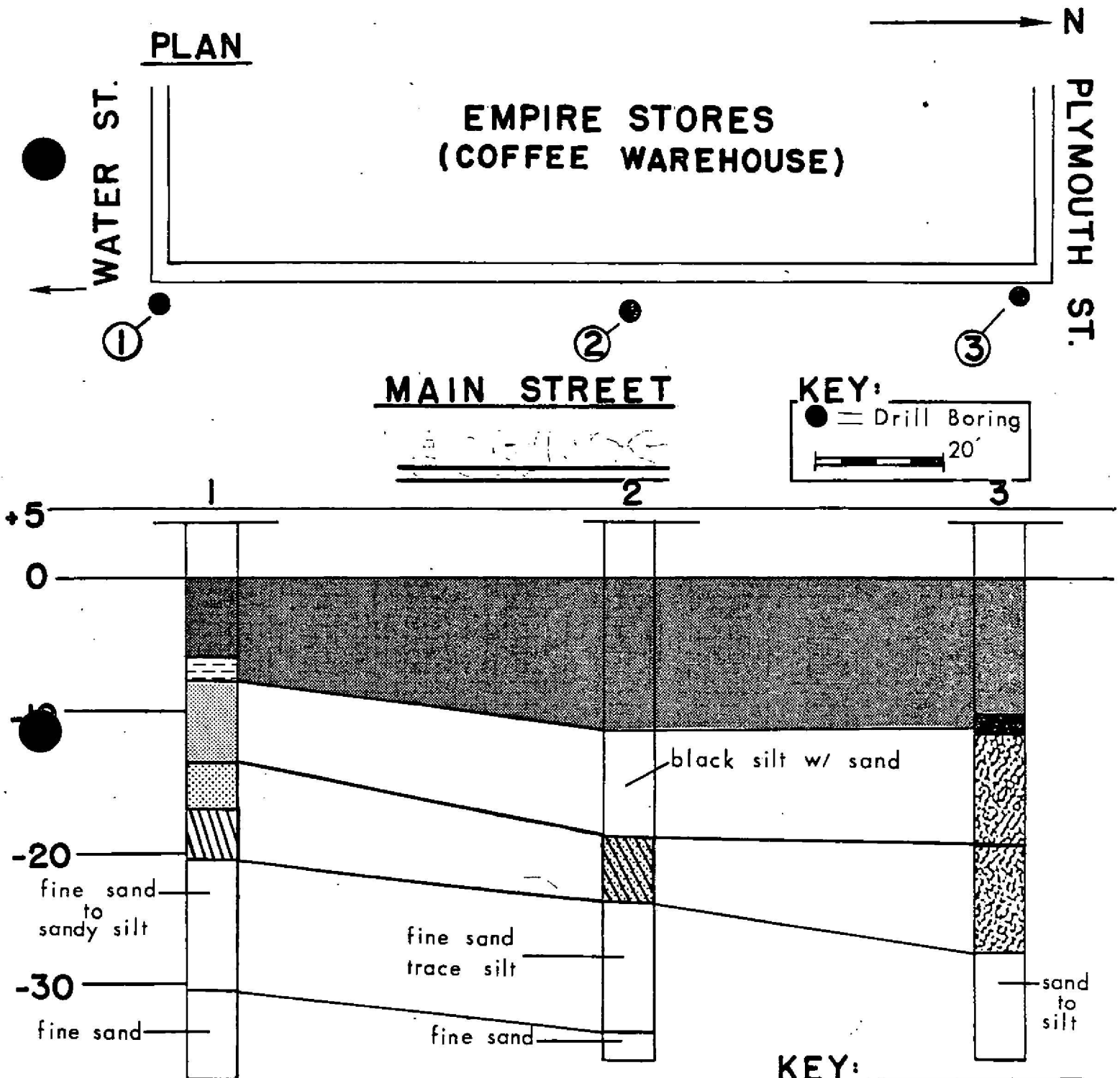


Fig. 11

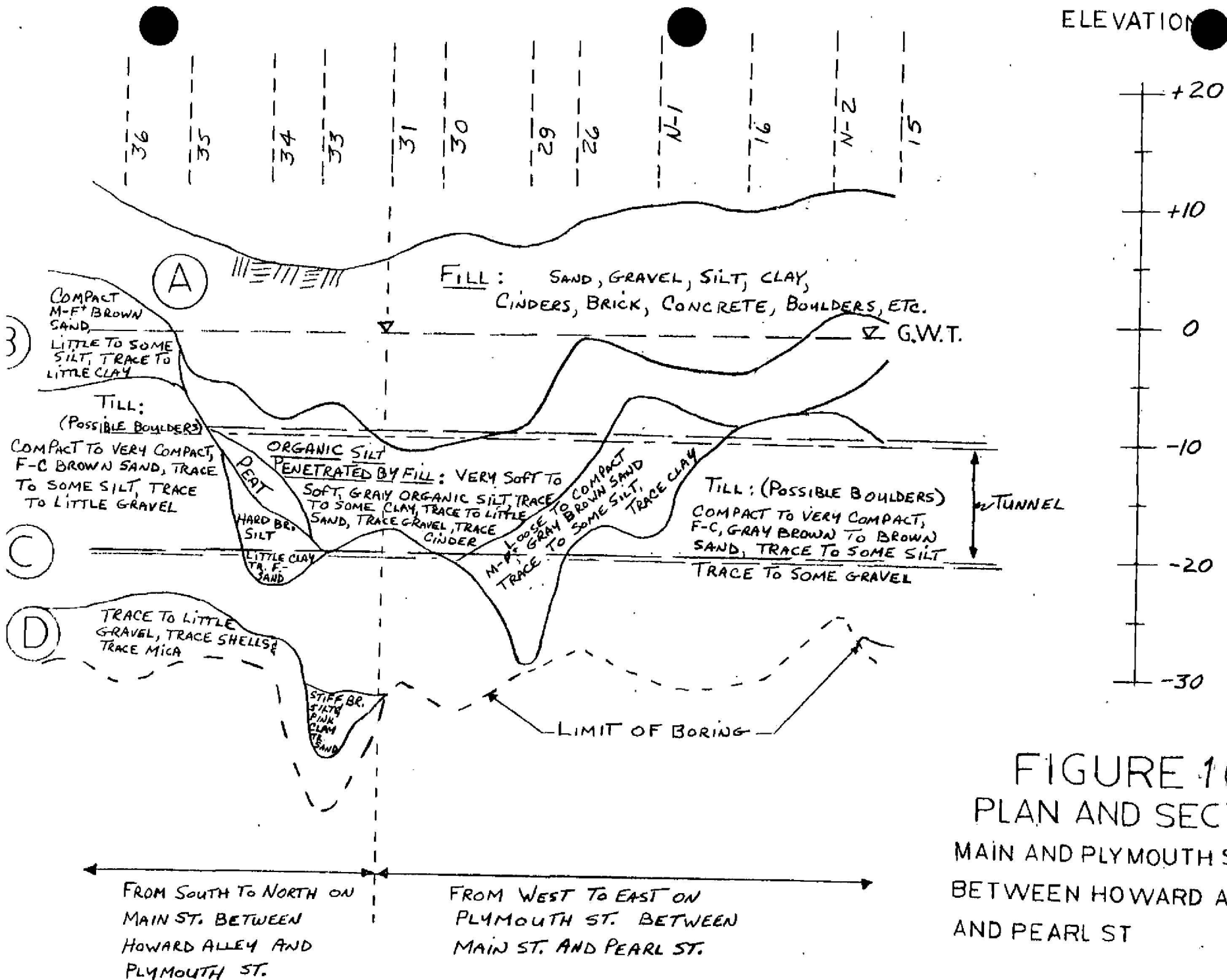
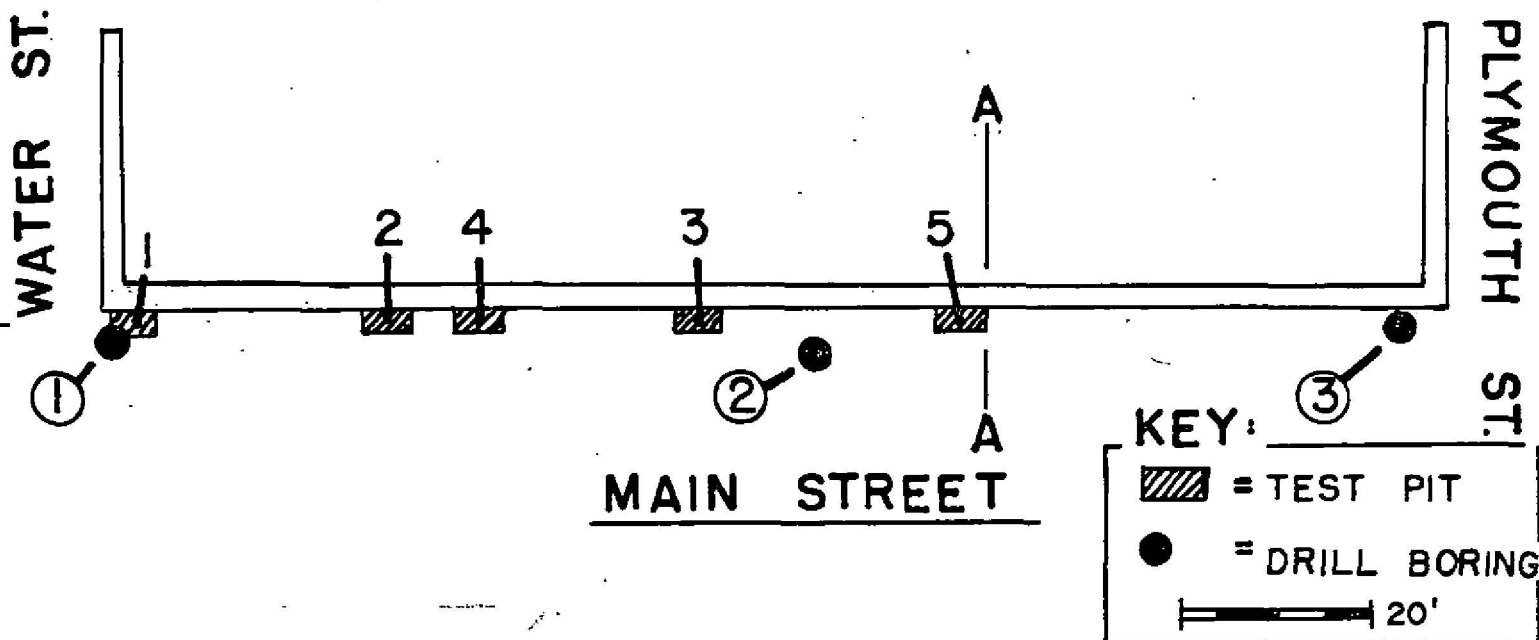


FIGURE 10  
PLAN AND SECTION  
MAIN AND PLYMOUTH STREETS  
BETWEEN HOWARD ALLEY  
AND PEARL ST

# EMPIRE STORES

( COFFEE WAREHOUSE )

PLAN



## SECTION WALL A - A

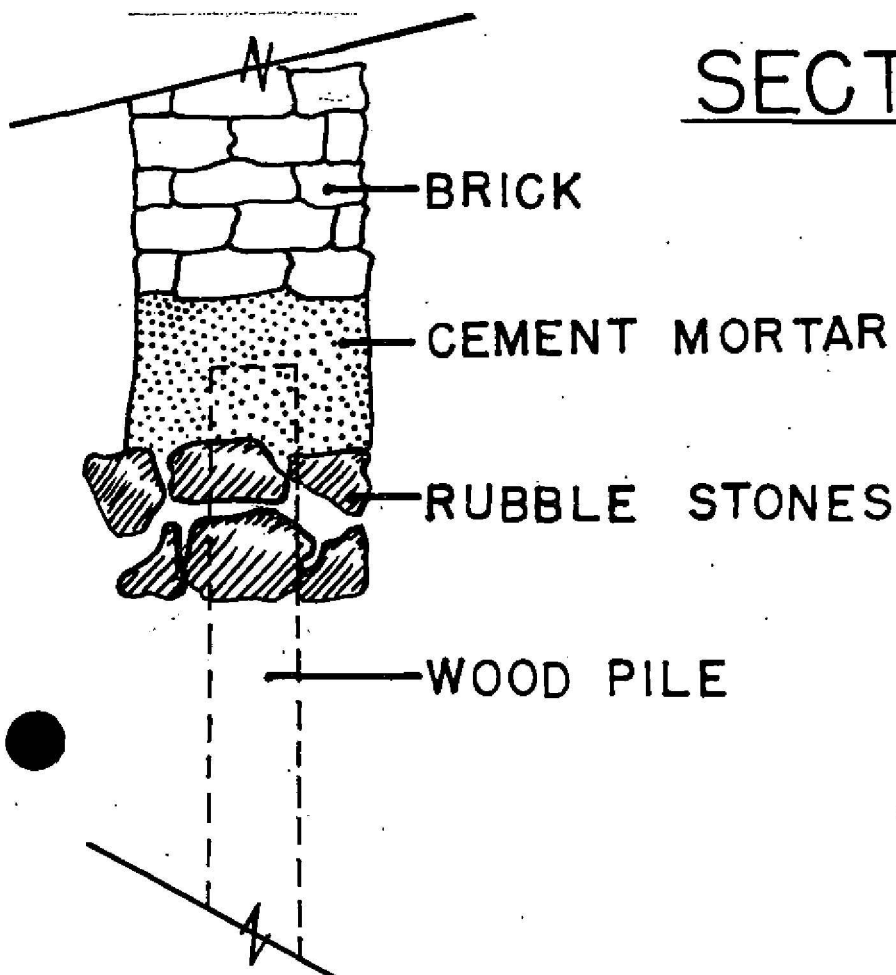


Fig. 13

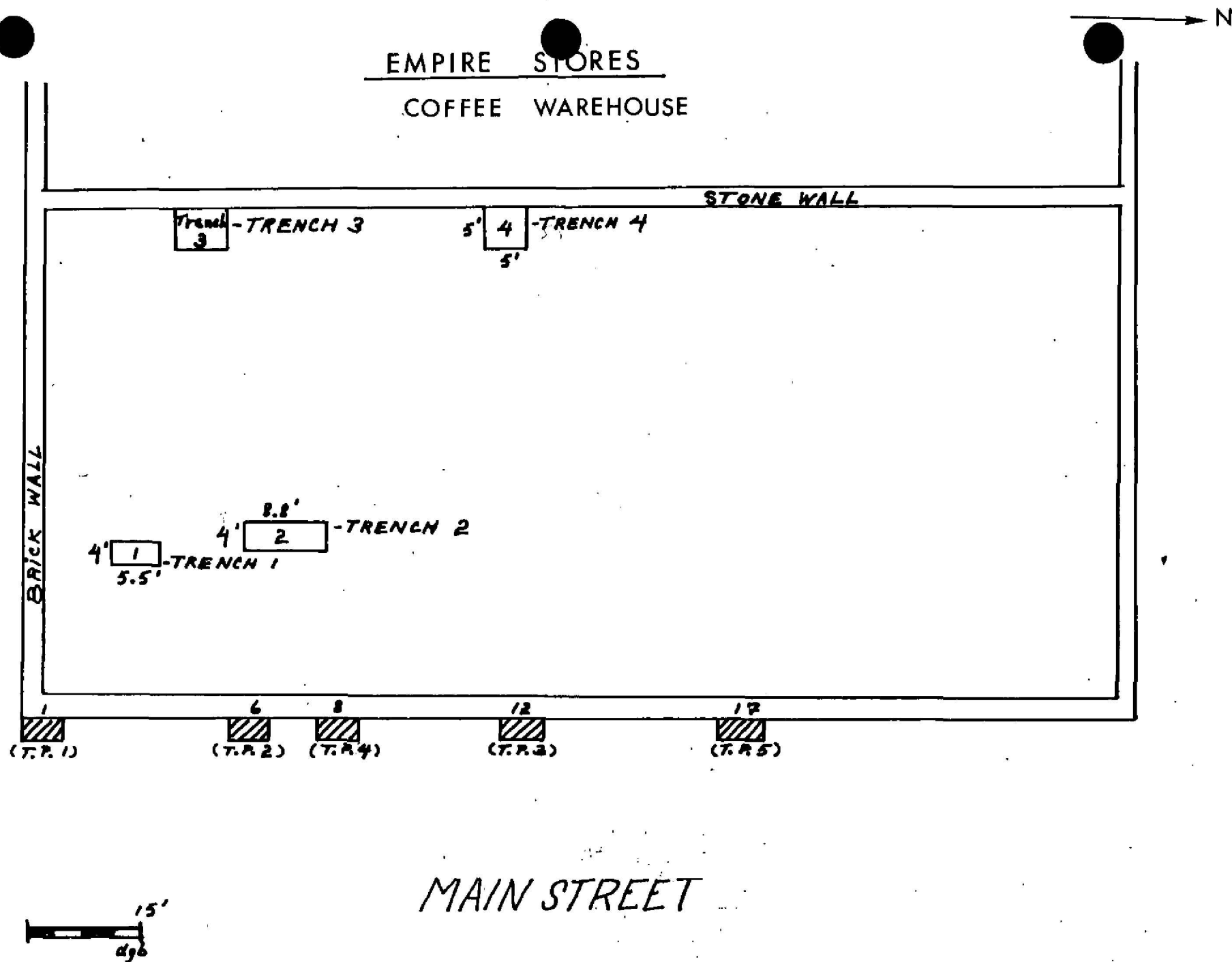


Fig. 14

NIGHT SHIFT  
CHANGE ORDER 1A  
UNDERPINNING & FOUNDATION  
DAILY REPORT - SUPPORT WORK

REPORT No. 150A-21 DATE NOVEMBER 20, 1978 WEATHER: CLEAR

CONTRACT 1A FORCE ACCOUNT RED HOOK INTERC. SEWER EQUIPMENT

NO.	CLASSIFICATION	REG.	O.T.	U & F		RENTALS
2	SUPT.	10			CRANE	
1	DOCKBUILDER FOREMAN	8			BOILER/COMPR.	
2	DOCKBUILDERS	16			HAMMER	
	CRANE OPERATOR				LEADS	
1	OTHER Pump DE	8	1/2		SPOTTER	
1	WELDER	8		1	WELD. MACH.	
1	LABORER FOREMAN	8			C/P	
4	LABORER	32			MANDREL	
	C/P OPER.			2	DIA. PUMPS	2
1	ARCHAEOLOGIST	8				

PROGRESS REPORT

Bldg. 83 MAIN ST

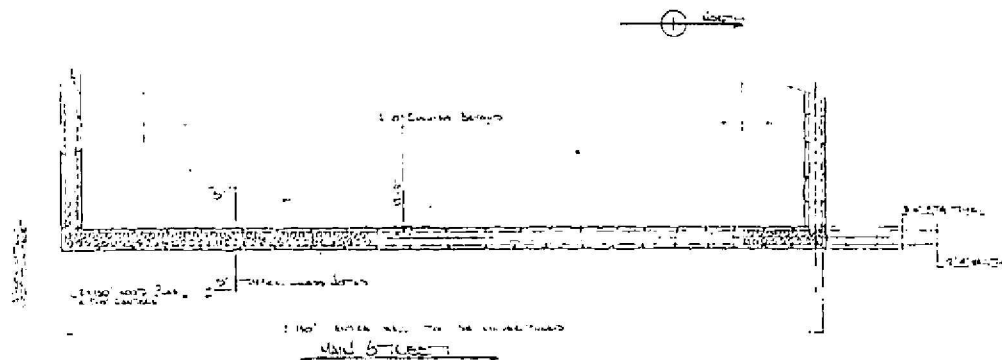
Pit # 6 - CONTINUE EXCAVATION & INSTALL & GROUT PILE SLEEVE

Pit # 12 - CONTINUE EXCAVATION & REMOVAL OF WOOD CRIBBING.

Pit # 17 - MAINTAIN LOAD TEST.

Fig 15

By ED Rilschonek



1. Increase the number of bits in the `int` type (currently, `int` was 4 bytes/32-bits) from 32 to 64.  
2. Increase the number of bits in the `long` type (currently, `long` was 4 bytes/32-bits) from 32 to 64.  
3. Increase the number of bits in the `float` type (currently, `float` was 4 bytes/32-bits) from 32 to 64.  
4. Increase the number of bits in the `double` type (currently, `double` was 8 bytes/64-bits) from 64 to 128.  
5. Increase the number of bits in the `long double` type (currently, `long double` was 16 bytes/128-bits) from 128 to 256.  
6. Increase the number of bits in the `__float128` type (currently, `__float128` was 16 bytes/128-bits) from 128 to 256.  
7. Increase the number of bits in the `__int128` type (currently, `__int128` was 16 bytes/128-bits) from 128 to 256.  
8. Increase the number of bits in the `__uint128_t` type (currently, `__uint128_t` was 16 bytes/128-bits) from 128 to 256.  
9. Increase the number of bits in the `__int256` type (currently, `__int256` was 32 bytes/256-bits) from 256 to 512.  
10. Increase the number of bits in the `__uint256_t` type (currently, `__uint256_t` was 32 bytes/256-bits) from 256 to 512.  
11. Increase the number of bits in the `__int512` type (currently, `__int512` was 64 bytes/512-bits) from 512 to 1024.  
12. Increase the number of bits in the `__uint512_t` type (currently, `__uint512_t` was 64 bytes/512-bits) from 512 to 1024.  
13. Increase the number of bits in the `__int1024` type (currently, `__int1024` was 128 bytes/1024-bits) from 1024 to 2048.  
14. Increase the number of bits in the `__uint1024_t` type (currently, `__uint1024_t` was 128 bytes/1024-bits) from 1024 to 2048.  
15. Increase the number of bits in the `__int2048` type (currently, `__int2048` was 256 bytes/2048-bits) from 2048 to 4096.  
16. Increase the number of bits in the `__uint2048_t` type (currently, `__uint2048_t` was 256 bytes/2048-bits) from 2048 to 4096.  
17. Increase the number of bits in the `__int4096` type (currently, `__int4096` was 512 bytes/4096-bits) from 4096 to 8192.  
18. Increase the number of bits in the `__uint4096_t` type (currently, `__uint4096_t` was 512 bytes/4096-bits) from 4096 to 8192.  
19. Increase the number of bits in the `__int8192` type (currently, `__int8192` was 1024 bytes/8192-bits) from 8192 to 16384.  
20. Increase the number of bits in the `__uint8192_t` type (currently, `__uint8192_t` was 1024 bytes/8192-bits) from 8192 to 16384.  
21. Increase the number of bits in the `__int16384` type (currently, `__int16384` was 2048 bytes/16384-bits) from 16384 to 32768.  
22. Increase the number of bits in the `__uint16384_t` type (currently, `__uint16384_t` was 2048 bytes/16384-bits) from 16384 to 32768.  
23. Increase the number of bits in the `__int32768` type (currently, `__int32768` was 4096 bytes/32768-bits) from 32768 to 65536.  
24. Increase the number of bits in the `__uint32768_t` type (currently, `__uint32768_t` was 4096 bytes/32768-bits) from 32768 to 65536.  
25. Increase the number of bits in the `__int65536` type (currently, `__int65536` was 8192 bytes/65536-bits) from 65536 to 131072.  
26. Increase the number of bits in the `__uint65536_t` type (currently, `__uint65536_t` was 8192 bytes/65536-bits) from 65536 to 131072.  
27. Increase the number of bits in the `__int131072` type (currently, `__int131072` was 16384 bytes/131072-bits) from 131072 to 262144.  
28. Increase the number of bits in the `__uint131072_t` type (currently, `__uint131072_t` was 16384 bytes/131072-bits) from 131072 to 262144.  
29. Increase the number of bits in the `__int262144` type (currently, `__int262144` was 32768 bytes/262144-bits) from 262144 to 524288.  
30. Increase the number of bits in the `__uint262144_t` type (currently, `__uint262144_t` was 32768 bytes/262144-bits) from 262144 to 524288.  
31. Increase the number of bits in the `__int524288` type (currently, `__int524288` was 65536 bytes/524288-bits) from 524288 to 1048576.  
32. Increase the number of bits in the `__uint524288_t` type (currently, `__uint524288_t` was 65536 bytes/524288-bits) from 524288 to 1048576.  
33. Increase the number of bits in the `__int1048576` type (currently, `__int1048576` was 131072 bytes/1048576-bits) from 1048576 to 2097152.  
34. Increase the number of bits in the `__uint1048576_t` type (currently, `__uint1048576_t` was 131072 bytes/1048576-bits) from 1048576 to 2097152.  
35. Increase the number of bits in the `__int2097152` type (currently, `__int2097152` was 262144 bytes/2097152-bits) from 2097152 to 4194304.  
36. Increase the number of bits in the `__uint2097152_t` type (currently, `__uint2097152_t` was 262144 bytes/2097152-bits) from 2097152 to 4194304.  
37. Increase the number of bits in the `__int4194304` type (currently, `__int4194304` was 524288 bytes/4194304-bits) from 4194304 to 8388608.  
38. Increase the number of bits in the `__uint4194304_t` type (currently, `__uint4194304_t` was 524288 bytes/4194304-bits) from 4194304 to 8388608.  
39. Increase the number of bits in the `__int8388608` type (currently, `__int8388608` was 1048576 bytes/8388608-bits) from 8388608 to 16777216.  
40. Increase the number of bits in the `__uint8388608_t` type (currently, `__uint8388608_t` was 1048576 bytes/8388608-bits) from 8388608 to 16777216.  
41. Increase the number of bits in the `__int16777216` type (currently, `__int16777216` was 2097152 bytes/16777216-bits) from 16777216 to 33554432.  
42. Increase the number of bits in the `__uint16777216_t` type (currently, `__uint16777216_t` was 2097152 bytes/16777216-bits) from 16777216 to 33554432.  
43. Increase the number of bits in the `__int33554432` type (currently, `__int33554432` was 4194304 bytes/33554432-bits) from 33554432 to 67108864.  
44. Increase the number of bits in the `__uint33554432_t` type (currently, `__uint33554432_t` was 4194304 bytes/33554432-bits) from 33554432 to 67108864.  
45. Increase the number of bits in the `__int67108864` type (currently, `__int67108864` was 8388608 bytes/67108864-bits) from 67108864 to 134217728.  
46. Increase the number of bits in the `__uint67108864_t` type (currently, `__uint67108864_t` was 8388608 bytes/67108864-bits) from 67108864 to 134217728.  
47. Increase the number of bits in the `__int134217728` type (currently, `__int134217728` was 16777216 bytes/134217728-bits) from 134217728 to 268435456.  
48. Increase the number of bits in the `__uint134217728_t` type (currently, `__uint134217728_t` was 16777216 bytes/134217728-bits) from 134217728 to 268435456.  
49. Increase the number of bits in the `__int268435456` type (currently, `__int268435456` was 33554432 bytes/268435456-bits) from 268435456 to 536870912.  
50. Increase the number of bits in the `__uint268435456_t` type (currently, `__uint268435456_t` was 33554432 bytes/268435456-bits) from 268435456 to 536870912.  
51. Increase the number of bits in the `__int536870912` type (currently, `__int536870912` was 67108864 bytes/536870912-bits) from 536870912 to 1073741824.  
52. Increase the number of bits in the `__uint536870912_t` type (currently, `__uint536870912_t` was 67108864 bytes/536870912-bits) from 536870912 to 1073741824.  
53. Increase the number of bits in the `__int1073741824` type (currently, `__int1073741824` was 134217728 bytes/1073741824-bits) from 1073741824 to 2147483648.  
5

1010-1011

1. All steps in the Hoare, Plotkin & Power.
2. All steps in the LMS Framework.
3. Steps to be added, to ensure some form of global consistency.
4. Consistent =  $\exists$  local  $\forall$  all local agents.
5. All changes to the abstraction grade, within  $2^n$  steps.
6. All further changes to plans to be treated separately.
7. All steps in the LMS grade  $J$ .
8. All steps in the LMS.

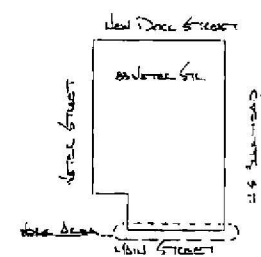
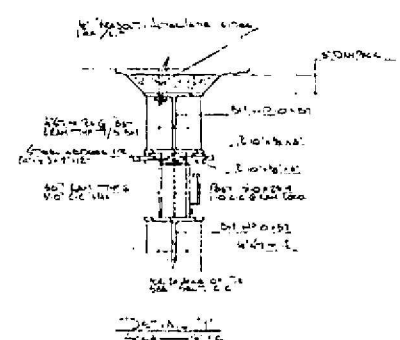
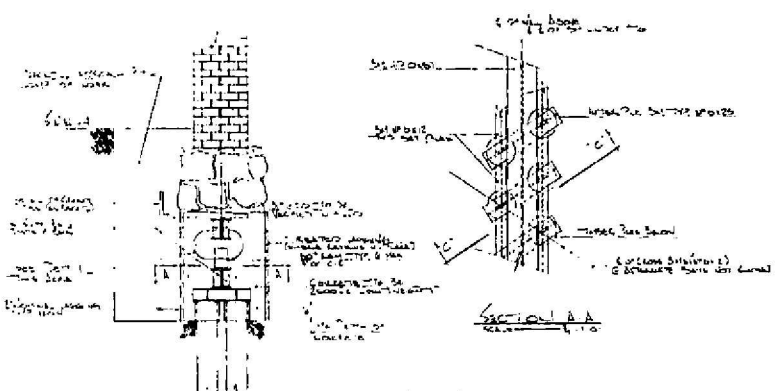
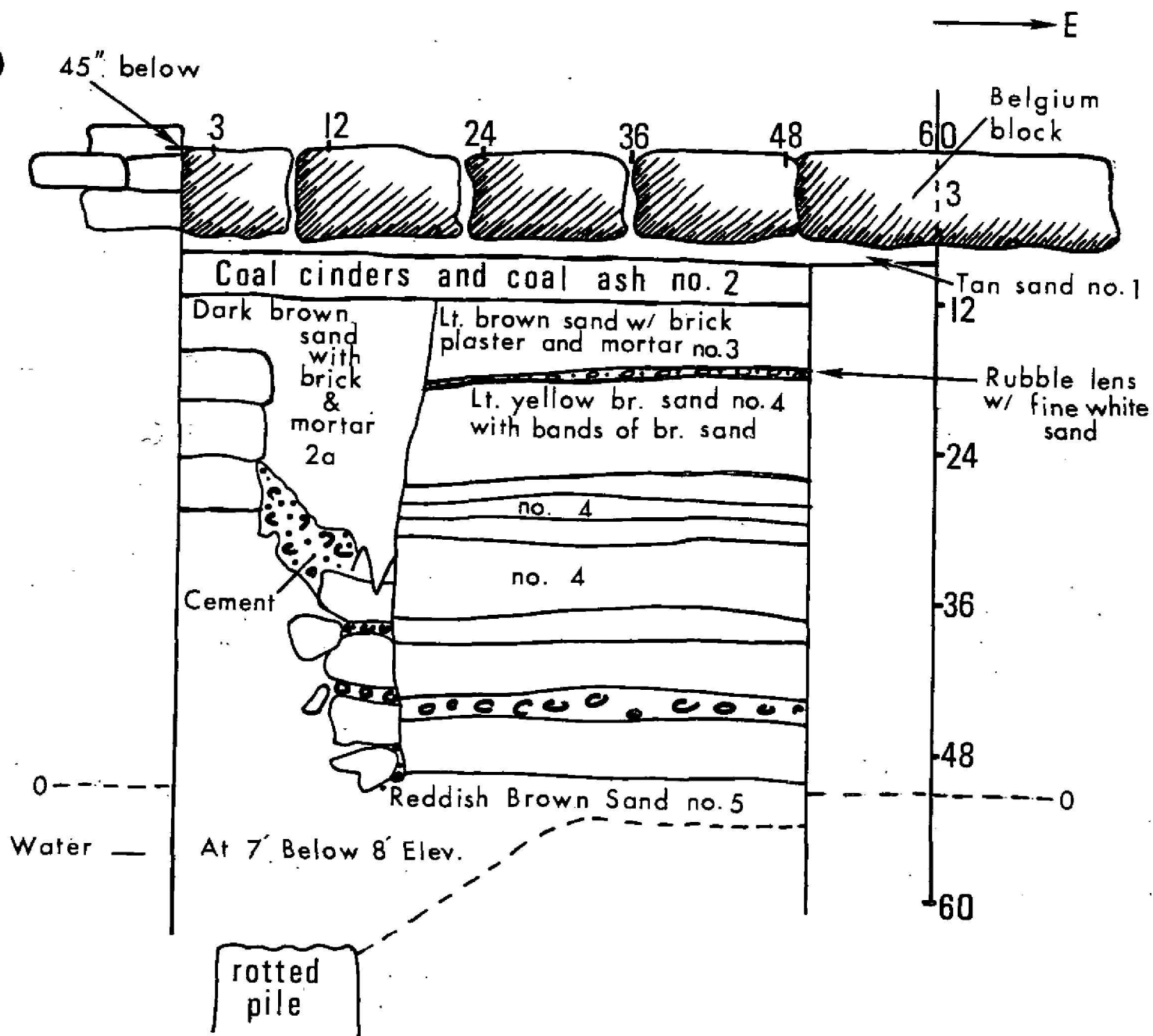


Fig. 16

**Underpinning & Foundation Constructors, Inc.**  
SMECHETS & COMPANY  
**AFL** 80-16 AIN STREET WESTFIELD, NJ 07090  
SUBJECT OF ENCLAVE WALL  
80 NORTH STREET  
WALL CONSTRUCTION  
RECEIVED 10/24/2004  
10/24/2004



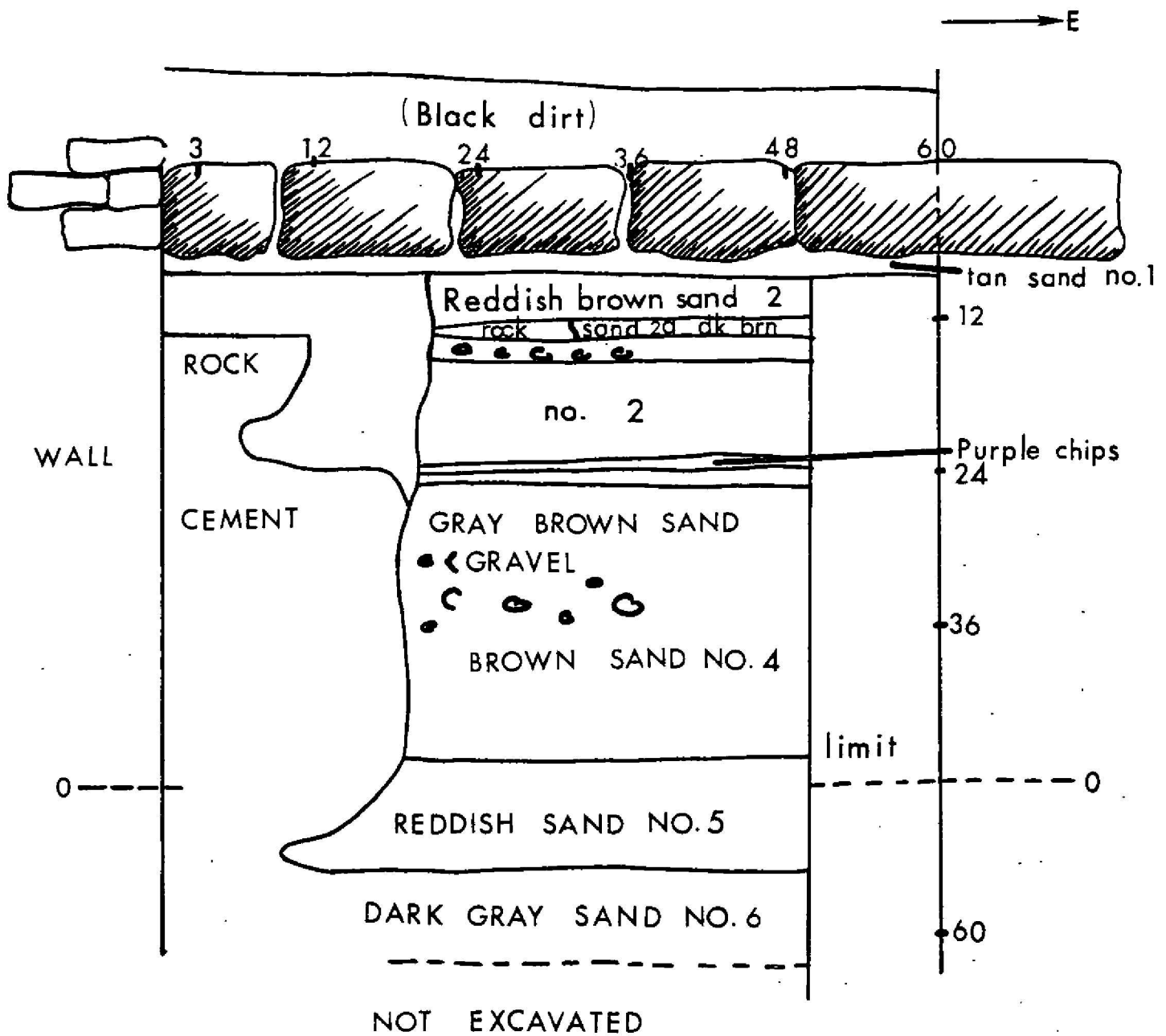


## TEST PIT No. 2

EAST WALL

Fig. 17





# TEST PIT No.3

EAST WALL



Fig. 18

Site No. cut Locat. of excav. Refer Map Refer Photo Cat. No.

21

ca. -2 ft elev.

D  
e  
s  
c.  
of  
L  
o  
c  
a  
l  
&  
F  
i  
n  
d

From 1/2 " screening -

bricks, "chinker", 1 glass frag, 1

china plate (blue rim) frag -

If Lab. should not clean check

FIND DATA CARD  
additional notes on back

Altman 12/13/78  
Collector date

Empire Stores  
Brooklyn Warehouse

112

Site No. cut 10 Locat. of excav. Refer Map Refer Photo Cat. No.

at -3.5' in front of bldg.

4 pcs. bone  
1 small iron nail14 pcs. ceramic (many may be  
from one bowl)

2 clay pipstems

1 large iron nail

D  
e  
s  
c.  
of  
L  
o  
c  
a  
l  
&  
F  
i  
n  
d

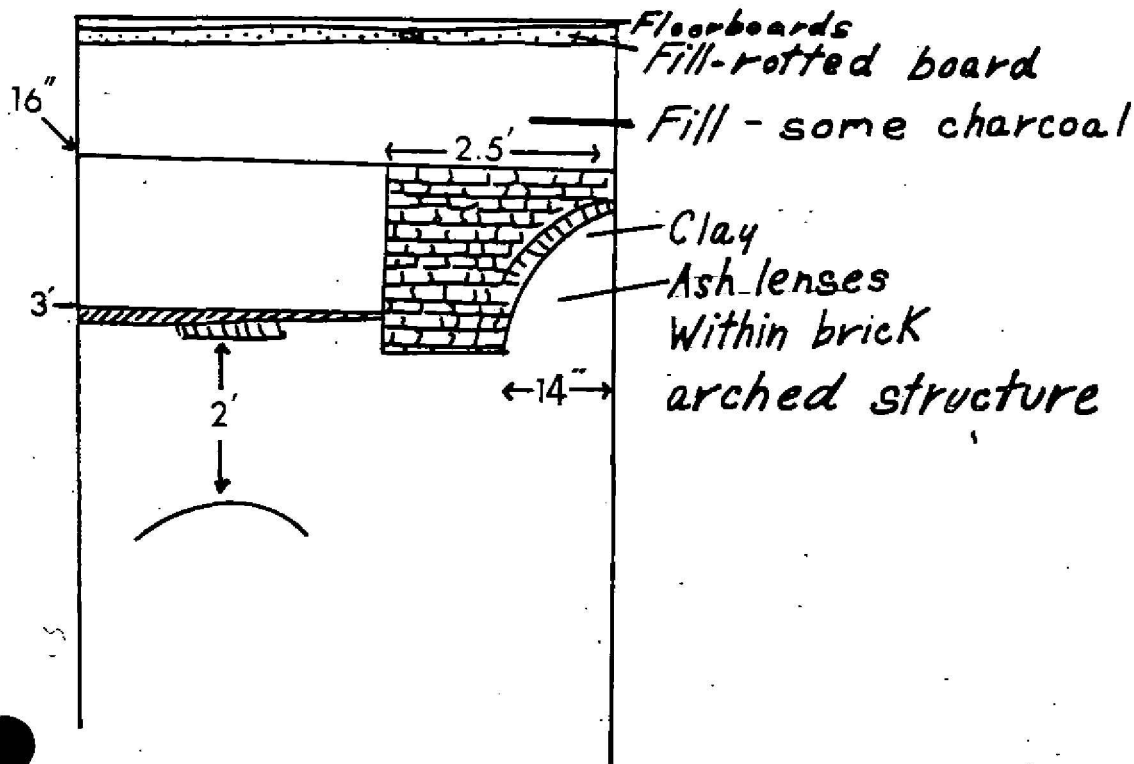
If Lab. should not clean check

FIND DATA CARD  
additional notes on back

A.T. Dec. 6, 1978  
Collector date

Fig. 20

TRENCH 1 EAST SECTION



TRENCH 3 NORTH SECTION

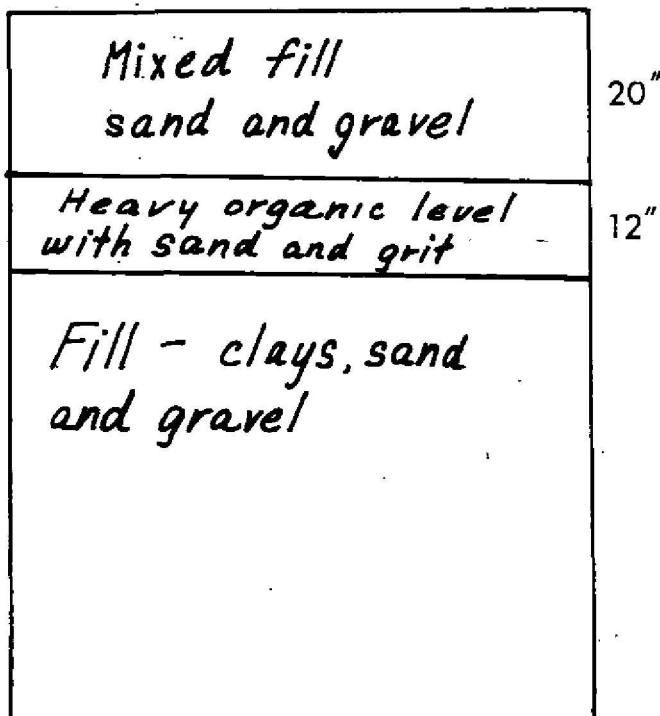
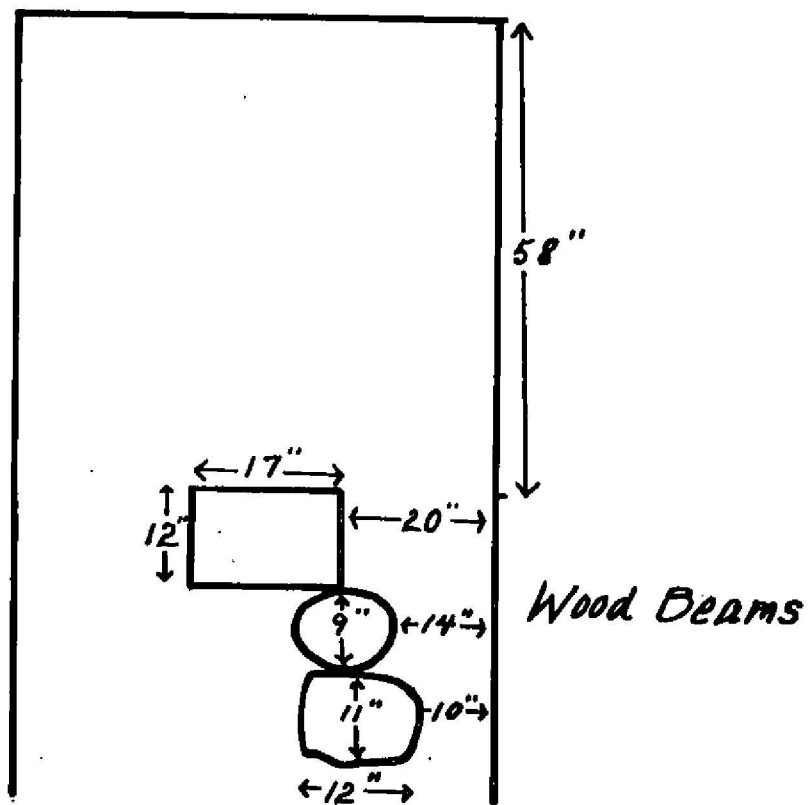


Fig. 21

Fig. 22

PIT 12 EAST SECTION



TEST  
PIT No.3 WEST FACE

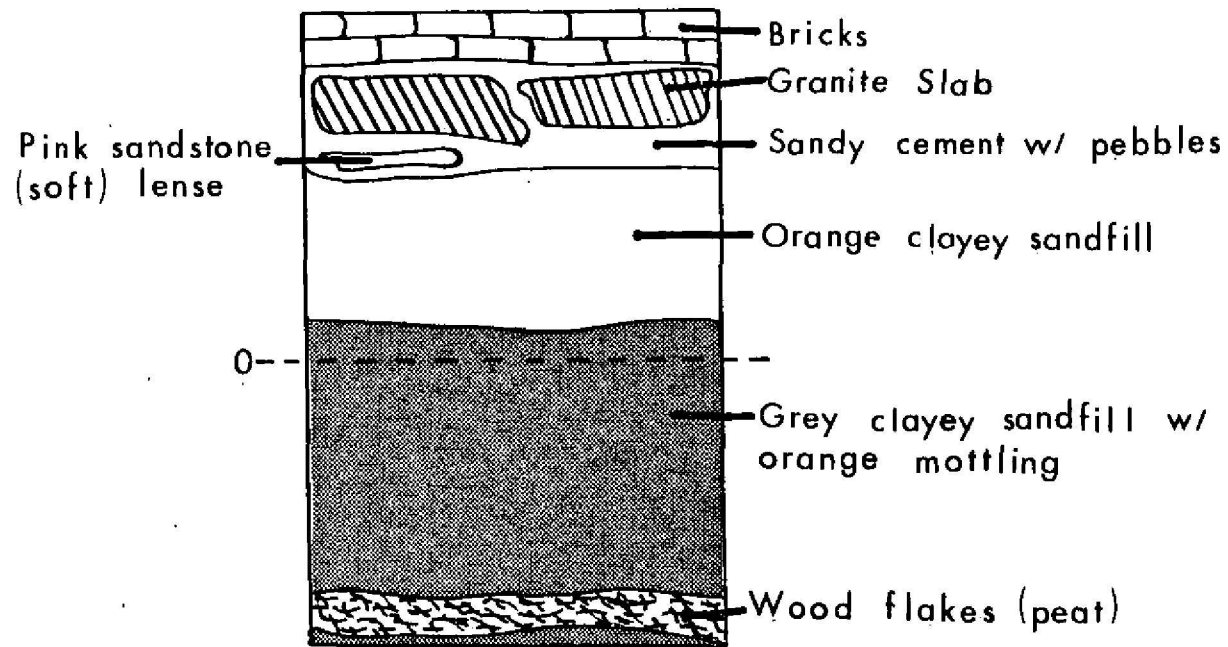


Fig. 24



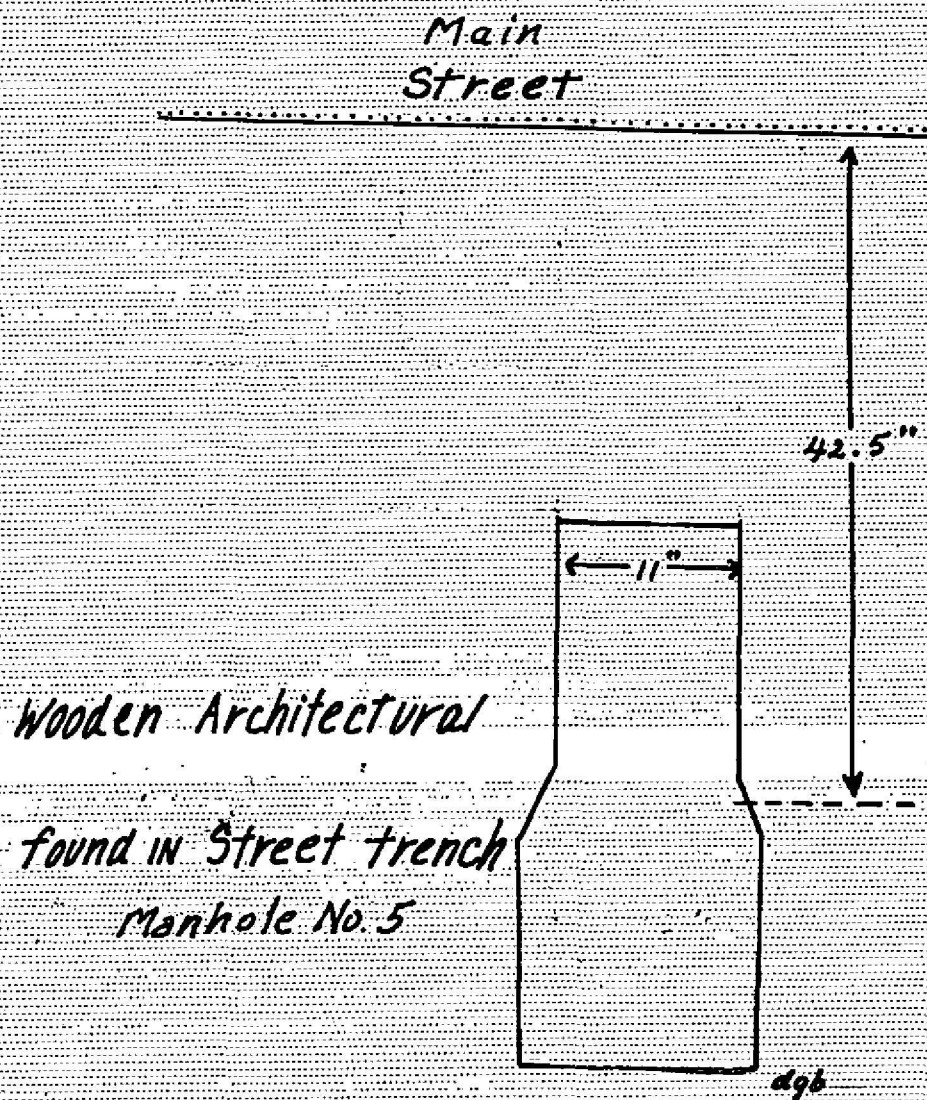
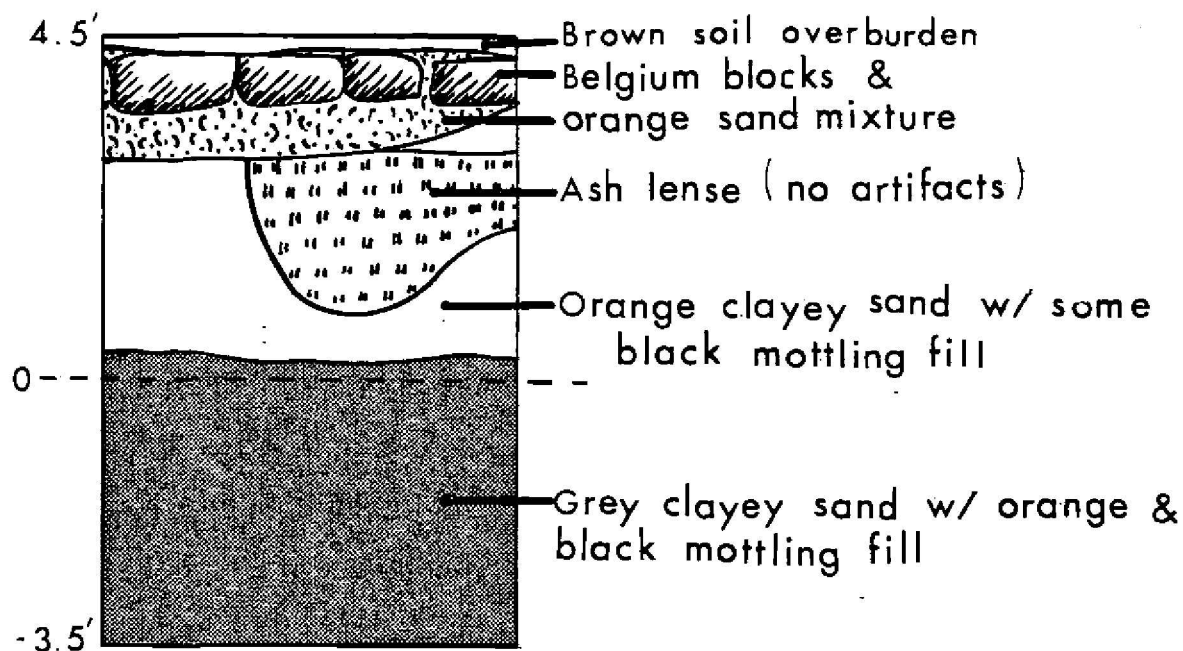


Fig. 23

TEST  
PIT No.4 NORTH FACE



TEST  
PIT No.4 EAST FACE

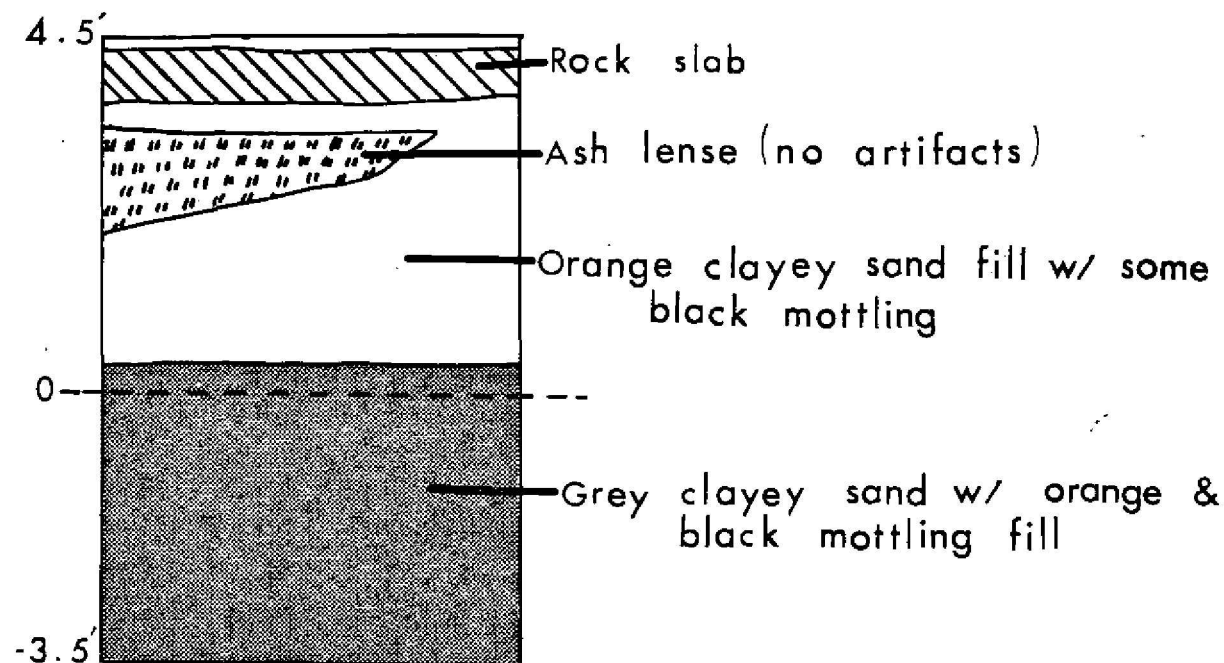


Fig. 25



# PIT 5 EAST SECTION

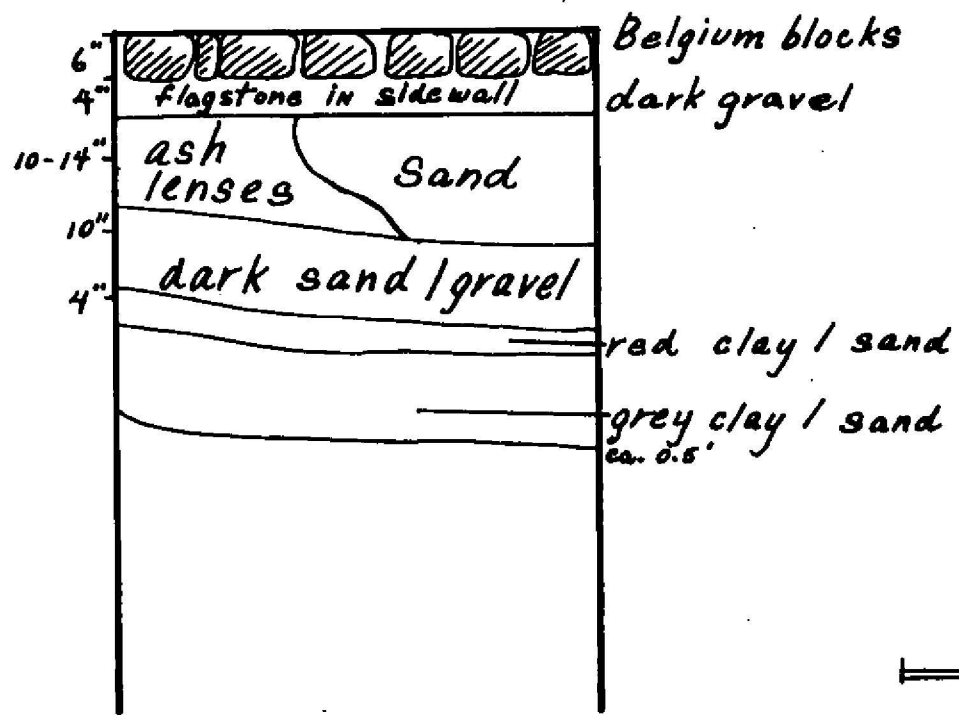


Fig. 26

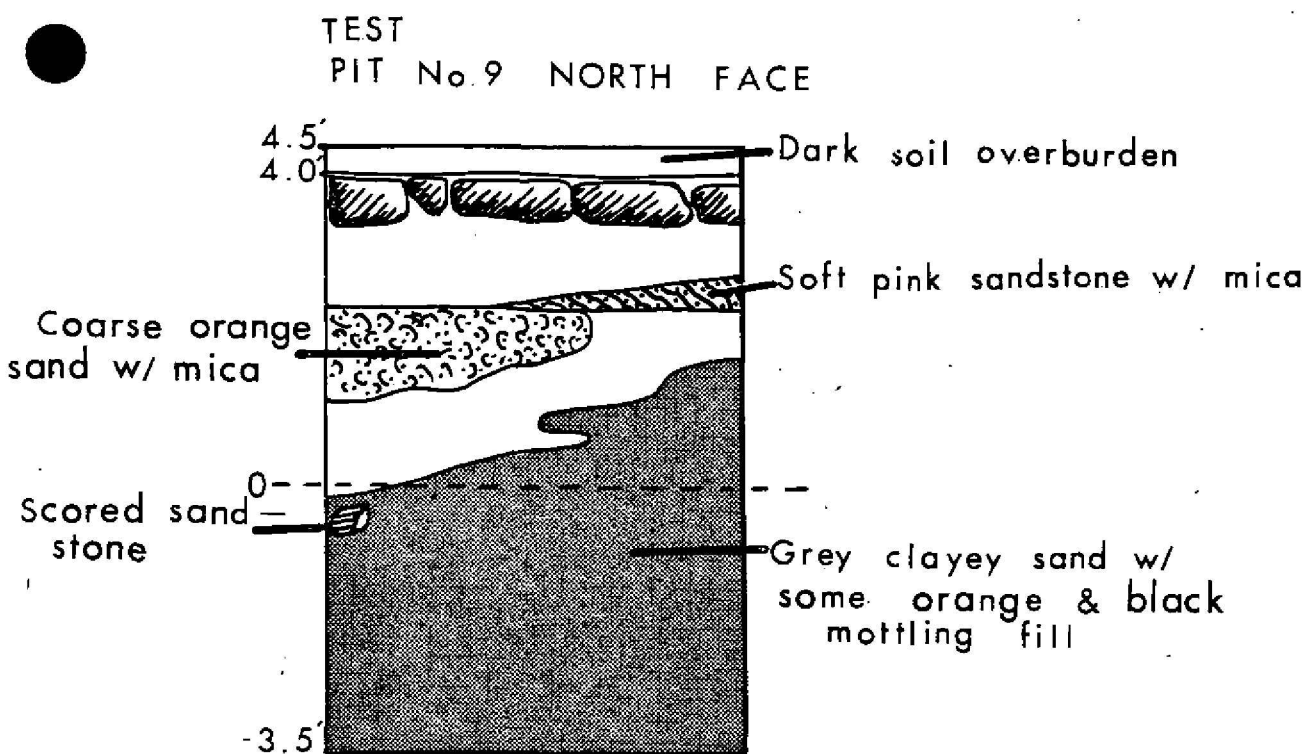
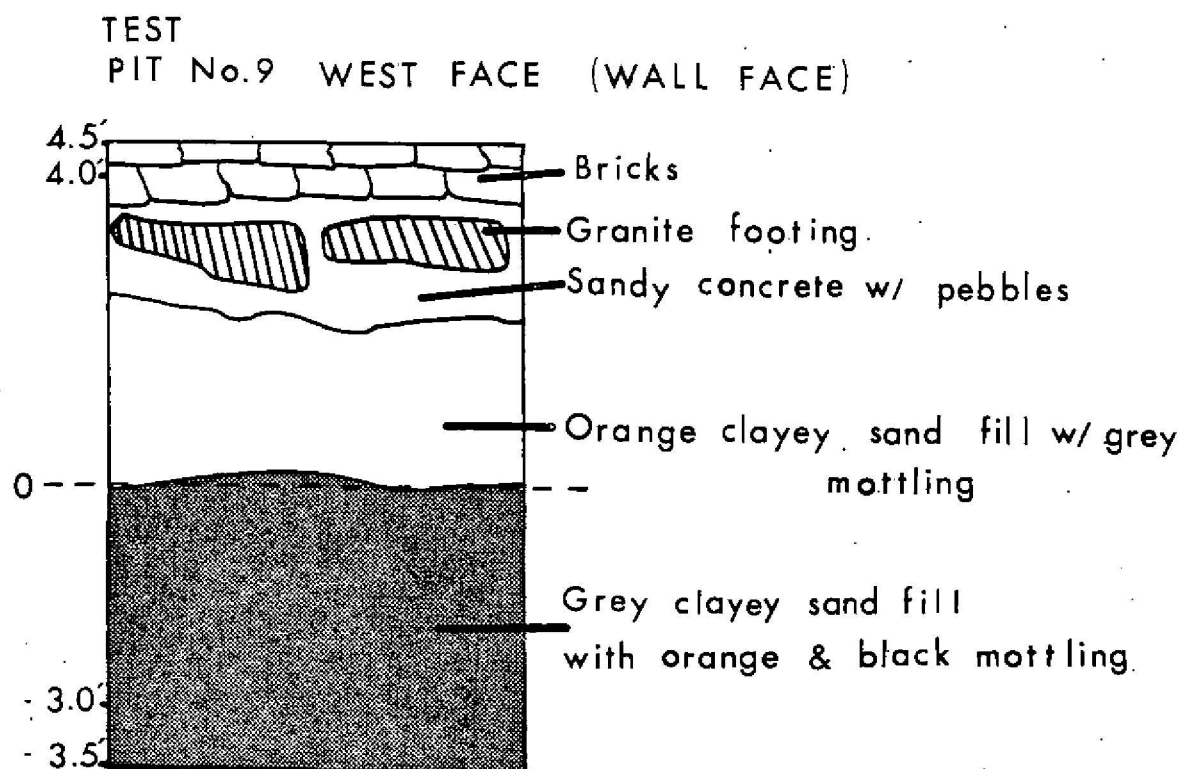
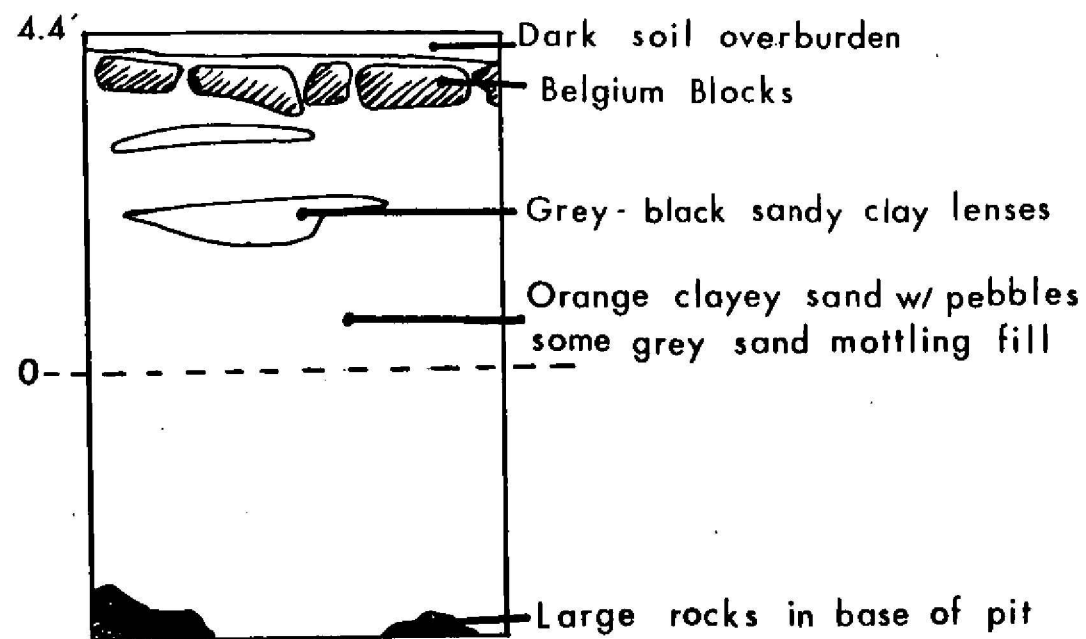


Fig. 27

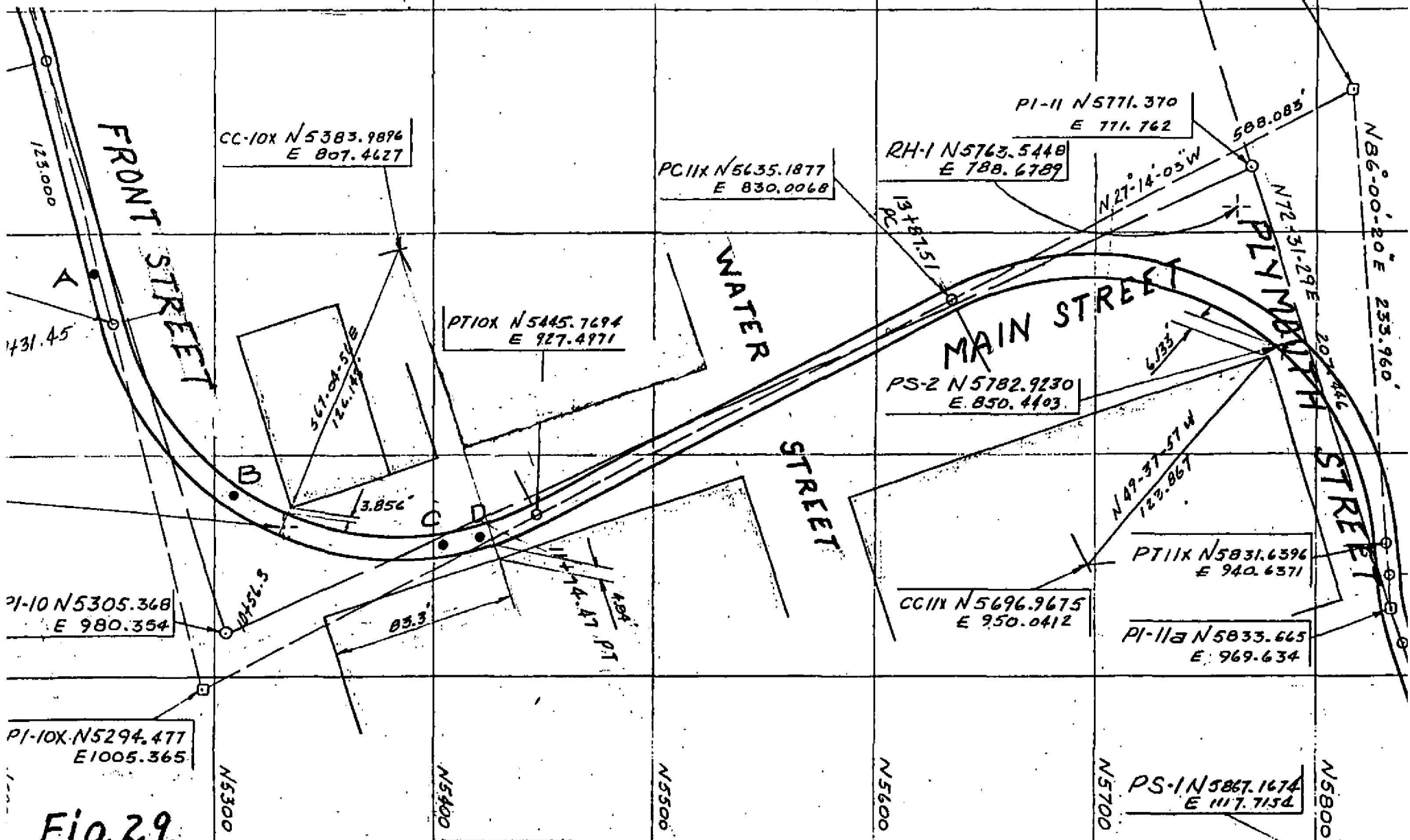


TEST  
PIT No. 22 NORTH FACE



*Fig. 28*

9X	76-08-49	250	195.838	332.254
10X	103-08-37	1	170.156	243.026
11X	113-14-23	1	204.893	266.815
11a	13-28-51	135	15.955	31.764
B	53-13-10	250	125.244	232.214
12	9-44-25	250	21.301	42.500



Main & Plymouth Sts.

DRAWN BY SA  
CHECKED BY \_\_\_\_\_

DATE 29 Aug 1978  
SCALE 1" = 60'

DWG NO.