

VOLUME I
TECHNICAL REPORT
ARCHAEOLOGICAL DATA RECOVERY
THE MILL POND SITE (BOS-HA-14)
BOSTON, MASSACHUSETTS

prepared for

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Littleton, Massachusetts 01460

and

The Central Artery /Tunnel Project
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ABSTRACT

An archaeological data recovery investigation was conducted at the Mill Pond (BOS-HA-14) site in Boston, Massachusetts. The site was previously identified through a Phase I, Step 2 and Phase II (site examination) archaeological investigations carried out by the Office of Public Archaeology between 1987 and 1989. Site examination investigations at Trench A, Block NE03 identified intact archaeological remains associated with wharves and wharf-related sites, landfill, and settlement and structure.

The data recovery consisted of documentary research and field investigation, which consisted of the manual excavation of 21 5x5 ft. units, test trenching, and mechanical stripping in an area approximately 4,299 sq. ft. (390 sq. m.). The data recovery excavations identified five major archaeological resources: an early wharf, probably dating to the last quarter of the seventeenth century; a bulkhead and dock dating to the last quarter of the eighteenth century; an early land surface, ca. 1700; a land surface from the middle-to-late eighteenth century; and landfill from three periods: Plantation (1630-1675), Colonial (1675-1775) and Early Republic (1775-1830).

Research topics addressed as a result of the investigations focused on commerce (social and economic context of the wharf and bulkhead-dock; the social and economic context and the source of the fill; the folkways of wharf and bulkhead-dock construction and dates of construction), the reconstruction of the environment around the wharf (pollen profiles produced a record of environmental and landscape changes from 1630 to 1823; evidence for changing land use addressed the development of the cultural landscape and the personal-health environment of Boston's residents was considered in discussing historic sanitation practices with respect to landfills), and urban lifeways (use of material culture to express ethnicity, social class, and gender; consumption patterns by household, household type, and neighborhood; changes in consumption patterns over time comparing Boston with other port cities).

Underlying themes guiding the study included whether regional English cultures carried their distinctiveness to the New World is correct when viewed from the archaeological record and whether regional cultures eventually blended together and when this occurred. The data on foodways did suggest there were regional differences that continued into the nineteenth century and that there were regional differences in the speed in which the culture of consumption spread. More data is necessary to support conclusions about the regional comparison of social and cultural change from an historic archaeological perspective.

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An important component of the project was public interpretation. Ellen Berkland (City of Boston Archaeologist), Georgess McHargue, and Judith Besette provided excellent on-site public interpretation concurrent with the investigations. Kennedy Violich Architects designed and built the visitor viewing platform.

Several Arthur D. Little, Inc. staff members, including Mark Jansky, Bob VanHorn, and Janet Kaczinski, provided assistance on site health and safety issues. Their assistance and support was greatly appreciated.

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Several contextual studies were undertaken which greatly enhanced the interpretation of the sites. Jeffrey A. Butterworth examined the footwear, Joanne Bowen and Gregory J. Brown undertook the faunal analysis, Lawrence Kaplan and Marie Mansfield King examined the floral remains, Gerald Kelso analyzed the pollen and provided needed insight throughout the project, and Margaret T. Ordonez and Linda Welters examined a textile and Gordon Jacoby conducted tree-ring analysis on wood sections.

Elena Décima, Michael Roberts, and Charles D. Cheek provided project management. Joseph Balicki supervised the field investigations with the assistance of Leigh Phillips. Project team members who participated in the excavation were Stefan Claesson, Jim LaFoe, Brian McIntosh, John Golden, John Walkey and Andrea Zeiner. Leith Smith supervised the laboratory, Doug Currie supervised the conservation process and Martin Dudek supervised the data entry. Laboratory staff included Reed Avery, Ellen Berkland, Nancy Jo Chabot, Lynn Clark, Jean Whispering Deer, David Gould, Melissa Groveman, Bruce Herbst, Harriet Hornblower, Paul Lagréze, Sue LoGuidice, James Mambro, Eileen O'Connor, Nancy Osgood, Barbara Donohue (formerly Putnam), Elizabeth West, and Natasha Zamecnik. Charles Cheek, Leith Smith and Barbara Donohue undertook background research. Charles Cheek and Joseph Balicki were primary authors and Sarah Ruch and Connie Brown produced the graphics. Georgess McHargue and Charles D. Cheek served as internal reviewers, with Georgess McHargue also serving as editor.

I. INTRODUCTION

A. Project Description

The Central Artery/Third Harbor Tunnel Project (CA/T) is being undertaken by the Massachusetts Highway Department (MHD), in conjunction with the Federal Highway Administration, as a means of improving access from the city of Boston to Logan Airport and of remedying existing traffic conditions on the city's downtown Central Artery. Portions of Interstate Highways 90 and 93 are involved.

The project will widen and depress a three-mile stretch of highway from the Charles River/City Square (Charlestown) area to the proposed Third Harbor Tunnel/Massachusetts Turnpike (I-90) interchange in South Boston. After redesign, the Central Artery will accommodate four lanes of traffic in each direction, retaining the existing route of the Artery from Causeway Street to the I-90/I-93 interchange and improving ramp connections along the route. The existing elevated roadway will then be removed.

The newly constructed Third Harbor Tunnel will carry a four-lane extension of I-90 (the Massachusetts Turnpike) in both directions to East Boston's Logan Airport, thus greatly alleviating the present congestion on the Tobin Bridge and Callahan/Sumner tunnels, which presently afford the only traffic crossings of Boston Harbor.

Because of the potentially adverse impacts of the CA/T project on historic and prehistoric cultural resources, Phase I, Step 2 and Phase II (site examination) archaeological investigations were carried out by the Office of Public Archaeology (OPA) of Boston University between 1987 and 1989. As a result of the Phase I documentary research, 15 study blocks associated with the project path were determined to contain significant resources (Elia and Seasholes 1989). Included within these blocks was the block designated NE03 (containing Paddy's Alley, Cross Street Back Lot and Mill Pond sites; Fig. I-1).

Site examination (Phase II evaluation) was carried out by the OPA in six potentially significant locations, including the Mill Pond site (BOS-HA-14), which was subsequently recommended for Phase III data recovery (Elia et al. 1989). The purpose of the data recovery was to retrieve significant archaeological data to mitigate adverse effects resulting from construction during the Central Artery/Tunnel Project. The investigation was conducted in accordance with a permit application (Timelines 1992) approved by the Massachusetts Historical Commission (MHC), under the authority of Massachusetts State Law (950 CMR 70).

John Milner Associates, Inc. (JMA), completed the field-work portion of the Phase III data recovery at the Mill Pond site (BOS-HA-14) during June and July 1993. JMA was subcontracted by Timelines, Inc. for the Massachusetts Highway Department (MHD) to undertake this investigation as part of the Central Artery/Tunnel Project. JMA also shared in documentary and contextual research, analysis, and coordination tasks. Timelines conducted laboratory-processing and management tasks for the data recoveries, as well as participating in analysis and documentary research.

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Figure I-1 - Site location on USGS Boston South Quadrangle (USGS 1987).

The project area is defined as the Mill Pond site (BOS-HA-14). The site is located in the Boston's North End, between Hanover and Endicott streets, and between Cross and Endicott streets (Fig. 1-2).

The Mill Pond site (BOS-HA-14) lies within an irregular area measuring approximately 55 ft. x 100 ft. (16.8 m. x 30.5 m.), or 5,500 sq. ft. (1,815 sq.m.). Within this area, JMA proposed to hand excavate twenty 5-ft.-x-5-ft. units and to uncover at least half of the wharf identified during the site examination, using a combination of machine excavation, hand clearing, and hand excavation. The site straddles the original edge of the cove that became the Mill Pond. The preserved area of the site is bordered by nineteenth- and twentieth-century features that have disturbed adjacent deposits. The Phase III excavations were concentrated in the seventeenth- and eighteenth-century deposits. However, archaeological deposits from the nineteenth and twentieth centuries were also present and contributed to the stratigraphic sequences of both sites.

Prior to excavation, the project area consisted of an asphalt-surfaced parking lot located beneath the elevated Central Artery in the North End section of Boston. Directly to the east of the site is the Freedom Trail (historic Salem/Back Street).

The modern cultural landscape offers few clues to the earlier urban landscape. Alteration of the street plan and demolition of nineteenth- and twentieth-century buildings have created difficulties in accurately placing the excavation location on historic maps. However, excavation revealed foundations and property lines associated with the nineteenth- and twentieth-century lots that fronted on Blackstone Street to the south. These features facilitated location of the site on historic maps.

B. Previous Research

Phase I research presented a generalized historical context for the North End of Boston and relied on cartographic sources to identify and locate areas likely to contain intact archaeological resources (Elia and Seasholes 1989:128,133,138-141). Site examination investigations at Trench A, Block NE03 identified the area as containing intact archaeological remains associated with wharves and wharf-related sites, landfill, and settlement and structures (Elia et al. 1989:75). The site was recommended as eligible for the National Register of Historic Places.

The National Register eligibility of the Mill Pond site (BOS-HA-14) was stated to fall under Criteria C and D (36 CFR 60.4). The site was described as containing a "wooden wharf structure dating at least as early as 1709, and extending from the original shoreline into the former Mill Pond; deposits of Mill Pond fill (ca. 1808-1828 overlying the wharf; and remains of post-filling development (e.g., structures and cobble surface)" (Elia et al. 1989:75). The significant periods at the site were determined to be the Colonial period (1675-1775) and the Early Republic period (1775-1830) (Elia et al. 1989:75). It was suggested that data recovery would provide information on "the nature and processes of land use along the original shoreline of Mill Pond; small scale commercial activity; the form and construction of technology of early, private wharves; changes in land use and development in a single historic lot" (Elia et al. 1989:75). Although the entire site area was not tested during the site examination, the assumption was made that the original shore of the Mill Pond, as well as the rear edge of a house lot, was adjacent to the network of horizontal wharf timbers.

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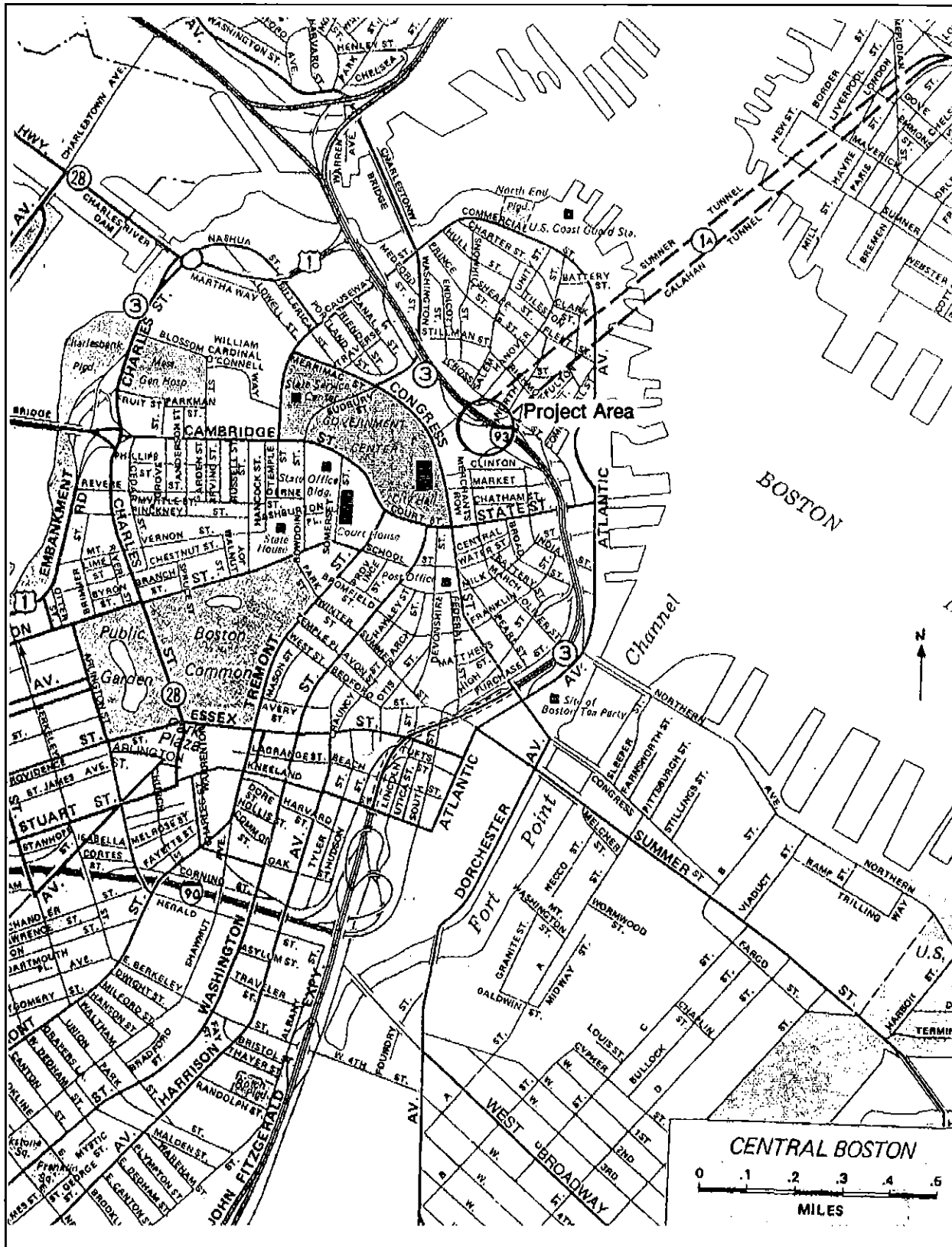


Figure I-2 - Site location of Mill Pond site (BOS-HA-14) on street map of Boston.

The site was found eligible for inclusion in the National Register of Historic Places and the OPA, in consultation with the MHD, State Historic Preservation Officer (SHPO) and the Boston Landmarks Commission (BLC), recommended a data-recovery program (Phase III).

Several sections of this report are based on text from the permit application (Timelines 1992) and from the partial draft Paddy's Alley/Cross Street Back Lot report (Cook and Balicki 1994). The Paddy's Alley/Cross Street Back Lot and Mill Pond sites are part of the same project, and the portions of the research design extracted herein from the permit application were written by Cheek and Cook.

C. Historic Setting

1. Boston

Boston was settled in 1630 by a small group of Puritan religious refugees from Britain (Rutman 1965). During the 1630s, the "Great Migration" brought many more, principally from heavily Puritan East Anglia, who soon settled surrounding towns and developed a social environment based on East Anglian regional culture (Fischer 1989:13-205). The culture was, of course, modified by its interactions with the conditions of the New World and by the Puritans' beliefs about how a well-ordered society should function.

The town's Puritan leaders were initially able to prevent the rise of a merchant class, but the Puritan ideology was ultimately unable to suppress individual economic initiative and so found an accommodation with this behavior (Rutman 1965). By the 1640s, the records of Boston notary public William Aspinwall speak of extensive, long-distance trade with Britain, with the Mediterranean, via Spain, and with the Caribbean. The principal exports were salt fish, furs, wood, and agricultural produce. As fish and furs decreased in importance, the other commodities fueled the development of Boston into the principal seaport in British North America a status it maintained from the late seventeenth century to the mid eighteenth century (Bailyn 1955; McManis 1975; Meinig 1986:100-101).

There were interruptions in prosperity. One cause was frequent wars with the region's Native American population in 1675-1676 and sporadically into the eighteenth century, and later with France. Another was the rise and fall of economic cycles, although the local economy was ultimately able to absorb these. British regulation of commerce became a sore point, and in 1689 Bostonians overthrew Sir Edmund Andros, the unpopular royal governor, and sent him back to England, learning after the fact that the "Glorious Revolution" had deposed his patron, King James II. However, the colony's original charter, which permitted considerable self-governance, was voided, and the new royal charter afforded less local control (Warden 1970).

After about 1720, Bostonians could no longer count on continuous prosperity. Costly military expenditures and the rise of other ports had an impact. The extent to which social inequalities increased discontent in Boston is not known, however, because tax records for the period between 1695 and 1771 have not survived. A principal issue of concern to historians is how Bostonians became radicalized to the point of defying royal authority (see G. Nash 1976; Warden 1976b; and Price 1976 for the essentials of the debate).

The economic recession in the 1740s and 1750s, caused partially by the Spanish-English war, as well as the loss of a large number of young males during other mid-century wars has been implicated in the cessation of population growth (Price 1974:143-144; G. Nash 1979:120).

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The passage of the Stamp Act in the 1760s, and the Townshend Acts a decade later, and the responses in the form of demonstrations and non-importation agreements are too well known to warrant retelling (see Morgan and Morgan 1953; Bridenbaugh 1968; Warden 1970; Hoerder 1976; G. Nash 1979). The same is true of the garrisoning of Boston by British troops, the Boston Massacre, the British march on Lexington and Concord, the siege of Boston, and the Battle of Bunker Hill (see Porter 1881; Hale 1881; French 1911).

The effect of the Revolution on Boston's merchants ran deep (McCusker and Menard 1988:351-377) and was exacerbated by the Jeffersonian embargo and the War of 1812. Nevertheless, the economy and population expanded with optimism about the potential for growth. The actual and perceived potential for growth eventually created a demand for both residential and commercial land. The most pertinent of these land-creation projects was the filling of Mill Pond, which created approximately 70 acres of land from 1804 to 1823. This was but one of the many landfill projects that began in the early 1800s. Although not finished until 1863, the filling of the Back Bay began in 1803, while filling began in the South Cove in 1806, in the East Cove in 1823, and in South Boston in 1836 (Tunnard and Read 1956:106).

The creation and development of waterfront commercial land also proceeded during this period and was promoted and financed by some of Boston's wealthiest citizens. The improvement of the southern Town Cove waterfront was undertaken by four wealthy and prominent men, Harrison Gray Otis, Francis Cabot Lowell, Uriah Cotting, and James Lloyd, Jr., in two simultaneous development schemes. One was the Broad Street project, for improvement of the area between State Street and Milk Street, and the other was development of India Wharf, extending south from Milk Street to the site of the South Battery on both sides of Battery March Street. Together the four men began purchasing property in these areas as early as 1803 and possibly before. They created the Broad Street Association, incorporated 11 February 1805, as a means of legally securing the rights of proprietors to the wharves, and completed the project by 1808 (Kirker 1969:188).

Boston merchants prospered after 1815, and their profits began to flow into industrial enterprises, initially outside of Boston (Kasson 1976). With expansion of Boston's South End later in the century, space became available for industries within town, including manufacturing confectionery, furniture, architectural woodwork, and pianos (Stott 1984). These and smaller industries soon replaced artisan's production within the city.

Boston, like most Eastern cities of the time, became geographically polarized. African-Americans concentrated in the Beacon Hill area (Bower 1991). By the 1850s, immigrants from Ireland were crowding into the North End and Fort Hill neighborhoods (Handlin 1959). Later, they would be followed by Italians in the North End and West End. These later arrivals, however, did not play a role in the relatively early archaeological sites that are discussed here.

2. The North End

Walter Muir Whitehill characterized the post-Revolution North End as a wealthy residential district that became increasingly "a region of small merchants, tradesmen, and artisans, interspersed with a few conservative families of larger resources, who were blessed if they would budge" (Whitehill 1968:113). Because of the active waterfront, however, there was probably always a substantial working-class element in the neighborhood. They would have been clearly identifiable on Pope's Day, November 5, when revelers from the North End competed with those from the South End, each group attempting to steal the "Pope" effigy from their opponents and burn it (Savage 1873:31-33; Thwing 1920:78-79). A similar rivalry developed between the boys of the North End and the West End after the Mill Pond was filled (Johnson 1895:73).

During most of the eighteenth century, wealthy and poor probably lived cheek-by-jowl in the North End; there is evidence that they did so elsewhere in Boston (Pencak 1979). However, there is also evidence that concentrations of artisans were beginning to occur in Boston as early as 1789 (Johnson 1994).

The Mill Pond site was occupied by artisans and then merchants for most of its history until the filling of Mill Pond. It is difficult to identify broad residential patterns for the earlier periods without detailed deed and other documentary research along an entire street or series of neighboring streets. The filled area of Mill Pond in the nineteenth century supported a population largely dependent on the docks, wharves, and shipyards (Knights 1971:13) and the area adjacent to the Mill Pond site became commercial.

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II. RESEARCH DESIGN

Two overarching concepts guided the formation and execution of the research design. 1) The Boston area is a cultural landscape with a specific history; and 2) the Boston area is a regional core that was created by, and is the expression of, a series of activities. These concepts subsume the research foci presented below. The following discussion is taken from the permit application (Timelines 1992).

The approach to the cultural landscape is modified from that established for rural historic landscapes (McClelland et al. 1990; see also Cheek 1991 for a discussion of this modification). A cultural landscape is a form that the natural land surface has assumed as a result of both conscious modification to create a pleasing landscape and the land-use processes that unintentionally create landscapes in the course of using the land. A cultural landscape is both created and modified by regional and local activities; the cultural landscape frames and structures those activities, as well. Cultural landscapes can be analyzed at different scales -- regional, local, and site-specific.

Cultural landscapes can be considered within the context of four processes that shape the land: patterns of spatial organization, land use and activities, response to natural features, and cultural traditions. Patterns of spatial organization on the regional scale are the result of relationships among the natural setting, the social and political organization, and the organization of the means of production. For example, the major impact on the overall organization of the city of Boston is the urban street system laid out during the Plantation period. The overall pattern was affected by the relationship between the major economic activities in the city: trade, which was located along the shoreline; and the administrative offices within the city. This pattern was altered and intensified as the population increased, more land was needed, and additional economic functions developed that required transportation networks to the continent's interior, not to England. The local structure and character of the neighborhoods also probably changed with the changes in the economic functions of the city.

At the scale of the site, the historic cultural landscapes investigated archaeologically tend to be restricted to private areas that are increasingly circumscribed by the processes and activities of urbanization. However, by conceptualizing these spaces as part of the cultural landscape, one is alerted to aspects of archaeological sites that would otherwise not be obvious. This conceptualization directs us to examine how the natural landscape is transformed in the urban setting and to examine the cultural landscape as the center of activities that are important to the individuals that create and are affected by these landscapes. Furthermore, it directs the researcher to focus on the spatial organization of house lots, on urbanization processes that create limited urban open spaces, and on the creation of new spaces -- new land -- for commercial and residential areas, which in turn affect development of town plans.

Land use and activities such as residential, commercial, and industrial uses form, shape, and organize the landscape with different degrees of intensity. Historic farming, urbanization, and industrial activities have cumulative effects on the landscape. Each of these activities leaves a different kind of mark on the landscape and can succeed another, leaving survivals of previous landscapes as evidence of earlier activities.

Human response to natural features affects the landscape in various ways. Major natural features can affect both the location and organization of human communities. On the regional scale, the role of historic Boston's water-dominated physical setting was critical in creating the cultural landscape. The water facilitated transportation and the development of Boston as a commercial center. The city's northern location also indirectly influenced the health of the population, in that there was less exposure to certain epidemic diseases. On the other hand, the

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populace was exposed to those industrial and intestinal hazards common to city dwellers of the time. Also, its seaport location contributed to the introduction via contaminated ships of epidemic diseases whose vectors were not temperature-sensitive. Besides affecting the economy of the historic populations, specific land forms such as the Shawmut Peninsula influenced the pattern of settlement as well.

The cultural traditions and historic experiences of the majority of the immigrants to Massachusetts, who came from eastern England, affected a number of features of the settlement. For example, Massachusetts was the only North American British colony where towns were an important part of the landscape, as they were in eastern England (Fischer 1989:183; Meinig 1986:103-104). Furthermore, the historical experience in this area of England, in conjunction with the cultural values of Puritan ideology, may have led to a more even distribution of wealth than in other colonies (Fisher 1989:44;166-174), and an emphasis on minimizing the outward displays of wealth, at least in rural areas (Beaudry 1984b).

Core versus periphery is also an important concept for the project, and for Massachusetts archaeology in general (Massachusetts Historical Commission 1982). The core/periphery model posits that the use of a particular local landscape at a particular time does not occur in a vacuum, but is related to economic and social development elsewhere in the region, the nation, or the world.

Historic Boston in Colonial times was always peripheral to London, providing the European metropolis with raw material from the sea, farm, and forest (Meinig 1986:259). Boston, in turn, was a regional core with its own periphery that provided the raw materials for both the city's own sustenance and transshipment to other parts of the Atlantic system.

The regional core concept views historic Boston as playing a series of important roles within the context of the surrounding region. The city came to have this position because of its role in the Atlantic economy, which was derived from "the character of [Boston's] trade and of the institutional arrangements produced by the marketing requirements of the goods traded" (Price 1974:140). The characteristics of the relationship between Boston and its periphery and Boston's role as a periphery vis-à-vis London created a regional center that was different from other New England port cities, such as Newport and New Haven.

Archaeological material from the Mill Pond excavation will be compared to that from other port cities from New England to Virginia. The comparison may show that cities that had different functions in the Atlantic trading community, and therefore displayed different social and economic structures and relations with Britain, exhibit differences in patterns of urban consumption and the expression of social position. For example, Boston, New York, and Philadelphia had similar positions in the Atlantic trade with respect to Britain, judging from the products traded and their financial relations with the mother country. These were different from smaller towns, such as Providence and New Haven, which carried on trade with the West Indies but not to any great extent with Britain (Price 1974:173). Regional differences may also prove to be identifiable. However, by the late Colonial period, regional differences in material culture among the port cities were vanishing because of increasing communication among the colonies.

The research design for Mill Pond was informed by the concepts of the cultural landscape and the core/periphery model. It includes aspects of all four of the major research foci defined in the permit application: environment, commerce, spatial organization, and urban lifeways. The themes of interest in each focus are dynamic rather than static concepts; the material referents of the concepts respond to changing conditions engendered by the processes

of urbanization in Boston. The relative importance of such processes shifts and changes in response to the new conditions they create and to changing external conditions.

The data-recovery excavations identified five major archaeological resources: an early wharf, probably dating to the last quarter of the seventeenth century; a bulkhead and dock dating to the last quarter of the eighteenth century; an early land surface, ca. 1700; a land surface from the middle-to-late eighteenth century; and landfill from three periods, Plantation (1630-1675), Colonial (1675-1775), and Early Republic (1775-1830). The two earlier landfills are the fill of the wharf and bulkhead; the later landfill is associated with the filling of the Mill Pond, but was actually laid down during the construction of Pond Street (see discussion below).

The recovered archaeological resources pertain primarily to the commerce research focus. They include the wharf itself and the bulkhead-dock as well as the landfills from the three periods mentioned above. In addition, there may be some surfaces or "caps" of the wharf and bulkhead. The topics that are addressed include the social and economic context of the wharf and bulkhead-dock; the social and economic context and the source of the fill; and the folkways of wharf and bulkhead-dock construction and dates of construction. The growth of Boston as a regional core as measured by the growth of wharf facilities is not directly addressed since the docking facilities at the site played, at most, a minor role in the growth of Boston.

The environmental research focus concentrates on the reconstruction of the environment around the wharf. Complete pollen profiles from the late 1700s down into the original bottom of Mill Pond produced a good record of environmental and landscape changes from 1630 to 1823, especially the creation of new land, for which a continuous environmental record exists. The evidence for changing land use is used to address the development of the cultural landscape. The personal-health environment of Boston's residents is also considered in discussing historic sanitation practices with respect to landfills.

The archaeological research did not provide much information with which to address the spatial-organization research focus. The edge of the wharf and, indeed, the edge of the Mill Pond were discovered. However, only the yard surface that overlay the original wharf was uncovered, and no outbuildings and only a few yard features were present. The primary topic addressed under this research focus is the spatial organization of the neighborhood during these years.

Material was recovered from several periods with which to address the urban lifeways research focus. The earliest material came from the shore of the Mill Pond. Other deposits dated to the middle of the eighteenth century, and still later deposits, to the end of the nineteenth century. The deposits from the earlier part of the Colonial period appeared to be assignable to specific households. The material from the late nineteenth century was from a concentrated dumping episode in a bulkhead and may have come from the neighborhood, if not the house lot. No domestic material in good context was recovered from the Early Republic period.

Within the urban lifeways research focus, the following topics are addressed: use of material culture to express ethnicity, social class, and gender; consumption patterns by household, household type, and neighborhood; effect of ethnicity, social class, and household structure (primarily life-cycle position) on consumption; changes in consumption patterns over time, especially as they reflect the expression of social class and economic status; urban foodways, and comparison of Boston's patterns of social expression of status, ethnicity, gender, and consumption with those of the inhabitants of other port cities.

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The revised research design follows, which is based on the archaeological resources actually recovered.

A. Environmental Reconstruction

1. Physical Environment

Environment is used here to refer to aspects of the natural world and its modifications with which people interact. In rural areas, interaction with the environment most often occurs during subsistence activities. In urban environments, where most agriculture and husbandry is limited to gardening and some stock raising, this interaction takes place in connection with other aspects of daily life. Maintaining a supply of potable water and controlling or avoiding environmental hazards and annoyances are among the interactions with the environment that occur most often in cities. Urban subsistence, in the form of foodways, is discussed to a limited extent under land use and spatial organization but primarily under "urban lifeways." Following a brief discussion of the environmental context of the project, two aspects of environment will be explored here: land use and health.

The end of the Pleistocene (ca. 10,000 BP) left Boston and its surrounding areas with a physical configuration very different from that of the present. During the Wisconsinan, the last of the Pleistocene glacial advances, a sheet of ice 1.5 km. thick covered mainland Massachusetts, Nantucket, Martha's Vineyard, and Long Island. Because water was locked in the ice sheets, Bloom (1983) estimates the sea level on the east coast of the United States to have been between -32 and -25 m. at 10,000 BP. Oldale (1986) suggests a sea-level rise along the south coast of New England (south of Boston) of about 3 m. per thousand years from about 8000 BP to about 2500 BP and about 1 m. per thousand years from then to the present.

The main consequences of the Pleistocene for European immigrants were to redefine the physiography of the landscape, to determine the biotic communities they encountered, and to produce the coastline and the maritime resources available to these immigrants. The climatic changes of the Holocene accompanied a succession of changes in the environment, which evolved from a treeless tundra to an open tundra parkland, to a boreal forest, and then to a mixed coniferous-deciduous forest.

Bloom (1983) characterizes the New England coast by its shallow bays and estuaries, with mainly muddy sediments; analysis and coring of several tidal salt marshes (which typify the contemporary coast) in the Boston area suggested to Bloom that they were a late Holocene occurrence, a transgression of the sea onto swampy lowlands. By the time the Europeans established themselves on the Boston Peninsula and surrounding area, the bays and estuaries that had been open water until ca. 3000 BP had become intertidal mud flats.

European presence had considerable effects on the environment within a few decades of settlement. Wood, in great demand as fuel and construction material, became increasingly scarce in the Boston Basin during the 1630s. Removal of forest cover combined with overgrazing stimulated erosion, leading to harbor siltation (Cronon 1983:25-26,141,149). Increasing population affected the land more directly, particularly in the dense cores, such as Boston's town center. Changing settlement patterns accommodated a growing number of people to a limited amount of space.

In addition to the changes in settlement pattern, there were a number of large-scale environmental modifications in the immediate neighborhood of the Central Artery/Tunnel Project corridor. In the vicinity of the site and the North End project areas (NE03), modifications included the damming of the Mill Pond (1640s); the cutting of Mill Creek

across the marshy peninsula (1640s); the filling of the Mill Pond with excavated soils from Beacon Hill (as well as "oyster shells, dry-dirt and the debris and street offal collected from all parts of the peninsula" [Shurtleff 1871:113]) between 1810 and 1830; the filling of Mill Creek in 1833 (Whitehill 1968:11-12,78-84; Shurtleff 1871:108-113); wharfing out along the waterfront of Town Cove (from the 1660s); construction of warehouses and other structures over most of the open space in the neighborhood (1850-1920); and the construction of the existing Central Artery (1950s). Smaller-scale environmental modifications also occurred, such as the filling of the marsh around Scottow's Dock at the Bostonian Hotel site and the gradual filling of the dock itself (Bradley et al. 1983).

These changes to the landscape modified the environment in the vicinity of the project area. Previous research on downtown Boston indicates that extensive filling on the scale indicated here will be visible in the nonarboreal pollen record (G. Kelso and Beaudry 1990:75,78).

2. Managing the Environment: Land Use

Land use as a term incorporates the notion of both interaction with the environment and manipulation of the spatial setting in which that interaction occurs. Environment has a limiting effect on land use, but it is through land use that people affect their environments, shaping both the physical and the built environment to suit their purposes.

Land use is more than the simple process of extracting produce, commodities and less tangible goods from labor in a specific portion of the physical environment. Land is closely bound to culture and is best examined through the culturally and personally biased perceptions of the people who used it, as well as of the people who described and recorded its use. As a process, land use moves in two directions: perceiving and using land changes both the land and the user. In that sense, perhaps, land may be said to use us.

Changing land use in New England urban waterfronts has often been examined using Stephen Pendery's model for urban process in Portsmouth, New Hampshire (Pendery 1977). This model delineates three phases of waterfront development. The first phase, immediately following settlement, was characterized by small farmsteads, whose owners gathered natural resources and practiced subsistence agriculture. In the second phase, with the rise of the city's maritime and merchant economy, the waterfront area was occupied by a dense mix of residences and artisans' shops. The third phase was characterized by urban decay, with a landscape of tenements owned by absentee slumlords. During the second phase, area residents were sufficiently prosperous to be able to afford to purchase and combine house lots that had grown smaller through partible inheritance. By the last phase, the economic situation of the neighborhood had deteriorated to the point where the only people able to afford to combine house lots were absentee landlords.

This model views urban land use in part as a balance between the tendency of house lots to become smaller through partible inheritance and the ability of people to recombine them into larger units for commercial, industrial, and residential purposes. Research on waterfront districts in Newburyport and Providence indicates that change in land use is a function of the specific historical circumstances of the neighborhood and the city (Faulkner et al. 1978; Rubertone and Gallagher 1981).

The Mill Pond site is in an area (Block NE03), thought to have been occupied by "a typical mix of merchants, shopkeepers, craftsmen, laborers, and mariners," during the eighteenth century and by primarily commercial structures during the nineteenth century (Elia and Seasholes 1989:138). This type of characterization, often attributed to eighteenth- and nineteenth-century urban areas, has been refined to acknowledge the importance of

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scale in such generalizations. Although most cities of the eighteenth century were an admixture of different occupational groups, at the neighborhood level or at the scale of individual streets or blocks, class distinctions could be pronounced (see for example Mrozowski 1987, 1991). One of the aims of the research at the Mill Pond site is to move beyond this type of generalized image of the early city and look more closely at the social and economic forces shaping contrasting uses of space in neighborhood composition.

We also expect changes in land use to be represented in the density, nature and distribution of archaeologically recovered features. In addition, recent research on environmental context in urban areas indicates that changes in land use on individual house lots may be closely reflected in the changes in yard flora, which are visible through pollen analysis (G. Kelso 1987:114-116; 1989; G. Kelso and Beaudry 1990:75,78).

3. Health

The topic of public health and quality of life has recently been identified as one to which historical archaeology can contribute (e.g., Beaudry n.d.; Bell 1987). Historical archaeologists have access to a body of data on utility construction and maintenance, including sanitation practices, that is unparalleled (Honerkamp and Council 1984). The repeated admonitions of municipal governments about proper construction and maintenance of sanitary features indicate that such rules were often ignored, and differences between the legislated ideal privy and the excavated features themselves are significant.

Disposal of solid wastes was always a problem in urban areas. Boston outlawed the disposal of refuse near the Town Dock, south of the project area, as early as 1634, and in 1652, the Selectmen forbade the disposal of butchering waste in the streets (Bridenbaugh 1955:85). Mill Creek, just southwest of the project area, was the only place authorized for the disposal of butchering waste, because of the swiftness of its waters (Whitehill 1968:12). In many cases, it may have proven easier simply to bury wastes. Night soil was allowed to accumulate in privy vaults. In 1701, the Boston Selectmen forbade the location of privies within 40 ft. of streets, houses, or wells unless the privies were 6 ft. deep and well constructed to avoid leakage (Bridenbaugh 1955:239). Privies were periodically cleaned (Roberts and Barrett 1984), a process that was no doubt facilitated by the development of mechanical cleaning devices in the late 1840s (Worthington 1990). Serious attention was paid to privy cleanliness in the aftermath of cholera epidemics in 1832 and 1839 (Rosenberg 1962:94,117).

Surface runoff was also a nuisance, and Boston took the lead in sewer construction, installing common "shores," or sewers, early in the eighteenth century (Bridenbaugh 1968:29). It was not until after the Civil War that reformers such as George Waring advocated increasing use of sewers to dispose of night soil (see Waring 1875).

The reasoning behind most of these regulations was to prevent disease, which was seen as resulting from "miasmas," or poor air quality, which could apparently be determined by smell. Prevention of disease was an important consideration for Boston, which was visited by at least 15 epidemics between 1693 and 1764 (Bridenbaugh 1955:240n, 399n), not to mention cholera in 1832 and 1839 (Rosenberg 1962:94,117). It was not until Boston's residents realized that most of these epidemics were the price of an active sea trade and instituted quarantine measures that the problem began to abate (Bridenbaugh 1955:241; Winslow 1974).

Since no privies dating to the periods of significance were found at the Mill Pond site, health issues are not addressed in detail in this report. However, the effect of the disposal of refuse in landfills and its possible on to health issues is considered.

B. Commerce

Boston was a port city with a central position and a superior harbor, which had become the center of a regional core in the Plantation Period and functioned as the political, social, and economic center of the region (Massachusetts Historical Commission 1982:39-40). During the seventeenth century, Boston emerged as a focal point of interregional and international trade and travel (Massachusetts Historical Commission 1982:53; McManis 1975:108-110), which drew its prosperity from its position in the trade network. Thus the growth of the waterfront is particularly important to understanding the growth of Boston. However, two other processes also affected the development of the waterfront. The first was the need to create more land for the growing population, especially throughout the nineteenth century but also in the eighteenth century. The second was the need to create suitable docking facilities for the changing shipping technology during the nineteenth century, specifically changes in the size and draft of ships, which in turn required changes in the size of the wharves and their relationships to deep water. Thus, wharf construction and land filling can be considered together as part of the infrastructure that supported Boston's growth as a regional core. Both infrastructure elements were sponsored by developers as a means of creating greater profits, among other reasons.

1. Wharves

To the extent that Boston was linked to the world system, it was linked by its docking facilities, which we call wharves. Two research topics associated with wharves are appropriate.

The first is the social and economic context of how and why wharves were built and how they reflected changing land-use strategies of the urban commercial establishment. These strategies were reflected in the timing of the wharf construction, the size and use of the wharf, and the reconstruction cycle.

An examination of the historic maps in Elia et al. (1989) and Elia and Seasholes (1989) suggested that the wharf on this property might have been part of a larger structure that straightened the east shore of Mill Pond. There are several unresolved questions about the public or private nature of the wharf and its function. Documentary research suggested that the wharf may have been more important earlier in Boston's history when ships may have entered Mill Pond. However, its importance as a shipping facility later in the Colonial period is in question.

The second topic is methods of wharf construction. "Construction manuals" on how to build wharves have not been discovered and may not have existed until the late nineteenth century. Thus, wharf construction technology may have developed as a regional folk or vernacular construction tradition. These techniques may also be updated versions of earlier methods of construction traced to Europe or Britain (e.g., Milne and Hobley 1981). On the other hand, a review of various reports of known wharves indicates that a relative uniformity in basic methods and forms exists along the Middle and North Atlantic coasts. One exception to this statement maybe more frequent use of stone fill for wharves in New England. Thus, archaeological information is necessary to identify construction techniques, their evolution, and regional variations.

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2. Landfill

Landfill occurs in two different situations, which sometimes blend into one another: creation of wharves and creation of new land for urban expansion. As discussed above, wharf creation was a common and frequent activity in Boston, and wharves from the seventeenth and eighteenth centuries, like those from later dates, contain fill from various sources. Due to its location on a geographically circumscribed peninsula, Boston's expansion was restricted. However, before the nineteenth century, the need for landfill to create new land was relatively limited compared with the nineteenth century and was restricted to reclaiming marsh land for residential and commercial use along the shoreline from Fort Hill to the North End. The best known of these situations is the filling of the marsh adjacent to the inlet at Mill Creek -- the site of Scottow's Dock in the seventeenth century -- and of the inlet itself by the end of the eighteenth century (Bradley et al. 1983). Since the city's growth rate slowed dramatically during the latter half of the eighteenth century, landfill operations, exclusive of wharf construction, did not become an important activity until the early nineteenth century. The first major land-creation episode was the filling of the Mill Pond, which was concurrent with a number of large wharf-construction projects, including that of India Wharf.

Two research topics associated with landfills are parallel to those discussed under wharves. The first is the social and economic context of landfill activities; the second is the nature of the landfill itself. The social and economic context of landfills includes an investigation of how and why they were constructed and what were the forces important in their creation. Data for addressing this topic come from historic records.

Archaeological studies of landfill have been undertaken primarily in New York (Geismar 1983, 1987; Huey 1984; Rockman et al. 1983), but a few have occurred in New England as well (Beaudry and Blosser 1981; Bradley et al. 1983; Ingersoll 1971). Archaeological study of landfill can provide information on a number of related topics: the sequence of land uses in wharf areas; the source of the fill; the relation between landfills and public health; the actual content of the fill versus that stipulated in regulations; and what the contents of the landfill reveal about the city as a whole and about the city as a community of consumers. The first of these topics is examined through the use of documents, artifact counts, artifact diversity, and palynology. Simple artifact counts have proven successful in identifying the type of fills used, that is, clean versus trash-laden (Geismar 1987). However, more detailed studies of the diversity of the artifacts may aid in identifying the origin and the nature of the fills.

The kinds of artifacts in the fill are used to examine what the fills can reveal about the activities in the city and the general consumption patterns of its inhabitants. The ability to address this question depends on the kind of material recovered. Comparisons with other fill collections from Boston (Beaudry and Blosser 1981; Bradley et al. 1983; Elia et al. 1989; Alterman and Affleck 1993) will help to develop an overall picture of the kinds of fill used and their contents in different time periods.

C. Spatial Organization

1. The Neighborhood

Although the neighborhood is often an ambiguous concept and difficult to define, neighborhoods are universally characterized by a discrete physical territory, a geographical and physical component, and a population-based, social component (Keller 1968:87-92). Neighborhoods of eighteenth-century New York have been reconstructed to some degree using maps (Rothschild 1987; 1990) and economic and social characteristics of urban areas can be recovered to a large extent through the use of other documents (Cressey 1983; Wall 1987).

American historians, especially in research on Philadelphia and Boston (most notably Warner 1968:50; 1972:82-83), have stated that individuals of all classes lived in heterogeneous communities within the cities of the Colonial and Early Republic periods. In other words, neighborhoods that segregated individuals by class did not exist. This position is correct in the sense that residential neighborhoods such as were created by the industrialization of America and England did not exist in the cities of the Colonial and Early Republic periods. However, on another level, this position is almost certainly wrong (Cheek and McCarthy 1990).

Most studies of human settlement patterns document that when given the chance people tend to settle with relatives and with families similar to themselves in their "station in life." Historical geographers have evidence from medieval cities in England of such patterns of association and it is difficult to believe that this pattern was abandoned with the development of American Colonial cities. In fact, recent research in Philadelphia suggests that by 1860 there was a high degree of homogeneity at the scale of the street face (Blumin 1989:163-179); that this degree of homogeneity was probably in evidence by 1850 (Pack 1984); and that a substantial degree of homogeneity was also found in the immediately post-Colonial city as evidenced in the 1798 Federal Direct Tax (Blumin 1989:41-51). The distribution of the various classes in the core, semiperiphery, and periphery of Philadelphia in 1798 is distinctively nonrandom, with over 50% of the residents in the core having nonmanual occupations and 51% and 71% of the residents of the semiperiphery and periphery, respectively, having manual occupations (Blumin 1989:47). However, behavioral and social separation was even greater than these figures indicate, since, as in English cities, classes were segregated by location within a block, with the lower classes located on the interiors of the blocks and the well-to-do and "middling sorts" mostly on the street faces. This trend is found in Boston as well. Recent, if partial, data have been gathered on neighborhoods in late eighteenth-century Boston that indicates that by 1789 artisans in general or artisans with the same occupations clustered in some streets (Johnson 1994).

Such segregation by class has implications for the study of consumer behavior in urban contexts (Cheek and McCarthy 1990). The utility of the household for the study of consumer behavior is dependent on the correlation of a historic household with specific archaeological deposits. This is often difficult because of the mobility of the working-class population and the lack of assurance that the household will be representative of its class or ethnic group (Cheek and McCarthy 1990). In urban sites that have few sealed features, this is a greater problem. Through the detailed examination of site strata by a combination of palynological, archaeobotanical and soils analysis, it should be possible to determine the character of these deposits, the rates at which they were formed and their composition (i.e., redeposited fill, rapidly accumulated fill, or slowly accumulating cultural surface). Through this level of analysis, individual strata can often be associated with separate households (G. Kelso, et al. 1987). If neighborhoods can be documented in Boston in the Colonial and Early Republic periods at the scale of the street face and block, then artifact assemblages from other-than-sealed features may be used to examine differences among household types, as has been done for nineteenth-century urban deposits (Cheek and Seifert 1991).

2. The Urban House Lot

The house lot is the basic unit of spatial analysis for urban historic-archaeological excavations (Beaudry 1986). It is also the scale at which the household, a basic unit of archaeological and historical analysis, becomes visible (Deetz 1982; Beaudry 1984a). The form of occupancy, whether by owners, tenants or both, will affect the number and nature of backyard activities and structural features. Title research, wills, and probate records indicate that a variety of classes and ethnic groups lived on the Mill Pond site, often at the same time.

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Relatively little of the area of the house lot was exposed, so that spatial patterning within the house lot as such was not addressed. However, the relationship of the house lot to the wharf and the possibility of activity areas in the exposed areas were explored.

The activity-area concept has been used in analysis of historic sites, based on the premise that activities may be defined through examination of the nature and distribution of the artifacts recovered from the area where the activity occurred. The predominance of secondary and tertiary refuse in urban contexts has forced historic archaeologists to address the nature of refuse disposal and its effects on the archaeological record. In fact, historic archaeologists have encountered serious difficulties in attempting to filter out evidence of other activities from refuse. Despite such problems, archaeologists have tended to interpret urban yards and features as though their primary function was to serve as receptacles for refuse and convenient places to deposit layer upon layer of "fill" interspersed with sheet refuse, and they have too often considered their work complete when they have mined the features and counted and interpreted the artifacts (Beaudry 1986:39). Often, studies of refuse disposal in space have been offered as models of spatial utilization. The Brunswick pattern examines the locations of refuse disposal within the framework of architecturally defined space (South 1977:47-48). However, while the Brunswick pattern informs us about spatial aspects of discard, as it was intended to do, it tells us nothing about the use of space beyond that single activity.

The focus on land use at the lot level will be on the use of space by its past occupants, but will be restricted primarily to the relationship between the wharf and the adjacent areas of the lot. Particular attention is devoted to examining changes in spatial structure that may be related to changes in the wharf area. Differences in spatial patterning are addressed in the light of differences in land use, ownership, and occupancy patterns over time.

D. Urban Lifeways

This research focus is concerned with consumer behavior of different categories of persons and households. These categories are defined by ethnicity, social class, age, and gender. We stress that none of these domains of culture can stand alone as a sole motivation for any behavior and activity. A laborer cannot be seen as only a laborer; he may also be a free, middle-aged African-American male, and all of these aspects of identity will affect his material life.

1. Ethnicity

Historical archaeologists have approached ethnicity in broad terms, in that they have most often used it to frame research questions concerning groups who came from different continents; African Americans and Asian Americans are the groups most frequently studied from the viewpoint of ethnicity (see, for example, the essays in Schuyler 1980). Areas of ethnic behavior on which studies have concentrated include the role of ceramics in the foodways of different groups (Otto 1977; Baker 1980:33-34), mortuary customs (Handler and Lange 1978), and in some cases simple identification (Ferguson 1980).

Most often, archaeological discussions of ethnicity are predicated on documentary evidence of the ethnic membership of site occupants, although recent investigation in oral history is also useful (Schuyler 1974). The usual pattern is that documentary evidence is used to identify ethnic differences, which are then sought in the archaeological record. African-American and Asian-American archaeologies have advanced beyond the search for

ethnic markers and patterns and have arrived at the point where they explain ethnic differences; however, less thoroughly researched groups have not yet been treated in sufficient depth.

Acculturation has also been studied by archaeologists, but it remains a problematic area. Attempts have been made to quantify acculturation by comparing the ratio of foreign products to dominant products on the assumption that acculturation will result in consumption patterns similar to those of domestic populations (see Praetzelis et al. 1987 for a brief discussion and critique of this method). It cannot be assumed that social changes such as acculturation will be directly reflected in material ways (Kelly and Kelly 1980:135-136; Staski 1987:55).

The use of ethnic symbols, including objects, has been approached by both anthropologists and historical archaeologists (Kelly and Kelly 1980:134; De Cunzio 1983:384-385; Cook 1989:221-222). A wide variety of material may come to have symbolic connotations through use in social actions and interactions by which people are linked in communities (Cook 1992). The approach that we will take to ethnicity will emphasize this active component: ethnicity is a range of actions that integrate the individual with the collective in the construction of communities based on the perception of common origins, history, and interests (M. Nash 1989:5-6). Communities are constructed and maintained by people through action, rather than simply being static categories into which people passively "fall." Some of the construction and maintenance of community that constitutes ethnicity involves the manipulation, often consciously, of a wide range of material culture.

Perhaps the clearest discussion of the manipulation of selected portions of material culture by an American ethnic group within a dominant culture is of the working-class West End Italians of Boston in the twentieth century (Gans 1962). This study makes clear that it is the *emphasis* on different kinds of mainstream artifacts that differentiates one group from another. In archaeological terms, this translates into an examination of the proportions of artifact classes in an assemblage. Different ethnic groups will be, in general, using the same kinds of artifacts but combining them in different ways and in different proportions to establish their distinct identity (see Cheek and Friedlander 1990; Cheek et al. 1991).

Thus, historical documentation of the identification of the ethnicity of the site's occupants is important. If the ethnicity is identified, the way that the occupants manipulated their material culture and the way they selected their material culture from the variety that was available to them, given their position within the society, may be identifiable. With these data, we can better understand how ethnicity is being expressed and how people were manipulating material items to make their place in the world. However, this approach is most productive when collections from ethnic households are compared to other households from the local area that are part of the mainstream culture or a different ethnic group.

The present level of knowledge about the day-to-day lives of Boston's ethnic groups and the combination of different ethnic groups on one site permits us to ask only limited research questions. Some pertinent examples include the following: What strategies did Boston's ethnic groups utilize in the construction of their communities? To what extent was material culture manipulated (used, displayed, "symbolled", etc.) in the construction of different ethnic communities? And, finally, how did material culture, as symbol and artifact, figure in interactions between groups?

Only two ethnic groups seem to have lived on the Mill Pond site, English families and African slaves. African Americans were present in Boston from at least 1638 as slaves and later as a free population as well (Higginbotham 1978:61; Pierson 1988). In fact, their numbers may have been underestimated in eighteenth-century censuses (G.

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Nash 1979:445, n25). Although it was originally considered possible that some New England Indians may have lived on the site when it was owned by the Society for the Propagation of the Gospel to the Indians in New England between 1672 and 1709, no evidence of their presence was found in the documents.

Archaeologically, specific material markers of ethnicity are rare. The historic record will be searched for the presence and nature of specific artifact classes through which ethnic community membership and identity were expressed. If such items are found archaeologically, they will be described and interpreted. In addition, assemblages will be examined for evidence that may not appear clearly in the documentary record. In the case of European ethnicity, the presence (or absence) of ceramics or other items traceable to the countries of origin of site occupants will be interpreted, as will quantitative and qualitative comparisons between the artifact assemblages of different ethnic groups. In the case of African Americans, additional evidence will be sought through the identification of particular items showing African form and/or decoration. Differences in faunal assemblages between sites will be interpreted where appropriate in the light of information on ethnic foodways. In addition, the recovered environmental and land-use data, as well as spatial patterns and feature-construction methods, will be closely examined and compared. Contemporary documentation, including travel accounts, will be consulted for mention of such patterning.

Considerable evidence exists for ethnic differences among European populations (Carrillo 1977), as well as groups from within England (Fischer 1989). Fischer (1989) discusses the differences in foodways between the regional cultural groups that occupied different areas of North America, differences that should be visible, at least during the earliest times, in artifacts, such as ceramics, that reflect foodways. For example, modern studies of traditional cuisine in England have identified "three distinct culinary regimes of food preparation, marked by a special taste for frying in the south and west, for boiling in the north, and for baking in East Anglia" (Fischer 1989:138). Although all methods exist in each region, even in the twentieth century, British merchants carry different inventories to different regions.

The assemblage of food-preparation vessels from the site, which was occupied by descendants of people with an East Anglian culture, will be compared where possible with collections from regions settled by immigrants from the south and west of England (the Chesapeake) and the north of England (Pennsylvania). Documentary sources also suggest that the diet of New Englanders remained conservative and did not exploit the abundant new foods found in the New World as much as did the diets of other immigrant groups (Fischer 1989:134-137). Kinds and frequencies of species exploited in different North American regions are also compared to determine whether these cultural differences in foodways were transferred to the New World in a manner recoverable by archaeology.

2. Class and Status

With respect to social class, as Raymond Williams points out (1983:66), the use of "socioeconomic groups" as a means of grouping people for study is a way of uniting several different models of "class" and the notion of "status." The problem is, however, that three senses of "class" have been developed, one, referring to generalized groupings of people; another, to relative social positioning and social distinction (rank); and, the third, to social formations arising from "fundamental economic relationships" such as a common relation to the means of production (Williams 1983:65-69). Status developed as a concept in modern sociology, "where it is frequently offered as a more precise and measurable term, in preference to class" (Williams 1983:299). Williams sees the concept of status as a way to avoid analyzing social ranking while also avoiding the complications of social groupings and formations.

The study of social class and status offers the opportunity to investigate important research questions. We hope to avoid the tendency in past research to focus exclusively on unilinear, quantitative measures of status in lieu of exploring what class and status are and how they function. A common assumption in much research has been that material culture is a passive reflection of status (see Spencer-Wood 1987). Rather, we hope to approach material culture as an active component in the expression of class and status.

We will address three principal research questions:

- 1) To what extent are social class and economic status expressed through material culture in seventeenth- and eighteenth-century Boston?
- 2) What are the specific meanings of particular items in terms of class and status?
- 3) How are these meanings interrelated with the meanings of other items, and with other expressions, such as those of ethnicity and gender?

In examining the relationship between documented wealth and excavated material culture from three seventeenth-century, rural Massachusetts sites, Mary Beaudry found that

in seventeenth-century Massachusetts, men often defined their social position by means other than conspicuous display of luxury goods or fine housing. . . . Prestige could be attained by actions and by accumulations of property that may not be reflected in the archaeological household (Beaudry 1984b:59).

In essence, the Puritan ethic may have militated against status display through material culture and may in fact have served to mask the expression of status differences. In addition, Beaudry hypothesized that "in the city, social differentiation took a more elaborate form of material expression, and fashion was a far more crucial distinguishing factor than it was in the countryside" (Beaudry 1984b:59). Beaudry's research emphasizes the importance of going beyond artifactual evidence to examine class and status through other types of material expression, such as architecture or evidence of capital investment, which is more amenable to research in the documentary record.

Several interesting potential research questions emerge from Beaudry's research. First, are there considerable differences in the material expressions of status between the city and the countryside? In addition, does the material expression of class and economic differences in Boston change through the seventeenth and eighteenth centuries

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with the decline in Puritan influence? To what extent does material expression of class differences vary with economic status? Does it do so directly, or are less wealthy households able or inclined to resort more to status display than wealthier households? To what extent does status display vary with ethnicity and gender?

The investigation of class and status will require the use of "multiple lines of evidence" (Garrow 1987), including documentary research and analysis of recovered artifactual and foodways data. Documentary evidence will be used to place material culture within its past social and cultural frameworks. The documentary record is expected to contain considerable evidence on status expression through material culture in Boston (Stone 1970), and considerable information is expected from secondary sources on comparable cities (e.g., Brown 1973). Land evidence and tax records will be used to assess the overall wealth and occupational status of owner-occupants and tenant-occupants, where possible, of the specific properties and neighborhoods investigated.

Archaeological evidence will be used to complement documentary models to tie hypothetical or possible modes of status expression to concrete situations. Analysis of recovered materials will involve a simple quantitative assessment of collections in the light of documentary models. No specific quantitative measures exist for the period of time under consideration until the transition from the Colonial to the Early Republic period. After this period, Miller's ceramic price indices can be used (Miller 1980, 1991).

Intersite comparisons are expected to be a useful tool in approaching economic differences. The categories of material culture and their attributes that will be examined include ceramics (ware, decoration, and form); glass tablewares (decoration and form); and faunal assemblages (diversity of species, relative cost of parts represented). Since sealed single-household features, such as discrete trash pits and privy vaults, were not present, sheet middens were used and, where possible, were tied to individual households or household types on the basis of the date of the deposits and their relationship to the documentary record. We may also attempt to match multiple-household deposits, such as fill layers and some surfaces, with documentary data gathered at the neighborhood level.

3. Gender

Gender is an issue of increasing importance in historic archaeology. Because of the complexity of the urban archaeological record, however, gender is not easily approachable on urban sites through excavated evidence alone (Cook 1991). We expect that background research, as discussed above, will allow reconstruction of household composition on each site through time. One element of household composition that will be particularly important will be the gender of household members. As gender is addressed as a factor in household composition, it is expected that particular gender-related social and material strategies will emerge. These strategies may then be investigated in the archaeological record.

We expect that the use of the Potomac Typological System (POTS) for cataloguing ceramics, and a general functional (i.e., task-oriented) approach to the analysis of recovered materials (see above) will assist in discriminating various gender-based activities as they occur in the archaeological record. This in turn assists in identifying how "gender-based organizing principles might be seen in material culture" (Yentsch 1991:144-145).

We have been able to bring out issues relating to gender in the report through narrative discussions of the histories of particular households (see Gero 1991). Among the issues that arose in the course of research were family and family structure and widowhood.

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III. METHODS

A. Background and Historical Research

Historical information was sought in three research domains: the occupants of the sites; the social and economic context; and the composition of the neighborhoods in which the sites are found. Data on the occupants of the sites included information on owners, resident or not, as well as tenants, where possible. To obtain these data, records such as deeds, probate records, censuses, tax records, and city directories were examined.

Documentary research is vitally important to the CA/T archaeology. The approach we have chosen focuses research efforts on identifying both the unique characteristics of the residents and owners of the project areas and the general social and historic processes within which these individuals are embedded. In other words, we are focusing on social history and social science concerns as well as how unique individuals expressed their participation in the community. On the other hand, we are not ignoring the major events in Boston's history that shaped the social and historical processes. Such events include catastrophes, such as the fires and epidemics (e.g., Winslow 1974; Pencak 1979) that repeatedly ravaged Boston and had intense but localized effects. Events with more general effects include the economic recession in the 1740s and 1750s, caused partially by the Spanish-English War, which has been implicated in the cessation of population growth (Price 1974:143-144). In addition to providing background information that allows the archaeological data to be integrated with broader social and historical contexts, documentary research provides considerable "foreground" by identifying specific research questions that may be addressed through archaeological evidence.

This section summarizes the utility of some general classes of documentation, and specific documents or sets of records, and indicates their intended use in the project.

- ▶Land and Probate Records: A wide variety of land evidence, including deeds, probate and conveyancers' records, and reconstructions of lot ownership at particular times (the Clough and Thwing records) were utilized. These records provide some evidence about commerce and urban lifeways on some sites, but their particular value is in the areas of spatial organization and site-specific historical information. The reconstructions of property ownership also provide the basis for neighborhood analyses for different periods.
- ▶Residence and Tax Records: This category includes city directories and tax records, such as the 1771 Provincial Tax and the 1798 Federal Direct Tax. These records provide information on commerce, spatial organization, urban lifeways, and site-specific occupation and land uses, as well as valuable information at the neighborhood scale.
- ▶Demographic Sources: These records, which include censuses and vital records, were examined to generate profiles of households within the project area, as well as providing information on the neighborhood scale. However, genealogical sources and other public documents were more useful for their information on family structure, interconnection, and history for the majority of the households studied.
- ▶Government Documents: A wide range of official documents was utilized, including city and colony records, Selectman's records, and court records.

►Secondary Sources: Research into secondary sources provided additional information on all of the research topics investigated.

►Cartographic Sources: Maps provided information on spatial organization and site-specific topics.

These document classes were combined during analysis to provide information on the specific research topics. Specific information on the history of land ownership will be gathered through the deed research and the construction of title chains for all three sites. The primary focus of the title chains will be from the 1630s to the 1830s.

Reconstruction of the class (socioeconomic status), ethnicity, and composition of the households in the neighborhood was undertaken for at least two points in time. For the Mill Pond sites, the periods of interest are the Plantation, Colonial and Early Republic periods, and the reconstruction includes, but is not limited to, the 1687 tax list (Record Commissioners 1:91-133) and the Provincial Tax of 1771 (Massachusetts Archives 132:92-147). The gap between these two sources is filled by an examination of interaction between neighbors as appears in the site-specific documentary record.

Three characteristics of the household have been proven to be important factors in general and for archaeology, in particular, in explaining consumer behavior. These are class (Spencer-Wood 1987), household composition (LeeDecker et al. 1987; Schiffer et al. 1981; Cheek and Seifert 1991), and ethnicity (Cheek and Friedlander 1990). Neighborhood reconstruction was designed to recover information on these variables, which define household types from the historical record, to the extent possible.

The focus of the reconstructions was on the block that contained the site and the opposite street faces, the houses facing each other across the streets defining the blocks, and lots on the remaining corner of the street intersections. This focus reflects the historical fact that households on opposite sides of the street from each other tend to be similar and that households at corners also tend to be similar (Cressey and Stephens 1982:53).

Repositories visited during the background and historic research included the following:

Boston City Hall, Boston, MA
Boston Public Library, Boston, MA
The Bostonian Society, Boston, MA
The Boston Athenaeum, Boston, MA
Harvard University Libraries, Cambridge, MA
The Library of Congress, Washington, DC
The Massachusetts Archives, Boston, MA
The Massachusetts Historical Society, Boston, MA
Mugar Memorial Library, Boston University, Boston, MA
The New England Historical Genealogical Society, Boston, MA
The Paul Revere Memorial Association, Boston, MA
Suffolk County Registry of Deeds, Boston, MA
Suffolk County Registry of Probate, Boston, MA

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B. Field Methods

1. Excavations

The Phase III data-recovery excavation at site BOS-HA-14 was conducted from June 14, 1993, to July 28, 1993, by an eight-person team. Field investigations included the manual excavation of 21 units, test trenching, and mechanical stripping. The area recommended for Phase III excavation was 4,200 sq. ft. (390 sq. m.).

The project area was defined as the Mill Pond site (BOS-HA-14), the boundaries of which were approximately 55 ft. north-south by 100 ft. east-west (16.8 by 30.5 m.). The site was in an asphalt-surfaced parking lot located beneath the elevated Central Artery in the North End section of Boston (Fig. III-1). The extant cultural features offered little insight into either the location of the Mill Pond, buildings, yards, and streets that characterized the historic landscape or the cultural processes that contributed to the development of the city. The site was bounded on the north by Cross Street and on the west and south by Endicott Street (Figure III-2). Directly to the east of the site were the Freedom Trail (historic Salem/Back Street) and an abandoned electrical service building. From the 1989 Phase II site examination, the areas to be sampled were identified, marked with spray paint, then stripped with a back hoe. The stripping of the asphalt included the removal of the modern bedding materials. Asphalt was removed from approximately 5,400 sq. ft. (502 sq m.). Significant deposits were limited to the area contained within the confines of modern utility trenches and disturbance from Central Artery bents (supports).

Field investigations were designed to recover appropriate samples of data to address the research questions developed for the site and outlined in the permit application. Expected units of stratification included mill pond fill, land fill, occupation surfaces, interfaces, sheet refuse, middens, and various features, such as wharfing, refuse pits, privies, wells, post holes, planting beds, drains, building foundations and retaining walls. Interfaces were included in this list because they preserve evidence of an event. For example, an interface of a post hole with the surrounding matrix/matrices represents the act of digging the hole rather than the fill, which relates to a different action.

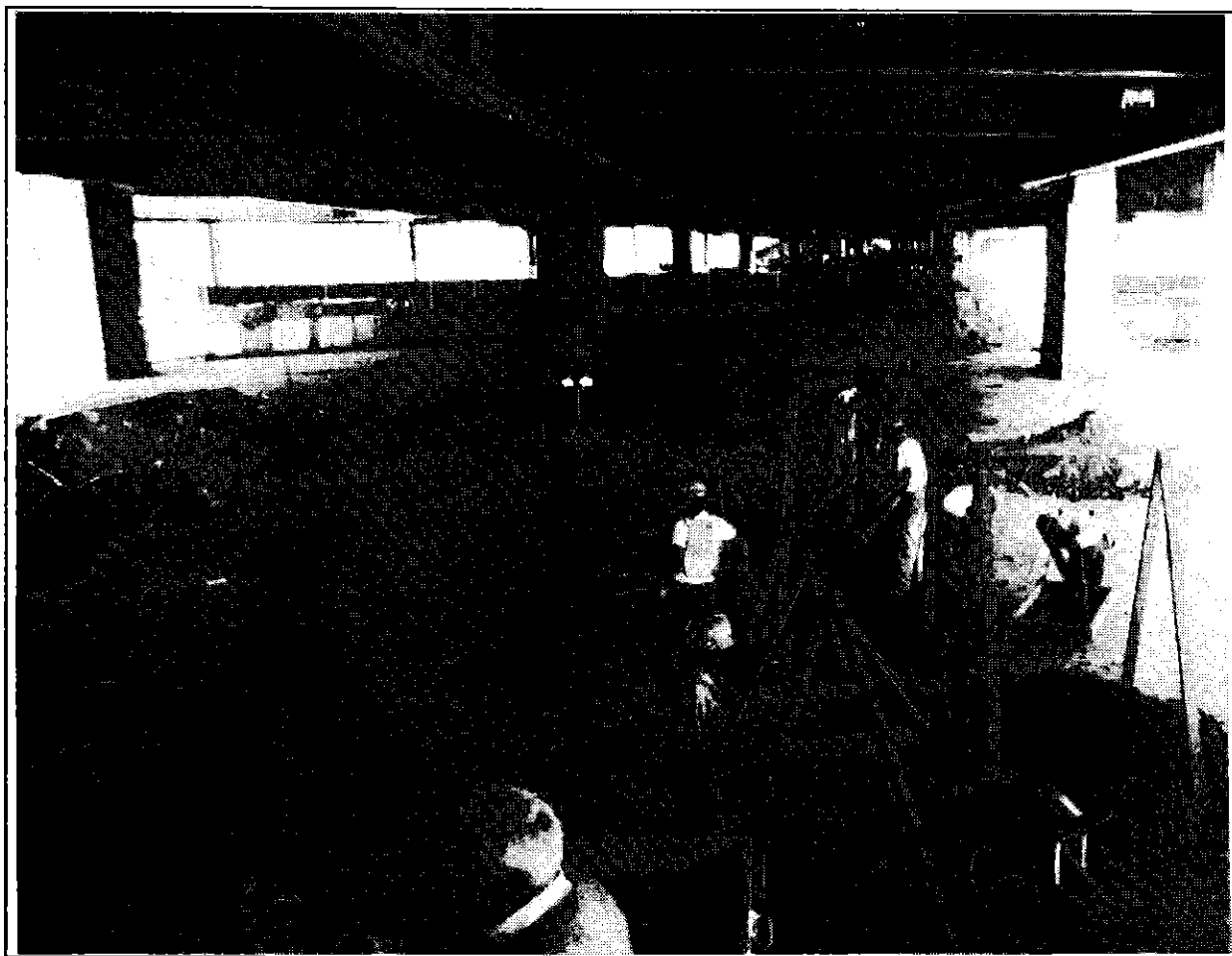


Figure III-1 - Overview of Mill Pond site (BOS-HA-14), facing west (site grid orientation).

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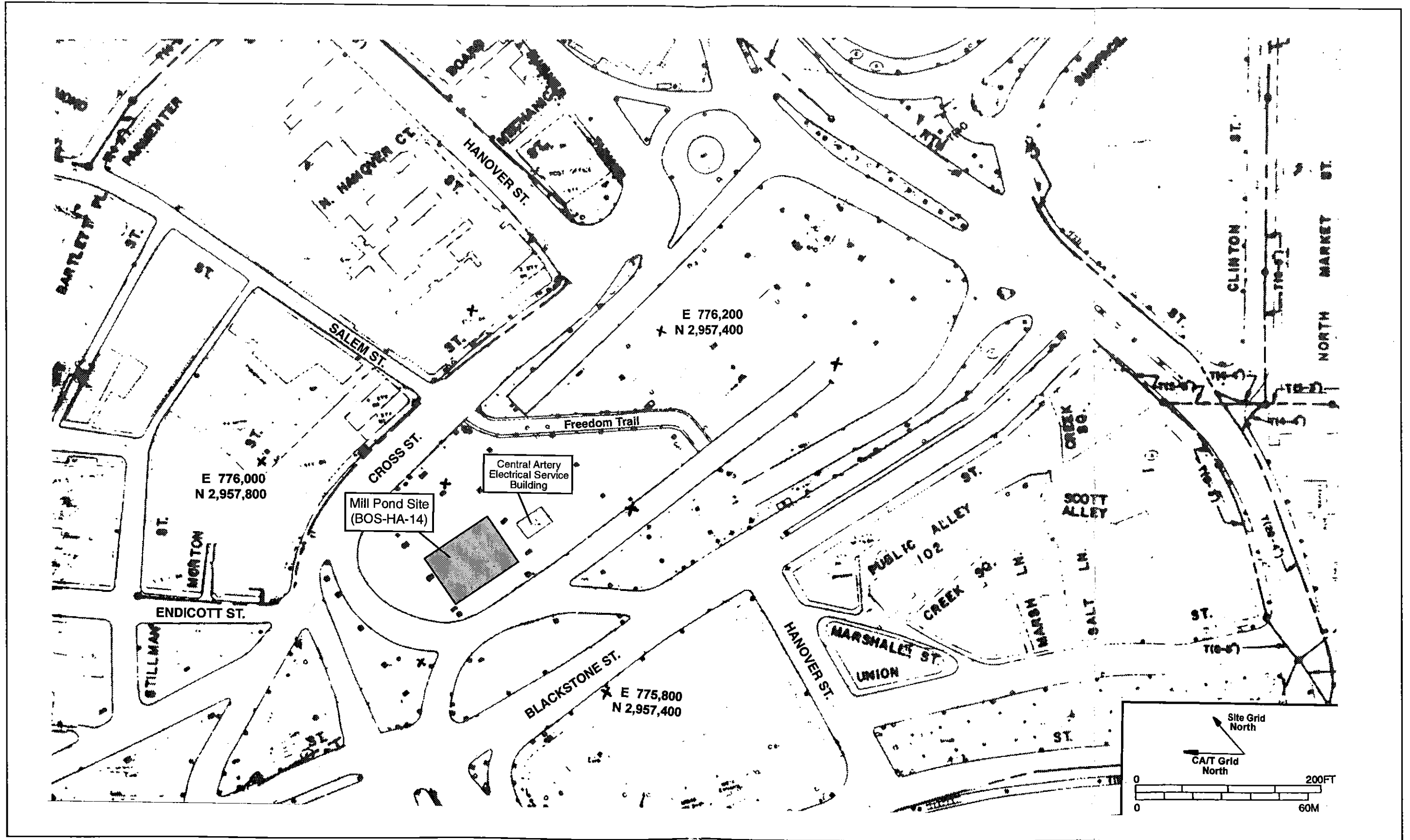


Figure III-2 - Mill Pond (BOS-HA-14), project location. Reference coordinates are given in CA/T grid feet, i.e., Massachusetts Plane Coordinate System, Mainland Zone (NAD 1983).

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The horizontal grid used during the 1989 site examination was reestablished as accurately as possible after checking original field notes and drawings, while a new horizontal datum was tied into several local landmarks. Whenever possible, mechanical trenches and excavation units were positioned along the grid; however, this was not possible in all instances. A vertical datum and transit station were set up and tied into the Central Artery Tunnel Project's vertical control (Construction Survey Control Point 31), thus providing horizontal and vertical control. The transit was used to record all field elevations. Field measurements were taken in the English measurement system, using engineer's scale (feet and tenths). As appropriate, both engineer's and metric scales were placed in photographs to facilitate metric conversions. Site grid north was established at 48 degrees east of CA/T grid north, the latter being the Massachusetts Plane Coordinate System, Mainland Zone (NAD 83). Thus the site grid north-south line extends perpendicular to the Interstate 93 corridor which is north and south bound. All orientations stated in this report are in terms of the site grid.

In general, the site excavation used two techniques, manual excavation and mechanical stripping or trenching. Placement of excavation units was guided by examination of the stratigraphy exposed in the trenches and by field observations. Before the commencement of the hand excavations, two test trenches were mechanically excavated to access the archaeological resource. The trenches were perpendicular to one another, effectively dividing the site into four quarters. One of the trenches was placed at right angles to the edges of the shore (oriented approximately east-west) to allow for the identification of both the original shoreline and the edges of the wharf. The second trench formed a cross with the first trench (north-south) and was intended to locate the side of the wharf. The placement of hand-excavated units was guided by the results of the trenching. In addition, the trenches provided an indication of the total depth of the cultural deposits. It was quickly determined that significant deposits were over 5 ft. (1.52 m.) below the ground surface; consequently, trenches were excavated to a depth of 4 ft. (1.22 m.), examined, and recorded. After the top 4 ft. (1.22 m.) was recorded, modern fill and any nonsignificant nineteenth-through-twentieth-century deposits were removed. This procedure allowed the trench to be stepped and excavation to continue to the base of the cultural deposits. Documentation included the recording of one profile of the trench. All identified units of stratification were given a Harris matrix designation (see below) and described. The description of each unit of stratification included a type description and tentative associations. If the unit of stratification was a soil matrix, it was recorded using standard soil texture classes and Munsell color designations (Munsell 1990). The units of stratification exposed in the excavation units and trenches were tagged with a marker bearing the Harris designation. This allowed for easy identification in the field (Fig. III-3).

The basic excavation unit was a 5-by-5-ft. (1.5-by-1.5-m.) unit. The placement of the units was guided by field observations based on the archaeological profiles exposed by the trenching. In accordance with the permit application, four areas within the site were to be excavated. The four areas were intended to test the Early Republic period deposits that overlay the Mill Pond fill; the edge of the Colonial lot; the Mill Pond fill; and the wharf itself. As will be shown in the discussion of results (section V), the increased exposure afforded by the data-recovery test-trench investigations and asphalt removal dictated that the initial strategy be modified. Upon examination of the test-trench profiles and delineation of nineteenth-through-twentieth-century disturbance, it was determined that the four-area approach could not successfully be applied to the site. Consequently, the proposed placement of excavation units was adjusted to include the placement of some individual units to maximize recovery from targeted units of stratification and to facilitate site interpretation. Whenever possible, excavation units were positioned with one wall abutting a test trench. The benefit of this excavation strategy was twofold: first, the stratigraphic sequence for trenches and units was easily integrated; and, second, investigation of the deposits of interest could be maximized while exposure of nineteenth-through-twentieth-century deposits could be minimized. As will be shown

(section V), the large profiles and noncontiguous placement of some excavation units had implications for the overall stratigraphic analysis of the site, both simplifying and complicating it.

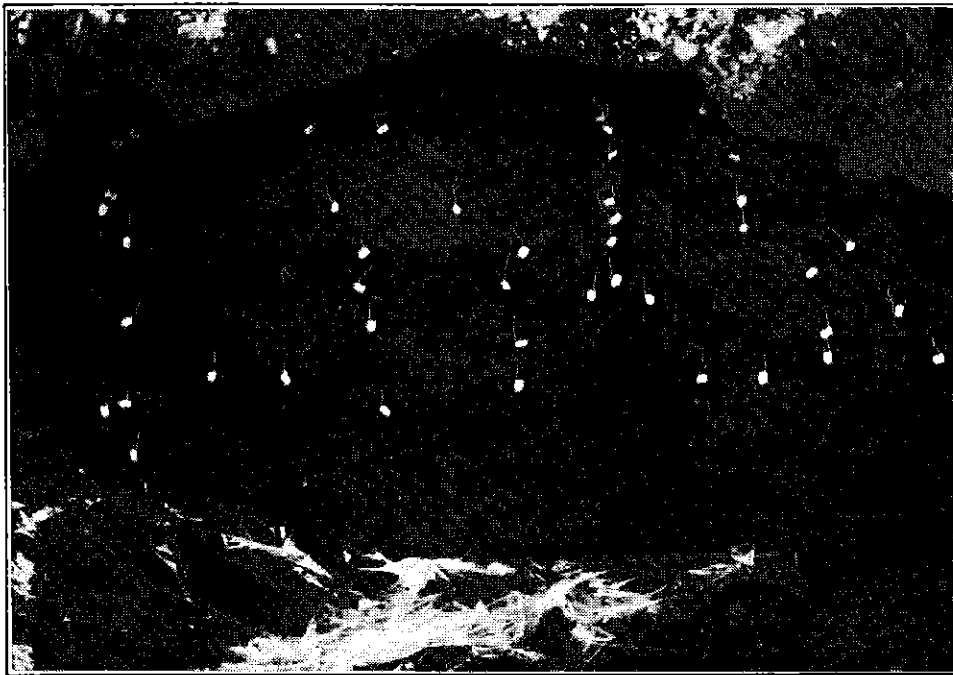


Figure III-3 - Trench 1, north profile, west end, showing intact stratum.

Standard excavation and recording procedures, as presented in the permit application, were followed during the field work (Figs. III-1, III-4, and III-5). After the modern fill had been mechanically removed, units were excavated by trowel, shovel, and, as appropriate, pick. The basic collection unit was the contextual unit, following the practice of the previous excavations. Since contextual units were excavated by excavation unit to provide horizontal control of artifacts, contextual-unit data were recorded on a standard excavation-unit record form. Information was recorded on the horizontal and vertical boundaries of contextual units, relationships between overlying and underlying strata, and artifact content. Soil matrix was described using standard soil texture classes and Munsell color designations (Munsell 1990). Plan maps and elevations were recorded for each contextual unit.

All hand-excavated soil matrix was screened through 0.02-ft. (0.6-cm.) hardware cloth screens to insure the uniform recovery of cultural remains. Recovered materials were separated by type (artifact, faunal, shell, soil, charcoal, pollen, and vegetal remains) and placed into polyethylene specimen bags marked with the appropriate provenience information. Each bag was assigned a sequential number, which was entered into a field specimen log. Field-specimen bags were transported to the Timelines archaeological laboratory at the end of each day.

Constant-volume 30-cubic-in. (500-ml.) soil samples were collected from selected matrices within the excavated units and within features. Selected soil samples were processed by flotation and the recovered floral specimens were analyzed by Dr. Lawrence Kaplan of the University of Massachusetts, Boston. Pollen samples, using a continuous-profile method, were taken at locations determined by the pollen specialist, Dr. Gerald Kelso. Additional samples were taken from within features. Faunal materials were collected during unit excavation and bagged separately for cleaning and processing by faunal analyst Dr. Joanne Bowen.



Figure III-4 - Excavation Unit 3, showing excavation of drain, Phase I, feature 4.

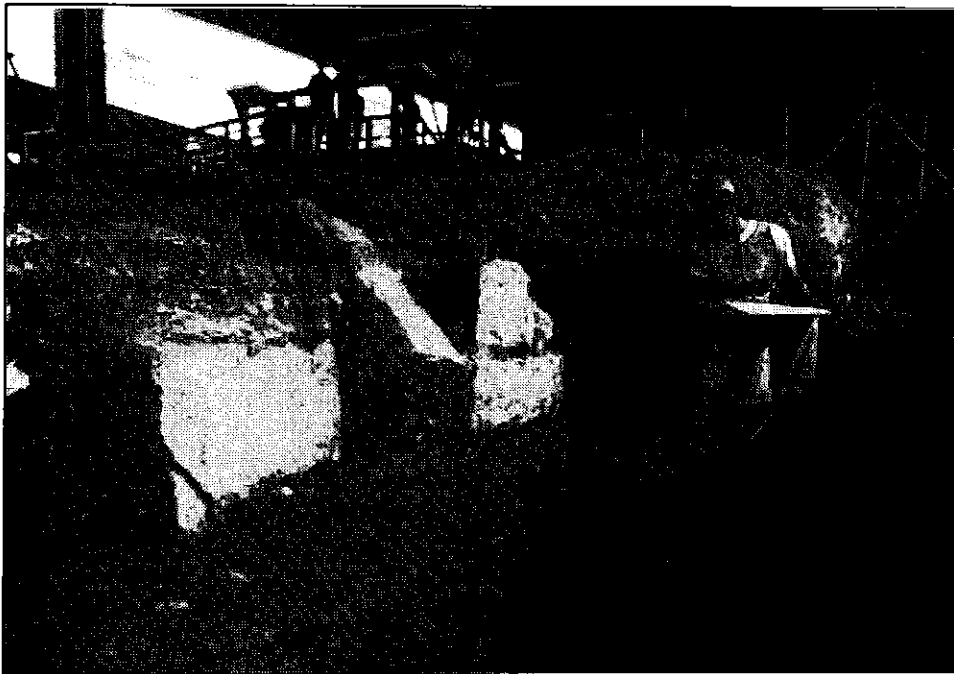


Figure III-5 - Excavation Unit 3, showing recording of drain, Phase I, feature 4.

wharf timbers were exposed, recorded, drawn, photographed and sampled. Cross-section samples were taken from several wharf timbers and submitted for wood and dendrochronology analysis at the Lamont-Doherty Earth Observatory of Columbia University.

Excavation was by cultural or natural stratigraphic units, with the following exceptions. In landfill areas with stratigraphic deposits deeper than 1 ft. (30 cm.), the stratigraphic deposit was divided into 1-ft. (30-cm.) arbitrary levels. In non-fill deposits, arbitrary levels were assigned when deposits reached 0.5 ft. (15 cm.) in thickness. The differential treatment of the various types of deposits reflected the amount of information that can be gained from the deposits. Feature-excavation methods varied by size of the feature. Small- and medium-sized features were sectioned and soil matrix removed separately.

The basic component of stratigraphic analysis was the unit of stratification. Units of stratification include soil matrices, surfaces, and features. A stratigraphic unit could extend over several excavation units or trenches and be composed of several contextual units. Whenever possible, a unit of stratification was removed in its entirety from all surrounding units, after which underlying units of stratification were excavated. Consequently, profiles showing the stratigraphic sequence were generally not preserved within contiguous blocks of excavation units. To provide for the reconstruction of profiles, a plan map was made at the base of each arbitrary and natural contextual unit. All plan maps included numerous elevations along the unit boundaries to facilitate the reconstruction of profiles. The site was documented in black-and-white print film and color slides.

2. Stratigraphic Recording

The stratigraphic recording system used in the field was based on the Harris system (Harris 1989). This system has been found to be useful in recording and clarifying complex stratigraphic sequences (Praetzelis et al. 1980; Cheek et al. 1983; Harris 1989; Cheek et al. 1991; Harris et al. 1993; Cook and Balicki 1994). This system gives equal stratigraphic weight to deposits and interfaces and assigns a unique number to each unit of stratification. It should be noted that numbers were considered only as identifiers and did not represent a stratigraphic sequence. Accordingly, for example, matrix 2 could be stratigraphically lower than matrix 88.

The use of the Harris system of stratigraphic principles assumes that each stratigraphic context is deposited at one time and should receive one stratigraphic referent (Harris number). Thus, excavated contextual units that were derived from the same unit of stratification were given the same Harris number. Each excavator recorded the relationships of the contextual unit being excavated (i.e., matrix/matrices above and below, and correlations if any). Field forms included a space for recording these relationships. The result was the creation of a Harris matrix for each unit, which then could be combined into a large site matrix (Bibby 1993; Brown and Muraca 1993). Excavation-unit provenience information was cross-referenced on the matrix record. For consistency, the same individuals recorded and described all soil information for the Harris matrix. The intersite correlation of stratigraphy and the construction of the site Harris Matrix was the responsibility of the project archaeologist.

The field investigations utilized a two-part numbering system to identify each contextual unit within an excavation unit. The first number represents the excavation unit. The second number identifies a unit of stratification or a portion of a unit of stratification within that unit. For example, the contextual unit number for Excavation Unit 5, Unit of Stratification 1, would be 5.1. The excavation of a unit resulted in a series of these two-part numbers assigned to each unit of stratification encountered. However, the numbering system does not record sequence

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information relating to stratigraphic position. The contextual unit numbers were then grouped by Harris numbers. In addition, arbitrary contextual units within a soil matrix greater than 1 ft. (30 cm.) in depth were grouped under the same Harris number. If artifacts were recovered or a soil sample taken from a matrix exposed in a trench, the appropriate Harris designation was provided on the field-specimen bag. Each Harris number represented a unit of stratification (a group of contextual unit numbers, an interface, or a feature). This two-tiered approach to the creation of Harris numbers was used because it provided flexibility in interpreting the data and in recording the field excavations. While contextual unit numbers are useful during the field work, the stratigraphic analysis is based on the Harris numbers. Furthermore, within the stratigraphic analysis, Harris numbers are grouped into phases, reflecting site occupation.

Within the Harris system, all units of stratification receive equal treatment. Thus features (within the traditional definition) were provided a feature number, but were not considered different from other units of stratification. The feature excavations focused on features that contributed to addressing one or more of the research topics. For example, features from later time periods (such as the Early Industrial [1830-1870] and later) that penetrated the significant deposits were mapped and removed. Architectural features were excavated and recorded using the same methodology employed to excavate units of stratification from the period of significance.

An overall composite plan map was drawn of the site. In addition, detailed plan maps were drawn of all surfaces exposed within excavation units. Central to the Harris method of stratigraphic analysis (1989:95-104) are single-layer plan maps, which are useful in the interpretation and presentation of stratigraphic sequences. On sites where large, contiguous blocks of excavation units are excavated, single-layer plans provide the archaeologist with the most complete record of each unit of stratification. The reconstruction of the stratigraphic sequence of a complex site cannot be fully understood through a technique based solely on profiles, because profiles provide a limited view of a unit of stratification. However, the excavation methods employed at the Mill Pond site, principally the test trenches and noncontiguous placement of excavation units, did not provide the information necessary to construct single-layer plans that would reflect the stratigraphic development of the site and aid in site interpretation. Consequently, as a tool for stratigraphic analysis of the Mill Pond site deposits, the construction of single-layer plans was not emphasized. Modifications to the Harris system will be discussed in conjunction with the archaeological results (Section V).

C. Laboratory Processing

Artifacts recovered during the field investigations were returned to Timelines' Charlestown laboratory for processing. Artifacts requiring special handling or organic objects, specifically wood and leather, were processed immediately. Refrigeration was used to temporarily store floral samples, wood objects, and leather objects that, when exposed to air, would otherwise have rapidly deteriorated. Artifacts with stable surfaces, including metal, ceramics, glass, and bone, were washed, separated by material class, and placed in a deionized water bath.

The deionized water bath was used to reduce the level of chlorides that impregnated ceramics, glass, bone, and shell. Chlorides accumulate in buried artifacts and can cause deterioration. Extended soaking in a deionized bath, including frequent water changes, extracts most of the chlorides. Artifacts were removed from the bath when the level of chlorides was reduced to < 10 parts per million (ppm.) for ceramics and glass and < 30 ppm. for bone and shell. Metal artifacts were soaked in solutions of sodium hydroxide and sodium sesquicarbonate to reduce chlorides. Leather was soaked in a bath of deionized water and oxalic acid or ammonium citrate to neutralize iron

chlorides and return the leather to its original coloration. Once the chloride levels were reduced, artifacts were air dried and labeled. Selected artifacts underwent stabilization and/or full conservation.

Cataloguing was a continuing process: artifacts were catalogued wet, as stabilization procedures were still in progress, but the initial cataloguing was checked when the artifacts were labeled. To the extent possible, artifacts were identified by type, material, and function. Diagnostic artifacts, unique objects, and large objects were labeled. Ceramic rims, bases, and decorated sherds were labeled. Labeled glass artifacts included bottle finishes, large neck fragments, bases, and decorated fragments. Labeling included site number, catalogue number, and provenience information. When artifact stabilization (chloride reduction) and cataloguing were completed, artifacts were packed in resealable polyethylene bags containing acid-free labels.

Artifact conservation included the stabilization of glass, metal, and leather. When chloride levels had been reduced, glass artifacts to be conserved were dewatered in baths consisting of increasing concentrations of ethanol to prevent delamination; then these artifacts were impregnated with a solution of acryloid B-72 and dried. For metal, once chloride levels were reduced, the artifact was soaked in a bath of deionized water to remove chloride reducing chemicals, dried, and finally coated with acryloid B-72. Once the chloride levels in leather artifacts were reduced, the object was prepared for preservation by impregnating it with polyethylene glycol (PEG). Leather objects were reshaped and supported, then freeze dried to remove any remaining moisture. Finally, wood was soaked in a deionized water bath, impregnated with PEG and freeze dried.

D. Artifact Analysis

Artifacts from the Mill Pond site included ceramics, glass, metal, faunal, and floral materials. This section deals specifically with ceramic, glass, and metal artifacts. The analysis of these classes of artifacts was the responsibility of the Laboratory Supervisor, Principal Investigator, and Project Archaeologist. Faunal and floral materials were sent to the appropriate specialists for analysis. The methodologies used in the faunal and floral analysis are discussed in Section III. E.

All artifacts were entered into a database, which included provenience, artifact type, artifact class, material type, and date range fields. Information from the artifact data base was used to create the artifact catalogue (Appendix H) and for several special artifact analyses. The database provided the flexibility needed to manipulate the entered data in a variety of ways.

1. Artifact Pattern Analysis

The database also included fields organized according to South's artifact pattern analysis (South 1977). Artifacts were placed in groups and classes defined on the basis of function. Each artifact group was assigned a unique code based on artifact function. All artifacts other than faunal or floral were grouped within eight functional categories (activities, architecture, arms, clothing, furniture, kitchen, personal, and tobacco) and one miscellaneous category. Each group was further subdivided into classes, into which specific artifact types were placed. For example, the kitchen group included such classes as ceramics, tumblers, glass tableware, and bottles, and the personal group includes the classes of coins, keys, and jewelry. The functions associated with each group are mostly self-explanatory, with the exception of the activities group. This group included artifacts associated primarily with predominately male work-related activities; examples were construction hardware, tools, and fishing gear. A

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further, miscellaneous category was toys. The artifact-pattern analysis was used to examine site formation processes in different deposits and assemblage differences and similarities between phases.

2. Mean Ceramic Date

Mean ceramic dates (MCDs) were calculated for each contextual unit (CU), Harris number (HN), and phase. Mean ceramic dates, developed by South (1977), are a weighted mean of a manufacture date range. They are reliable for the late eighteenth and early nineteenth centuries when there was a rapid replacement of ceramic types. They are less reliable for the early eighteenth century, because the majority of ceramic wares in use during this interval were manufactured over a long period. For example, plain, white tin-glazed ceramics, a common type of ceramic vessel, were manufactured from 1640 through 1780. The effect of the longevity of ceramic wares on the MCD may skew eighteenth-century deposits towards earlier dates. In general, ceramic wares exhibiting a long period of use were manufactured prior to 1762, when the development of creamware rapidly changed the world ceramic market. Although the MCD is not as reliable an indicator of site occupation in the first half of the eighteenth century, the large artifact sample sizes created by the grouping of matrices within phases will provide an MCD reflecting the approximate date of the phase.

In addition to the relative dating of a unit of stratification, the MCD can be used to examine site-formation practices. Within the Harris system of stratigraphic recording, variance in the MCD from the expected date of the unit of stratification can be used to examine cultural or environmental formation processes (Gerrard 1993:235-236). Consequently, using the MCD, each excavation provenience can be assessed and compared to other provenience units within the HN to determine if artifacts were mixed. Furthermore, MCD dates provide input into the grouping of HN within large phases. Finally, if the stratigraphic sequence is constructed correctly and if the units of stratification within the site represent primary deposits exhibiting little artifact mixing, the earliest MCD should be at the base of the sequence and the later MCD dates at the top.

Table III-1. Datable ceramic types and date ranges.

ARTIFACT TYPE	DATE RANGE	MEDIAN
Stoneware; Rhenish Brown	1540--1600	1570
Earthenware; Green/Yellow Glazed, White Body	1600--1700	1650
Earthenware; Tin-Glazed Blue Dash Charger	1620--1720	1670
Stoneware; Deteriorated Bellarmine	1630--1700	1665
Earthenware; Tin-Glazed English Blue Decoration	1630--1780	1705
Earthenware; Tin-Glazed Manganese Decoration	1630--1780	1705
Earthenware; Tin-Glazed Missing Glaze	1630--1780	1705
Earthenware; Tin-Glazed Polychrome	1630--1780	1705
Earthenware; Iberian Storage Vessel	1630--1800	1715
Earthenware; Tin-Glazed Ointment Pot, Pedestaled	1630--1810	1720
Porcelain; Chinese Overglaze Export	1630--1900	1765
Porcelain; Chinese Undecorated	1630--1900	1765
Porcelain; Chinese Underglaze Blue	1630--1900	1765
Earthenware; Tin-Glazed Plain White	1640--1780	1710
Earthenware; Slipware Refined North Devon	1650--1710	1680
Earthenware; Slipware Sgraffito North Devon	1650--1710	1680
Stoneware; Rhenish General	1650--1725	1687
Stoneware; Rhenish Sprig/Comb/Blue/Mang. Decoration	1650--1725	1687
Stoneware; Westerwald Chamber Pot	1650--1725	1687
Earthenware; North Devon Gravel-Tempered Ware	1650--1775	1713
Earthenware; Staffordshire Combed	1670--1780	1725
Earthenware; Staffordshire Dot-Decoration	1670--1780	1725
Earthenware; Staffordshire General	1670--1780	1725
Earthenware; Staffordshire Mottled Yellow/Brown	1670--1780	1725
Earthenware; Staffordshire Trailed	1670--1780	1725
Earthenware; Tin-Glazed "Bleu Persan"	1680--1690	1685

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ARTIFACT TYPE	DATE RANGE	MEDIAN
Stoneware; Nottingham	1683--1810	1747
Stoneware; Rhenish Hohn Gray	1690--1710	1700
Stoneware; British Brown	1690--1775	1733
Stoneware; British White-Slip Gray/Buf Body	1690--1775	1733
Stoneware; Refined Red Sprigged/Unglazed	1690--1775	1733
Stoneware; Burslem	1700--1775	1737
Stoneware; Salt-Glazed Gray, American	1700--1775	1738
Stoneware; Salt-Glazed Gray, General	1700--1775	1738
Stoneware; Westerwald Blue Decorated, Incised	1700--1775	1738
Stoneware; Westerwald Chamber Pot	1700--1775	1738
Stoneware; Westerwald General	1700--1775	1738
Stoneware; Westerwald Manganese/Blue Decoration	1700--1775	1738
Stoneware; Slip-Dip White Salt-Glazed	1715--1775	1745
Earthenware; Buckley Ware	1720--1775	1748
Stoneware; Salt-Glazed Gray, General	1720--1780	1750
Stoneware; White Salt-Glazed	1720--1780	1750
Stoneware; White Salt-Glazed, Chamber Pot	1720--1780	1750
Earthenware; Astbury	1725--1750	1738
Stoneware; Salt-Glazed Brown, American	1730--1915	1823
Stoneware; Salt-Glazed Gray, American	1730--1915	1823
Stoneware; White Salt-Glazed Molded	1740--1765	1753
Earthenware; Whieldon Clouded Ware	1740--1770	1755
Earthenware; Refined Agate Ware	1740--1775	1758
Stoneware; White Salt-Glazed	1740--1775	1758
Stoneware; White Salt-Glazed Plate	1740--1775	1758
Earthenware; Jackfield	1740--1780	1760
Porcelain; Batavian Porcelain	1740--1780	1760

ARTIFACT TYPE	DATE RANGE	MEDIAN
Earthenware; Jackfield Type	1740--1800	1770
Stoneware; White Salt-Glazed Scratch Blue	1744--1775	1760
Porcelain; English Soft-Paste	1745--1830	1788
Earthenware; Whieldon 'Cauliflower' Ware	1750--1770	1760
Earthenware; Dark Green Glazed Cream Body	1759--1775	1767
Earthenware; Creamware Deeper Yellow	1762--1780	1771
Earthenware; Creamware General	1762--1820	1791
Earthenware; Creamware General, Chamber Pot	1762--1820	1791
Stoneware; Debased Scratch Blue, Chamber Pot	1765--1795	1780
Stoneware; White Salt-Glz. Debased Scratch Blue	1765--1795	1780
Earthenware; Creamware Overglaze Hand-Painted	1765--1810	1788
Earthenware; Light Green Glazed Cream Body	1765--1810	1787
Earthenware; Creamware Transfer-Printed	1765--1815	1790
Earthenware; Creamware Feather-Edged	1770--1800	1785
Earthenware; Creamware Annular	1770--1820	1795
Earthenware; Creamware Light Yellow	1770--1820	1795
Earthenware; Pearlware Blue Hand-Painted	1779--1830	1805
Earthenware; Pearlware Blue Shell-Edged	1779--1830	1805
Earthenware; Pearlware Molded	1779--1830	1805
Earthenware; Pearlware Undecorated	1779--1830	1805
Earthenware; Pearlware Willow Transfer-Print	1779--1830	1805
Earthenware; Pearlware Green Shell-Edged	1779--1830	1805
Earthenware; Pearlware Transfer-Print	1784--1830	1807
Porcelain; Canton	1784--1840	1812
Porcelain; Chinese Overglaze Trade	1790--1825	1808
Earthenware; Pearlware Annular	1790--1830	1810
Earthenware; Pearlware Willow Transfer-Print	1790--1840	1815

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ARTIFACT TYPE	DATE RANGE	MEDIAN
Earthenware; Luster Decorated	1790--1860	1825
Porcelain; Bone China	1794--1900	1847
Earthenware; Creamware Mocha	1795--1825	1810
Earthenware; Pearlware Mocha	1795--1830	1813
Earthenware; Pearlware Polychrome Hand-Painted	1795--1830	1813
Earthenware; Buff-Glazed Earthenware	1800--1820	1810
Earthenware; Whiteware Annular	1820--1890	1855
Earthenware; Whiteware Blue Hand-Painted	1820--1900	1860
Stoneware; Bottle, Ink/Beverage	1820--1900	1860
Earthenware; Whiteware Blue Transfer-Print	1820--1930	1875
Earthenware; Whiteware Brown Transfer-Print	1820--1930	1875
Earthenware; Whiteware English	1820--1930	1875
Earthenware; Whiteware Molded	1820--1930	1875
Earthenware; Whiteware Undecorated	1820--1930	1875
Earthenware; Whiteware Lt. Blue Transfer-Print	1829--1930	1880
Earthenware; Brownware Buff Body/Glaze	1830--1900	1865
Earthenware; Yellowware Plain	1830--1900	1865
Stoneware; Smooth Glaze Buff	1840--1900	1870
Stoneware; Smooth Glaze Buff & Gold	1840--1900	1870
Earthenware; Yellowware Mocha	1840--1910	1875
Stoneware; Albany Slip, American Gray/Brown	1840--1920	1880
Ironstone; English Molded	1842--1930	1886
Ironstone; English Plain	1842--1930	1886
Earthenware; Rockingham	1845--1900	1872
Earthenware; Redware Standrd. Flowerpot	1893--1950	1922

3. Terminus Post Quem

Terminus post quem (TPQ) dates were calculated for each CU, HN, and phase. The TPQ is the earliest beginning date for an artifact in a deposit and provides a date after which a matrix was deposited. In principle, the TPQ date provides the earliest date a matrix could have been deposited; however, the artifacts used to provide TPQ dates are affected by site-formation processes. If artifacts from later periods migrate downward through natural processes or disturbances into lower levels of a site, the TPQ dates will be later. The use of TPQ dates must include the examination of each analytical unit for artifact mixing. Because the TPQ can be based on a single artifact or a small number of artifacts, the TPQ date can be greatly influenced by artifact infiltration.

4. Ceramic Price Indices

In 1980, George Miller published a procedure for quantifying the relation between ceramics and socioeconomic status. He examined price lists used by English firms that controlled the world ceramic market and developed a series of index values for different decorative types and forms (Miller 1980). The index values were based on the cost of common creamware. One of the problems with the application of this analytical tool is inflation of later index values compared to earlier values. However, Miller has identified the cause of the inflation as the prevalence of discounting (selling ceramics below the list price, which was used in calculating his original). As a result he recalculated the indices (Miller 1991). Miller's indices are currently restricted to the period from 1787 to 1880. As a result, only ceramics from Early Republic period (1775-1830) contexts were used in this analysis.

The ceramic index analysis was conducted to examine the relationship between consumer behavior and socioeconomic status and to identify other consumer behavior patterns related to the purchase of ceramics (Spencer-Wood 1987). Although these two goals are similar, they address different aspects of consumption. It has been demonstrated that the ceramic index values from archaeological sites often correlate to some degree with socioeconomic status as reflected in historical documents, particularly status based on head-of-household's occupation. However, factors such as household composition, location with respect to trade routes, ethnicity, and changes in the marketplace may affect the correlation. Other consumer behavior patterns, however, may also be examined through the use of these indices, such as differences in consumption patterns among household types and neighborhoods (Cheek et al. 1991; Wall 1991).

5. Minimum Vessel Analysis and Cross-Mending

The goals of the minimum vessel analysis and cross-mending include aiding in identification of vessel form, the examination of site formation processes, and stratigraphic analysis. The analysis provides a data set that includes ceramic vessel types and numbers within excavated proveniences. These data are then used to address lifeways, ethnicity, consumer behavior, and, to an extent, market availability.

The cross-mending complements the stratigraphic analysis by providing information on artifact movement. The interpretation of cross-mends between ceramic vessels depends on context. Cross-mends are generally assumed to indicate that the deposits in which they are found are stratigraphically related, have the same origin, or have different origins but have been mixed. Cross-mends between two units of stratification indicate that either cultural or environmental processes or a combination of the two were acting upon the deposit. Cross-mends between intrusive matrices and earlier matrices are assumed to be due to mixing.

6. Identification of Maker's Marks and Other Identifying Marks

Maker's marks may be present on a variety of artifacts, including ceramics, bottle glass, wig curlers, spoons, and tobacco pipes. Information from maker's marks can aid matrix dating and provide information on markets. During the cataloguing processes and, in the case of metal, after conservation, artifacts exhibiting maker's marks or dates were examined to identify the mark and date. The mark was then recorded and an attempt was made to identify the maker.

Information concerning the date of a matrix can be obtained from coinage. If the preservation of the coin was good, information was recorded during the conservation process; otherwise, the recording of pertinent information (type, value, and country of origin) was left until the artifact was conserved.

7. Tobacco Pipe Analysis

Clay tobacco-pipe fragments were examined for morphological information, including bowl shape and stem-bore diameter. Decorative elements, including maker's marks, were recorded. Within this class of artifacts, stylistic and manufacturing attributes change over time. Since the use-life of clay pipes is short, they generally enter into the archaeological record more quickly than glass and ceramic artifacts. Thus, this artifact type is useful in addressing the age of a deposit.

Tobacco-pipe bowl shape changed over time. Noël Hume (1969:302-304) provides a guide to the chronology of pipe-bowl shapes and provides date ranges, where applicable.

Pipestem bores can provide additional dating information. The stem hole for a clay pipe was made by pushing a wire through the pre-fired solid stem. In general, the diameter of the wire used to produce the stem hole decreased from 1620 to 1820, with the result that a date could be calculated for a deposit based on pipestem bores (Harrington 1978; Binford 1978; Noël Hume 1969).

Binford (1978:66) built upon earlier research undertaken by Harrington (1978) and developed a mathematical formula that provided an absolute date, based on the theoretical date at which time pipe stem holes would disappear (1931.85) and on a constant reduction of pipestem bore every 38.26 years. The resulting formula is $Date = 1931.85 - (38.26 \times ((sum\ of\ pipe\ bore\ diameters/sample\ size) \times 64))$. It should be noted that pipestem bores are calculated in 64ths of an inch. For example, if ten 5/64-in. pipestems were recovered from a deposit, the formula would be $1931.85 - (38.26 \times ((0.78125/10) \times 64))$ and the resulting date would be 1740.55.

Noël Hume (1969:297-301) indicates that a large sample of pipestem bores is needed in order for the formula to produce accurate dates and that the accuracy of the formula is restricted to the years between 1680 and 1760. However, small samples can provide accurate dates. Pendery (1987:152-158) obtained reasonably accurate dates based on a small pipestem sample sizes from Charlestown sites.

The date obtained by the pipestem bore formula has been found to be, in general, slightly earlier than the actual time of deposition (Faulkner and Faulkner 1985; Noël Hume 1979). Consequently, although sample size was small in several contexts and the dating technique is limited by several factors, pipestem bore dates were calculated for each

phase. The pipestem bore dates were then used in conjunction with other dating methods to present a range of dates for a deposit.

E. Contextual Analysis

Contextual analysis played an integrative role in the project. It was designed to provide information employed in the reconstruction of microenvironments such as yardscapes, as well as supplementing the overall interpretation of site stratigraphy. In the latter case, the contextual analysis was a powerful addition to the Harris matrix as a method of classifying stratigraphic units and the phasing of each site as a whole.

The conventional use of contextual analysis has been to provide the type of environmental data required to reconstruct living conditions and address such research concerns as health and hygiene. By insuring that specialists play an active role in the development and implementation of the overall sampling design of the project, the pitfalls that have limited the interpretive potential of "Environmental Archaeology" as practiced in Britain and Europe can be avoided (see Jones 1984; Mrozowski et al. 1989). Specialists communicated on a regular basis with other project staff to coordinate the collection of samples. This entailed not only the sampling of cultural contexts, but the collection of control samples. To facilitate comparisons, large, multipurpose samples were collected for different analyses. In some cases, additional, specifically designed (palynological) sampling techniques were employed (see discussion below).

The second major component of the contextual analysis, the examination of formation processes, required that samples be collected from site strata. Coordination was handled by the consulting contextual archaeologist, who conferred with all project specialists. The analysis and interpretation of these samples was conducted in conjunction with the examination of material culture and site stratigraphy by project archaeologists. The following descriptions of the contextual methods will be amplified upon receipt of final reports from the various specialists.

1. Pollen Analysis

Pollen samples were taken using a continuous-profile sampling method. This method has proven effective in recovering a wide range of land-use and site-formation information in urban environments (e.g., G. Kelso and Beaudry 1990).

Pollen samples were collected from several areas within the site, either by hand or through coring. The sampling strategy was expanded from the two profiles proposed in the permit application to obtain the appropriate samples for recording the entire pollen sequence for the site.

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2. Faunal Analysis

Faunal material was collected concurrently with the artifacts. Faunal materials were placed in separate bags to minimize breakage during handling and assigned separate bag-lot inventory numbers to facilitate tracking during laboratory analysis.

3. Floral Analysis

Constant-volume soil samples were taken for flotation of preserved floral remains. At least one sample was taken from features encountered during excavation. Samples were also taken from selected surface and fill deposits as well as Mill Pond sediments. After flotation, the light fraction was dried and examined by the ethnobotanical consultant. The results were used in analyses of past environments and foodways at the sites.

4. Tree-Ring Analysis

Cross-section samples of selected wharf timbers were cut for tree-ring analysis. The tree-ring samples will provide additional information on the wharf repair cycle, type of wood used, and, possibly, on the age of the wharf. An attempt was made to fit the tree-ring sequence exhibited at the Mill Pond site into the larger New England sequence.

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IV. HISTORICAL RESEARCH RESULTS

The narratives that make up the initial portion of this section discuss the ownership and occupation of the property that comprised the Mill Pond site between ca. 1650 and ca. 1830. This includes the Plantation, Colonial, and Early Republic periods. The second portion of the section discusses the Mill Pond and its relation to the project area. The third portion provides a summary of the land's ownership history, relating it to the contextual periods, and a discussion of the property boundaries and their relation to the excavated areas.

A. The Mill Pond Site's Landowners and Occupants

The detailed information presented in this section, like that presented for Paddy's Alley and Cross Street Back Lot sites (Cook and Balicki 1994), provides a temporal and social context within which the archaeological remains must be interpreted. These contexts are affected by other contexts in which the people's lives are embedded: the political and economic issues of the day, the social and economic structure, and their neighborhood. The latter is covered in more detail in Section IX.

The discussion that follows will use the block and lot numbers assigned by Clough (Clough n.d.). The project area is located within Clough's block number 1500 (Figure IV-1). Lot 1521 in block 1500 (referred to herein as lot 21) is the lot on which the Mill Pond site is located.

John Lowe

John Lowe, a wheelwright, was married to Elizabeth Lowe and died in 1653. He owned lot 21 until 1651, when he sold the property to Samuel Shoare (Suffolk Deeds 1:165). Lowe was listed in the Book of Possessions (ca. 1645) as a landowner (Whitmore 1881:559) and seems to have owned at least one other parcel besides lot 21. He was granted a lot for a house and garden in 1636/37 (Thwing Index 2:15, hereafter referred to as TI). In July of 1637, Lowe was also granted some marsh land near the Town Cove, next to the Cheesborough, for a house and yard (TI 2:10; Winsor 1881:I:xxi), and he remained owner of that property at least until the 1650s. The first property may have been the Mill Pond site. At the time of the sale, the property apparently was 30 ft. wide along Back Street and included a dock; the depth of the lot from Back Street to the Mill Pond is not given (Suffolk Deeds 1:165).

Samuel Shoare

Shoare, a tailor, bought lot 21 in 1651 (Suffolk Deeds 1:165), held it for two years, and then sold it to William Waters (Suffolk Deeds 2:107). He bought this land 10 years after he had been admitted to Boston as a townsman (TI 2:63) and to the church (TI 2:11). He was declared a freeman in 1642 and his wife, Abigail, was admitted to the church in 1646 (TI 31:3). They had 10 children, at least five of whom died within the first year. Shoare was apparently alive in 1678 when he administered the estate of a son who died at age 34 (Pope 1969:414). The Clough and Bowditch records (Seasholes [1989]) indicate that Shoare also owned the adjacent parcel, which he sold to William Waters in 1653. The Bowditch records (Seasholes [1989]) can be interpreted to imply the other parcel eventually became lots 17-20.

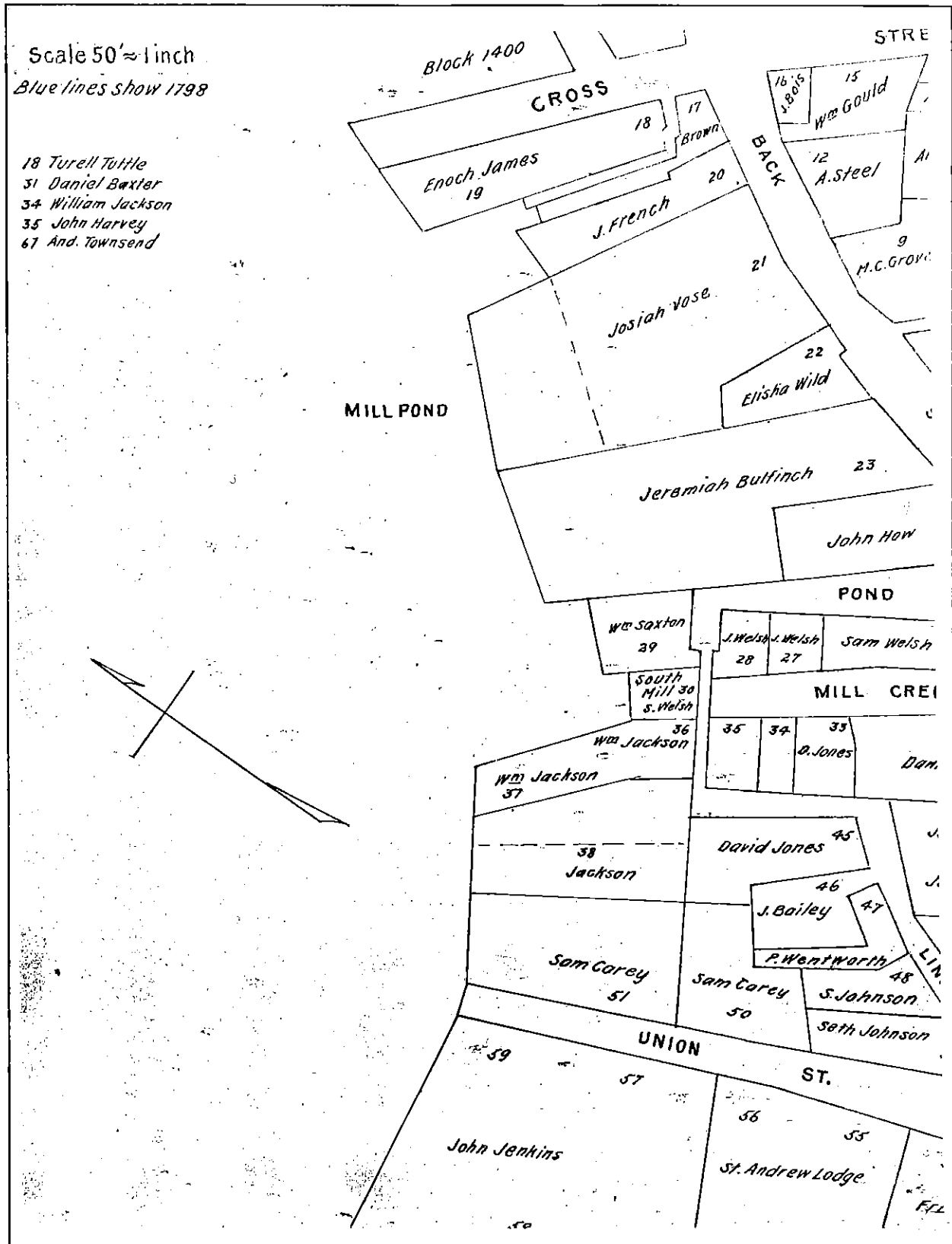


Figure IV-1 - Detail from Map of Town of Boston, 1798 (Clough Collection; courtesy of the Massachusetts Historical Society).

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The deed to William Waters for lot 21 gives the breadth as 66 ft. along the street and the depth as from the street to the high-water mark without giving a measurement. Although no dock is mentioned, a frame for an unfinished house and the material to finish it are mentioned as part of the deed. This evidence suggests that no one was living on the property yet, but that Shoare was in the process of improving it when he sold it.

William Waters

William Waters owned the property from 1653 (Suffolk Deeds 2:107) to around 1676. The deed lists him as a planter; Thwing lists him as a husbandman in 1668; and a 1698/1699 deed by his grandson executor (William Waters, the weaver) refers to him as a yeoman (Suffolk Deeds 19:65). According to the Boston town records (Holbrook 1980:271), he was a resident of Boston by 1650 and was taxed in 1674 at 74 pence. In 1660 he was directed to open the highway through his garden to the mill ward within the week (TI 2:155). William Waters was on the tax rolls in 1681. He is not listed in Seybolt (1939) as having held any town offices.

William Waters mortgaged his land in 1668 to Simon Lynde, who became an important merchant in Boston. Lynde was a member of the merchant group that was in control of the Massachusetts government under Dudley from 1686-1689. In 1686, he was appointed Judge of the Suffolk County Court of Appeals (Bailyn 1955:175) and in 1687 Lynde was the leader of a group that made a proposition aimed at solving the currency problem of the time (Bailyn 1955:187).

Waters' 1668 mortgage to Lynde reflects the two pieces of land he bought from Shoare and the property's boundaries are given as 100 x 100 ft.. This property may have been composed of lots 17, 18, 19, 20, and part of 21 (lot 21 being the property under consideration). The boundaries of the property are given as

the Northerne part of my new buildings with Lands and grounds, thereto belonging, Containing one hundred foote and upwards front in breadth to the street Easterly & soe Extending westerly in depth to the mill Pond, one hundred foote & upwards, with the new Chimnies Lentoos & other houseing. . . bounded with the street Easterly & northerly, with the mill pond westerly, & with the remaining part of my new building, & the ground thereto belonging Southerly.

The description has the land extend from the intersection of Cross Street (northerly) and Back Street (easterly) 100 ft. towards the south up to the southern half of his new dwelling. While there is no mention of a dock or wharf, the depth of the lot is 100 ft. Based on measurements from later deeds, lots 17, 18, 19, 20, and 21 measured approximately 120 ft. in breadth along Back Street (Seasholes [1989]:lots 1517, 1518, 1519, 1520, 1521). His new building was probably all on lot 21, but the mortgage seems to have excluded the portion of the lot on which the southern half of his new dwelling was located, and in which he may have been living. This division documents that the house was divided in two. The division seems to have continued into the 1780s, when William Maycock's will left his son-in-law Joseph Jackson the half of the house in which Jackson was living. This implies that throughout much of the seventeenth and eighteenth centuries there were at least two families living on the lot.

A rare drawing of a Boston house from this period appears on a 1707 map (Figure IV-2) in the archives of the New England Company. The elevation of the dwelling depicted in the 1707 map is almost identical to elevation of the reconstructed original fenestration pattern of the ca. 1687 Boardman house, Saugus, Massachusetts (Cummings

1979: Figure 201:2). If the Waters house, was built in the 1660s, then these two houses were built within twenty years of each other.

The building shown on the 1707 map was built on a two-room plan with a chimney in the middle of the building and one on the right or north gable end. The two-room central-chimney plan, fully developed in England in the East Anglian farmhouse, was almost universally accepted in New England (Cummings 1979:25). The two rooms on the ground floor were called the parlor and the hall and a lean-to was often built across the back of the dwelling. The description of property in the mortgage document refers to such a "lentoe."

This house could have been built on a two-room plan, one on either side of the chimney, or on a one-room plan with a chimney at one end, to which another room would be added when the house was expanded longitudinally. One-room plans were built more commonly by individuals with limited means (Cummings 1979:22). Although there is not much of a comparative base and we do not have an inventory for Waters, judging from the property he owned, he probably was not of "limited means" and could have built the larger house.

Edward Rawson

Exactly when the property was transferred to Edward Rawson is not clear because no documents have been found which specify the kind of transfer. However, Clough's map of 1676 Boston has Rawson as the owner at that time.

Rawson (born in England in 1613 and died in Boston 1693) was the son of David Rawson, a citizen and merchant tailor of London (Pope 1969:379). Edward Rawson came to the New World in the 1630s and was a clerk in Newbury. He removed to Boston in 1650 and was chosen Secretary of the Colony from 1650 to 1686. He and his son William mortgaged this land in 1672[?] to William Stoughton, who was acting as an agent for the New England Company, later called the Corporation or Society for the Propagation of the Gospel to the Indians in New England (SPGI)(Suffolk Deeds 16:284). The corporation obtained a judgment in 1681 against Rawson for failure to pay the principal and interest.

Society for the Propagation of the Gospel to the Indians

The New England Company was an association of businessmen and men of affairs who formed the company to invest in the New Works and to convert the Indians. Their affairs in New England were under the control of a set of commissioners who managed the company's business and spiritual interests (Kellaway 1961). William Stoughton was the agent for the SPGI who took control of the property, possibly in 1681 (Suffolk Deeds 16:284). At that time, he was a commissioner of the SPGI and was appointed treasurer in 1690 (Kellaway 1961:201-2). He was also an important individual in the new royal charter government established by England in 1692 (Warden 1970:34-59). He was Lieutenant Governor under Governor Sir William Phipps in 1692 and acting Governor from 1694 until his death in 1701 (Kellaway 1961:202). Stoughton was replaced as treasurer by Samuel Sewell, also a commissioner, who served in addition as secretary of the organization (Kellaway 1961:204). Sewell was a prominent Puritan merchant and also a famous diarist (Sewell 1967).

The SPGI had little land in New England. Lot 21 produced a rent of £15 per annum from two tenants, John Farnham and Cornelius Bennington. The property was described as "One Dwelling House and Land in Ferry Street in Boston bounded in the rere with the Mill Pond" (Kellaway 1961:226). Ferry Street was Back Street, which led to

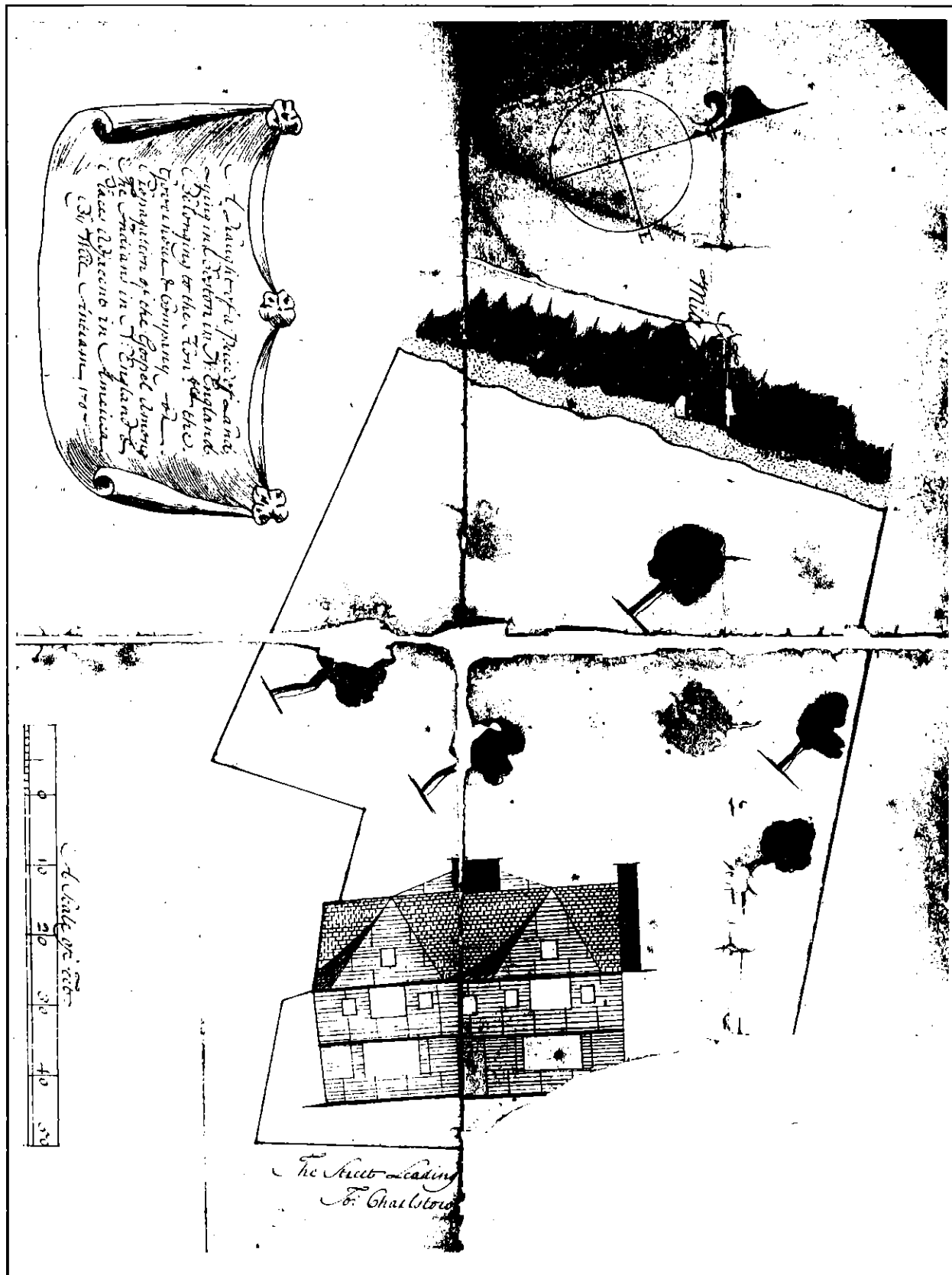


Figure IV-2 - Plat of Lot 21 (Antram 1707).

the Charlestown ferry. The SPGI also owned a chamber in Fish Street, Boston, and one wharf, adjoining land, and other nearby parcels in Charlestown. The land and wharf in Charlestown was in bad condition, and Sewell advised the Company to sell both the Charlestown and Boston properties. In Boston, lot 21 was sold for £250 (Suffolk Deeds 29:201) to a John Eustis in 1709. The Charlestown wharf was sold for £350 in the same year (Kellaway 1961:226). The sale price of lot 21 was almost twice the average price of residential property in Boston that year and £50 higher than the average for commercial property (Warden 1976a:Table 1). The plat of the property dated 1707 may have been made in preparation for the sale. Although the plat (Fig. IV-2) does not show a wharf, the deed does mention one, as well as a messuage or tenement. A messuage was a term for a house with adjacent buildings, courtyard, and land used by the household (Merriam-Webster, Inc. 1986).

The measurements from the deed to Eustis and the plat map are essentially the same as those of the 1693 deed. In these transactions, the limits of the property changed to 73 ft. 5 in. wide on Back Street and 95 ft. deep. The reduction in width reflects the fact that lots 17 and 20 were still owned by William Waters (grandson of the first William Waters), who sold lot 17 to William Wilson in 1699 (Seasholes [1989]:1517 [Suffolk Deeds 19:65]) and lot 20 to John Dethrick in 1727 (Seasholes [1989]:1520 [Suffolk Deeds 41:148]). The southern boundaries of the lot are irregular. It is clear from the 1693 deed that the indentation in the southern boundary is caused by the house of Zipporah Potter, a free black women who owned lot 22 during the latter part of the seventeenth century.

John Eustis, the Elder

John Eustis, a housewright, bought lot 21 in 1709 (Suffolk Deeds 29:200). He was born in 1659, the son of William Eustis. His first wife, Elizabeth Morse, died in 1714 and he married Mercy Tax the following year (Roberts 1895,I:374). Mercy is listed as his wife in a 1715 mortgage (Suffolk Deeds 29:203). When she died in 1718, he married Mary Moulds in 1719 (Roberts 1895,I:374), who was mentioned in his 1722 will (Suffolk Probate #4570). He became a member of the Ancient and Honorable Artillery Company in 1711 and was a second sergeant in 1712 (Roberts 1895,I:374). At the time of his death in 1722, he was 63 years old. He had eight children by his first wife, of whom four died young (Thwing Index). He called his son John "his only son" and in his will also mentioned a married daughter, Abigail Butler, and three grandchildren, James, Abigail, and Elizabeth Butler. He was buried in King's Chapel Burial Ground (Roberts 1895,I:374). The circumstances of his other two children are unknown.

The name John Eustis occurs frequently in the lists of officeholders for Boston (Seybolt 1939). After appearing as Measurer of the Boards in 1691, the name appears continuously from 1696 to 1720, with the exception of 1710, 1715-1718, as an office holder. The offices are primarily those of Measurer of the Boards and Timber and Fence Viewer, but John Eustis was also a Tithingman in 1695/96, a Constable in 1698/99, and a Tithingman again in 1706/1707 and 1707/1708, at the same time when he was Fence Viewer and Measurer of Boards and Timbers. His highest office seems to have been the Clerk of the Market in 1704/1705. Since the John Eustis of lot 21 is a housewright and presumably had some experience measuring boards, he is likely to be the same as the office-holder John Eustis.

For a while, the dimensions of the property remained essentially the same, and the deed mentions a wharf as well as a messuage or tenement. The wharf continued to be mentioned in 1715, when Eustis took out a mortgage (Suffolk Deeds 29:203) with the public bank established that year (with the government trustees Andrew Belcher, Addington Davenport, Thomas Hutchinson, John White, and Edward Hutchinson) (Warden 1970:71). The mortgage mentions

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a "Messuage or Tenemt. and Tenements with the ground under the Same yards backside garden & Land and Wharf thereto appertaining." The mortgage also mentions a resident tenant, an individual named Adams, who was a blockmaker. His 1722 probate inventory lists two dwellings: a messuage or tenement, called "his mansion house and land in Back Street," and tenements, called "house land and stables in Back Street aforesaid" in the inventory. The probate valued Eustis's property at £1,046, of which £900 was the house and land (Appendix A).

All the property was willed to his son. The grandchildren were to receive £30 apiece within five or six years after his death. His widow received £50 in money "by agreement before marriage" and the use of the house and lands of lot 21 as long as Mary remained his widow. We do not know if she remarried or died shortly after John Eustis, but the son sold the property the following year. If Mary was alive and not remarried, it is unknown whether she stayed on the property. However, the information provided below suggests that Mary Eustis was in the neighborhood and may have continued to live on lot 21.

Deeds from adjacent lots suggest that Mary Eustis, widow, was living in the neighborhood in the middle of the 1700s with a son, Joseph Eustis, a housewright. Deliverance Dethrick, the widow of the man who bought lot 20 from William Waters, mortgaged her property to Joseph Eustis in 1759, and when Dethrick died in 1760 she willed the land to "my good friend Mary Eustis wido. & her son Jos. Eustis Housewright." Mary Eustis died in 1769 and her son kept the property until 1786 (Bowditch Papers 14: 352). Since John Eustis is mentioned as "my only son" in John Eustis's will, this Mary and Joseph Eustis may not be part of the family of John Eustis. On the other hand, the fact that the Mary Eustis mentioned in the will was a third wife and could have outlived her husband by 27 years, that two children of John Eustis's first marriage are unaccounted for in the will, and that Joseph Eustis was a housewright like John Eustis, suggests a family connection.

John Eustis, the Younger

The second John Eustis, a brazier, inherited the land from his father in 1722, and mortgaged it to William Bowditch, a merchant of Salem, for the use of the children of James Butler, a ropemaker, who was deceased (Bowditch Papers 14:337). Eustis and his wife Hannah sold it to William Maycock in 1723 for only £400, considerably less than the assessed value. However, this was four times the average sale price for residential and commercial property (Warden 1976a:Table 1). The mortgage was canceled in 1724 (Bowditch Papers 14:337). Whether John and Hannah Eustis were living on the property before or during their ownership is unknown. However, the mortgage to Bowditch suggests the Butler children and their mother were living there.

William Maycock

William Maycock, a brazier, bought lot 21 from John Eustis in 1723 for £400 and lived on the land for 48 years until he died in 1771. He was married to Elizabeth Sears and had seven children (Thwing Index). The boundaries of the lot remained the same, although the description of the features on the lot seems formulaic and does not include a wharf (Suffolk Deeds 37:171). In 1724, Maycock made an agreement with his neighbor on lot 22, Benjamin Eddy, a mariner, to exchange some land to even out the southern border of lot 21 with lot 22. Since the earlier deeds had been tied into the corners of Zipporah Potter's house, it seems likely that the Potter house had been torn down and replaced with another building that made a partial straightening of the boundary possible. In fact, the transaction mentions that there is a standing fence on the border, and the transaction seems to ratify existing conditions rather than instituting changes.

In 1727 Maycock mortgaged his property for £350 to Dorothy Frizell who later married Nathaniel Saltonstall (Suffolk Deeds 41:110). The property boundaries are the same as the those in the deed and a wharf is mentioned. The mortgage was released in 1731 by Nathaniel Saltonstall on behalf of his late wife (Suffolk Deeds 41:110).

William Maycock was not active in the town government. He did hold the office of Hogreeve in 1718/1719 and Tithingman in 1720/1721 but refused the position of Constable in 1722/1723 (Seybolt 1939:149,155,160). If his age at death, 83, is reported accurately (Boston Athenaeum 1968), he was in his early 30s when nominated to these positions.

Maycock was listed as a brazier in 1723. This is a general term that means metal worker or someone who trades in metals (Merriam-Webster, Inc. 1986). This interpretation is confirmed by a recent review of merchants in 1775 Boston which includes braziers in the list (Tyler 1986:Appendix). In his will (Suffolk Probate 14927) Maycock referred to himself as a truckman which seems, as discussed below, to be a kind of general merchant. He was also connected to the merchant community through the Congregational Church in Brattle Street. The executors of his estate were his "good friends," the wealthy conservative merchants Nicholas Boylston and Joseph Green, also members of the Brattle Street congregation and listed by Governor Bernard in 1769 as among the "first merchants of the town" (Tyler 1986:117). The minister of the congregation, to whom Maycock gave £10 in his will, was Rev. Dr. Samuel Cooper, "a leading member of the patriot hierarchy" (Tyler 1986:141). However, neither Boylston nor Green was a Patriot: both were against the Non-Importation Agreement of the late 1760s and are listed as major violators of it; Green became a Loyalist. Boylston died in 1771 but may have followed Green into the Loyalist camp (Tyler 1986:Appendix).

One cannot say what position Maycock may have taken in the conflict since he also died in 1771, but before Boylston, and does not seem to have been active in business in the immediately preceding years. Maycock is not listed in Tyler's comprehensive survey of merchants of the 1760s and 1770s (1989:Appendix), which, however, suggests that the merchant members of his church were more disposed to become Patriots than Loyalists when hostilities broke out. Sixty-five percent of the merchants in the Brattle Street Congregational Church can be documented as Patriots (calculated from data in Tyler 1986:Appendix) as opposed to approximately 50 percent in the entire Boston sample (Tyler 1986:246; some merchants with multiple specialties were counted twice by Tyler).

Maycock apparently was a pious man who deprecated the lifestyles of his two sons, William and Ebenezer. In his will, his sons were to receive part of the property and £800 (for William) or £400 (for Ebenezer) if they agreed to

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reform their behavior and "lead a sober and virtuous life," but until they did they would receive only interest income from the house, land, and money. If they did not reform or marry and leave children, the property and the money would go to John Jackson, who was married to William Maycock's daughter Abigail. If either son left a widow, a third of the son's portion would go to the widow. Since these were the only children mentioned in the will, Maycock's other four may have died before their father.

William Maycock's possessions were varied, but the value of his estate was lower than that of Eustis if the inventories alone are compared (Appendix A). The total value of £872 reflected the reduced value of the property and houses (£800), which may have been caused by the problematic economy of the times and the lesser value of his personal goods at £72 versus £146 for Eustis. On the other hand, the value of his estate is more than Eustis's if we considered that John Eustis's son sold the property for half its assessed value. Furthermore, Maycock had established two trust funds for a total of £1,200 for his two sons, and, if they did not measure up to his standards, for their children, or ultimately for Joseph Jackson.

Maycock also seems to have become embroiled in the debts of Nathaniel Wheelwright. Wheelwright bought a large amount of property during a short period before 1764 and then had the misfortune to incur £80,000 pounds of debt with military supply contractors in Canada. He had to sell all his land to his partner to satisfy his debts and avoid creditors. Wheelwright fled Boston and died in 1766, but his complicated debts were not settled until 1790 (Warden 1976a:93). In his will, Maycock divided the payment of any claim among his sons. Thus, he seems to have been a relatively wealthy man who participated in the upper levels of the Boston community but was not one of the elite and not a major figure in political life.

Joseph Jackson

Joseph Jackson, who called himself a truckman in his 1773 will (Suffolk Probate 15675), was the son-in-law of William Maycock, married to his daughter Abigail. According to Jackson's will, he had eight children: Joseph, Benjamin, William, John, Richard, Elizabeth Abraham, Abigail Greenough, and Sarah, in the order listed in the will. Jackson apparently obtained control of lot 21 since no mention of the claims of Maycock's sons are made in the will. In his will, Jackson gave each of his children 1 shilling and the remainder of his property to his widow; she was also named executor.

Jackson's inventory, which included six slaves, as well as horses, a chaise, a wagon, trucks and cart wheels, was not valued much higher than Maycock's (Appendix A). The value of the estate was around £945 and included a brick house and land occupied by Mr. B. Davis. It should also have included Maycock's wooden-frame "mansion house," which was apparently still standing in 1831 (Bowditch Papers 14:346). Since the brick house and land was the only house and land in the inventory and its value at £400 was half the value of the entire lot three years before, it appears that the inventory did not include lot 21. Perhaps the land was transferred to the children before the inventory, although there is no record of such a transaction.

Joseph Jackson, general merchant, aged 69, is on the list of 1775 Boston merchants compiled by Tyler (1986) in his study of smuggling and its role in fostering the Revolution. The Joseph Jackson who owned lot 21 had died in 1773. It is uncertain if this Joseph Jackson was the son of the owner of lot 21, was not related to the owner of lot 21, or was in fact the owner of lot 21 and Tyler did not know that he had died in 1773. Joseph Jackson, the son, however, was a merchant living in Essex County (Suffolk Deeds 133:212). Furthermore, it seems likely, given the

mercantile connections of the owner of lot 21, discussed below, the fact that "truckman" and "general merchant" are probably the same thing, and that lot 21's Joseph Jackson was likely to be 60 or 70 years old, that the Patriot in Tyler's list is the owner of lot 21.

The Jackson on Tyler's list dined at the Liberty Tree in Dorchester in 1769, had minor violations of the Non-Importation Agreement and signed a tax petition for the abatement of Boston's taxes in 1755 (Tyler 1986:Appendix). This Jackson was a Congregationalist who shifted his church membership from Brattle Street to Old South. His will was witnessed by Tuthill Hubbard, Thomas Brattle, and Samuel Calef. All three were merchants: Hubbard was a West India merchant; Brattle, an "inactive" merchant; and Calef, a wine merchant (Tyler 1986:Appendix). Business connections seemed to play a larger role than religion in choosing the witnesses to Jackson's will. Calef was an Anglican from Trinity Church, and Brattle, a Congregationalist from the Brattle Street Church. While Hubbard is not listed as belonging to any church, another Hubbard was a member of the Old South congregation like Joseph Jackson (Tyler 1986:Appendix).

Nathaniel Abraham, who married Joseph Jackson's daughter Elizabeth, also was a general merchant. He belonged to the Anglican congregation at Christ's Church, signed the Non-Importation Agreement, and was identified as a patriot who was on the list of those who dined at the Liberty Tree in Dorchester in 1769 (Tyler 1986:Appendix).

Additional indications of close ties to the merchant community are found in the records relating to the offspring of Joseph Jackson. In 1788 the descendants of William Jackson, a son of Joseph Jackson, sold a portion of the property to Josiah Vose. William Jackson is listed as a merchant of New York; two of his sons and the husband of his daughter were also merchants.

Heirs of Joseph Jackson

Although Joseph Jackson left his estate to his wife and not his children (unless lot 21 had been earlier separated), his children proceeded to divide and sell the land with the apparent concurrence of the widow, who is listed in one of the transactions (Suffolk Deeds 163:92) and who was alive until 1807 (Bowditch Papers 14:340). The children sold three-quarters of the land in 1779 (Bowditch Papers 14:340) to John Hurd for £9,000 (registered in 1782 in Suffolk Deeds 133:212), who was another Patriot and general merchant and who may have belonged to the West Church congregation (Tyler 1986:Appendix). The £9,000 figure is exorbitant, given the prices paid for the land before and after this transaction. Possibly the inflated price was related to devalued money or to speculation in the land; there had been some talk of filling in the Mill Pond in 1769 (*Boston Sunday Globe* 1908:17). If the latter, the speculative bubble burst quickly, since Hurd sold the lot to John Larkin in 1781 for only £750 (Suffolk Deeds 133:213); Larkin, in turn, sold it to Josiah Vose for £825 in 1783 (Suffolk Deeds 163:34). Another eighth of the property was sold by the heirs of William Jackson in 1785 for £137 10s (registered in 1788 as Suffolk Deeds 163:92). The final eighth was sold to Vose in 1788 by Nathaniel Abraham (£137 10s) (Suffolk Deeds 163:55).

In summary, within five years after Joseph Jackson died in 1774, his children had sold three-quarters of the land, which ultimately, after another transaction, was bought by Josiah Vose in 1783. The remaining quarter was sold to Vose in two pieces in 1785 and 1788. Vose's cost for the entire property was £1,100. It is not known who lived on the property for the fourteen-year span from 1774 to 1788.

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The boundaries of the property were given when the heirs of Joseph Jackson sold three-quarters of the undivided property to Hurd in 1779. During the period from 1722 to 1779, approximately 4 ft. was removed from the Back Street side and ca. 40 to 45 ft. was added to the depth of the property, making it ca. 138 ft. rather than 93 ft. The change may have come about during Maycock's tenure, since his will stated that he had improved some of the land on which he stored his wood. On the other hand, he could be referring to minor landscaping of his property to make it more useable. The wharf was not mentioned.

Josiah Vose

After purchasing the land from the heirs of Joseph Jackson and John Larkin, Vose took out a mortgage with Josiah Larkin for the three-quarters of the undivided property for £825 in 1783. Vose paid off the mortgage to Larkin in 1795 (registered in 1790 Suffolk Deeds 168:24-25).

Josiah Vose was described as a gentleman in the two transactions with Larkin (Suffolk Deeds 163:34;168:24) and as a truckman in the two transactions with the Jackson heirs (Suffolk Deeds 163:55;163:92). He was also listed as a truckman who had moved to Dorchester in his 1818 will (Suffolk Probate 26994). In 1773 and 1774, he had the position of scavenger for Boston (Seybolt 1939:351, 357). Since he died at the age of 82 in 1818, he would have been in his early 30s when appointed to this post. His only son, Peter, died in 1803 at the age of 26 and daughter Lucy died in 1804 at age 19. His wife, Ruhamah Vose, died at age 71 in 1814. If the ages at death are correct (as reported in Boston obituaries by the Boston Athenaeum in 1968), Ruhamah was 47 when she gave birth to Lucy. Since this seems unlikely, perhaps Ruhamah's age was over-estimated. Vose also had a daughter named Peggy, who married Zephaniah Spurr, and a daughter, Ruhamah Vose Atkins (Suffolk Probate 26994). Peggy Spurr and Josiah Spurr, her son, who was also a truckman (Suffolk Probate 26994), are the individuals active in dealing with the estate of Josiah Vose. 42

The 1798 direct tax for Vose listed the property as containing both a brick and wooden dwelling, a barn, a wood house, and a chaise house. The "barn, wood house, and chaise house," 198 sq. ft., was two stories, had five windows and was valued at \$600. It is ambiguous whether three separate structures were meant. The house, 1,395 sq. ft., was two and three stories, had 32 windows, and was valued at \$3000. The brick dwelling is not specifically listed. Vose was living on the property with his family and a tenant named Trask at this time (Boston Record Commissioners 1890:204). The 1823 probate inventory included a similar description of the buildings. Vose's estate fronting on Back Street, including land with a wooden house, a brick house, and sheds, was valued at \$8,000.

Josiah Vose left debts that were paid by the sale of his land. These transactions were complicated (Bowditch Papers 14:341-347), and it is not necessary to review them in detail. However, the subdivision of the land in 1825 for the different owners and trustees provides information on where different buildings were located.

Figure IV-3 shows a plan composed by Bowditch (Bowditch Papers 14:336) which introduces a new lot-designation system. The portion of lot 21 along Back or Salem Street that was owned by Maycock and Joseph Jackson is composed of lots A, I, and J (Figure IV-3) and measures almost 79 ft. including a 10-ft.-wide passageway between lots A and I. This dimension is almost the same as that of lot 21 as acquired by Hurd in 1779. Lot 21 also included what is designated as lot B in the interior of the block on Figure IV-3. Lots G and F were originally lot 20, owned by Waters, then Dethrick, then Eustis. The land between the westerly edge of lot B (lots C, D, E, and H) and Pond Street is the result of the filling of Mill Pond by the Pond Street Corporation. Peggy Spurr apparently acquired lots C to E after the creation of Pond Street. When she, her husband, or her father acquired lot F is unknown.

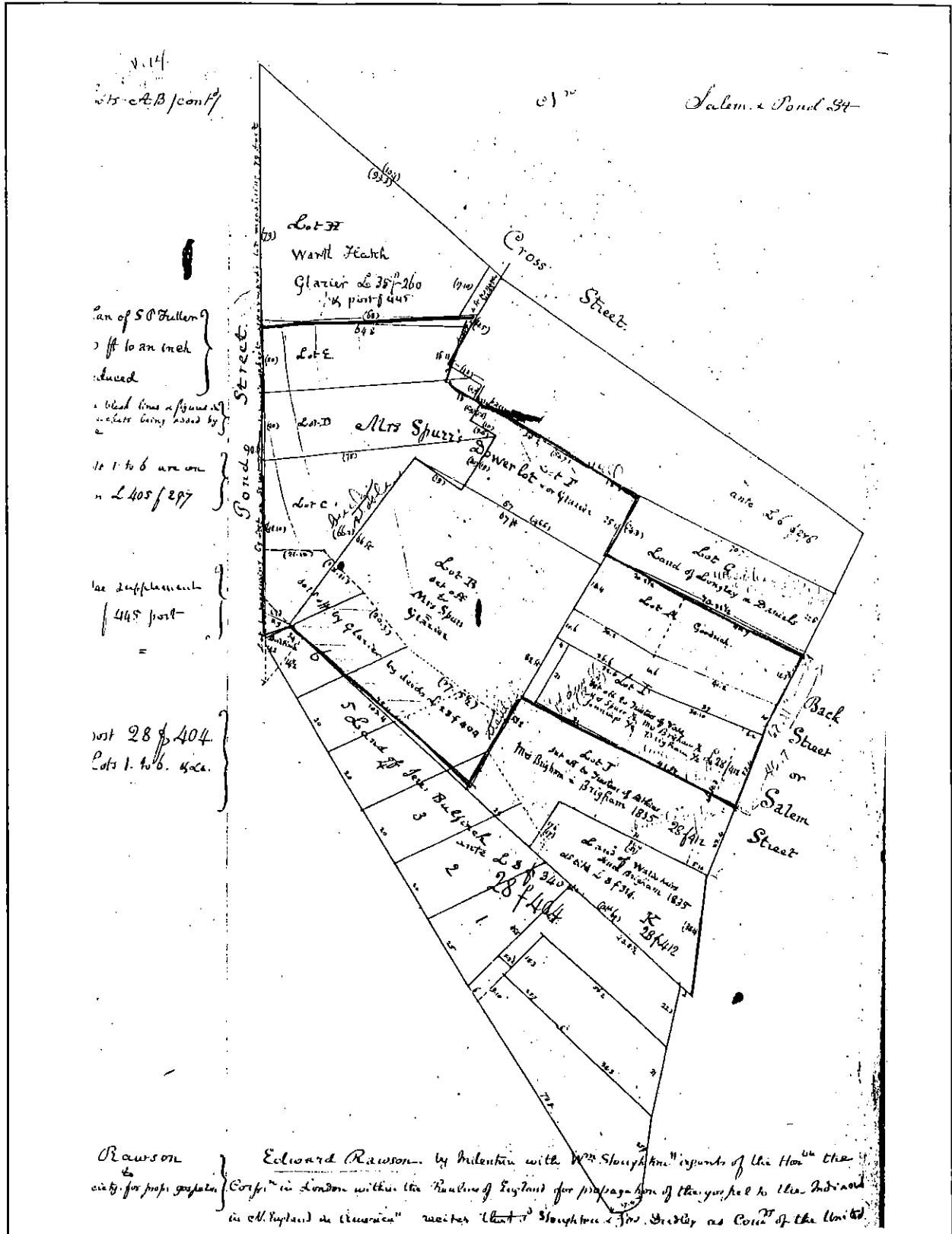


Figure IV-3 - Sketch map of the disposition of Josiah Vose's Estate (Bowditch 14:336; Nathaniel S. Bowditch Collection; courtesy of the Massachusetts Historical Society).

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Lot A (12 ft., 3 ½ in. wide) contained a brick dwelling (Bowditch Papers 14:343) and Lots I and J (each 23 ft., 4 in. wide) each contained a dwelling built of an unspecified material (Bowditch Papers 14:344). When Peggy Spurr, who had reacquired most of her father's land, sold lots A to F and I to Elias Hasket Derby in 1831 (Suffolk Deeds 353:73), it included the brick building (known to be on lot A) and a part of the mansion house on Salem Street. Thus, it seems likely that the "dwellings" on lots I and J were really the wooden mansion house, still divided in half, that had been built over 150 years earlier. Lot B contained stables from the original estate that were located on the north and west edges of lot B (Bowditch Papers 14:344, section of the subdivision "to Peggy Spurr") and also new stables that were being erected near the western edge of lot J (Bowditch Papers 14:344, section of the subdivision "to Holmes and Spurr") by Ruben Davis (Suffolk Deeds 353:73).

B. Mill Pond

The basic history of the Mill Pond or Mill Cove is well known (Whitehill 1968) but will be briefly summarized here. In 1643 Henry Symons, George Burden, John Button, John Hill, John Mylam, and William Franklin received the grant of the cove facing Charlestown and all the marsh surrounding it on the condition that within three years they erect one or more corn mills and maintain them forever (Rutman 1965:193-94; Whitehill 1968:11). Their goal was to dam the cove and construct tidal mills. The dam, also called the causeway, was erected approximately on the location of a narrow strip of intermittently dry land which had been used by Native Americans as a path. They were also allowed to connect Town Cove with Mill Cove through the construction of a watercourse, called Mill Creek, which cut across the narrowest portion of the Shawmut peninsula (the neck of land on which Boston had been established). The creek furnished tidal water for the mills, which included a grist mill, a sawmill, and a chocolate mill at different times. The mills were located at the north and south ends of the dam and at the mouth of Mill Creek.

The proprietors were also required to construct a floodgate 10 ft. wide for the passage of boats into the cove, but how much traffic actually occurred is obscure. Later litigation, in the early 1820s while the Mill Pond was being filled, elicited testimony that there were two gates, one at the north and one at the south end of the dam. The one at the south end was called the "floodgates" in the depositions (see the 1825 and 1826 depositions of Jonas Welsh, who maintained the northern mill for the Boston Mill Company from 1777 and also ran the chocolate mill, as well as other depositions in Suffolk Deeds 265:345-348; 303:185-192, 208-217). Creeks led from the floodgates to the main channel of the Charles River. The creeks were thought to be natural channels originally created by runoff from the adjacent uplands or from the volume of water from the floodgates (deposition of Nathaniel Call in 1826, Suffolk Deeds 303:208). Apparently, the water which drove the mill also exited the mill in the same channel and helped keep the channel open and the bottom hard.

Commercial traffic through the floodgates was not mentioned in the depositions. From the 1770s until the Mill Pond was filled, a time within the memories of the men deposed, the only commercial traffic mentioned was to the wharves outside of, and at the ends of, the causeway, and these were shallow-draft craft such as lighters and rafts. At low tide, only rafts or canoes could travel from the main channel of the Charles River to the wharves and only in the creeks issuing from the floodgates. It is possible, however, that the Mill Pond was the scene of more commercial and boating activity in earlier years. Shipping technology changed during the nineteenth century. Changes in the size and draft of ships required changes in the size of the wharves and their relationships to deep water. Similar changes may have occurred in the eighteenth century.

The marshland acquired with Mill Creek was drained, divided among the proprietors, subdivided by them, and sold as house lots (Rutman 1965:194). None of the names of the proprietors appears on the earliest deeds associated with the lots along the edge of the Mill Pond from Cross Street to lot 22; indeed, some of these lots appear to have been granted to their original owners by the town rather than purchased from individuals. Thus, the early proprietors were not directly involved in the development of the shoreline of the site.

By 1769, the relationship between the proprietors and the town became difficult (*Boston Sunday Globe* 1908:17). It was years since the gristmill on Mill Creek had served for the grinding of grain and the structure had actually fallen down in the last few years. The town decided that the proprietors were not carrying out the terms of their charter, and a committee composed of John Hancock and James Otis was appointed to look into confiscating this potentially valuable land in lieu of the revenues that the city might have gained if the mills had been operating. Nothing was done at that time, however. It seems likely that grinding grain was not an economically important enterprise for the town, which had been getting along quite well without the mills. This initial proposal to confiscate the Mill Pond land may have been the first stirring of the idea of filling Boston's coves that started in earnest in the early 1800s.

It was noted in 1795 that the Mill Pond was silting in and that the shoreline had gradually advanced 50 ft. Furthermore, in 1798 the pond was said to be a nuisance since the floodgates were no longer opened to let in fresh water. Perhaps the proprietors were trying to foster the development of mud flats on which they could build, since such a development was under consideration for the west cove of the Back Bay, where Boston neck widened as it approached Roxbury (Whitehill 1968:74).

In 1803, the proprietors of the Mill Pond offered to sell lots in the mud flats and to lay out streets. This prompted a discussion of filling the Mill Pond at a town meeting in 1804, and a committee was appointed to examine the question. Before ten days had passed, the proprietors had obtained an act permitting the formation of the Mill Pond Corporation. The town voted later that year to fill the Mill Pond and to negotiate with the "supposed proprietors" (Whitehill 1968:79). The extended negotiations between the town and the Mill Pond Corporation resulted in an agreement in 1807 that the Mill Pond would be filled at the expense of the corporation, that the Mill Creek would be kept open and extended through the filled pond to the Charles River, that a square of land one acre in size would be reserved for the use of the town, and that an eighth of the made land would belong to the town in fee simple. Other provisions addressed matters related to sewers, accommodations for the Baptist churches, construction of bridges over canals, and a street plan following that designed by Charles Bulfinch (Figure IV-4; Suffolk Deeds 223:33-36).

The agreement also said that the "filling up of the Pond shall be made with such materials as the Selectmen approve." The selection of this material led to further controversy, starting in 1807, which centered not so much on the kind of fill as on where it would come from. The heirs of John Hancock, represented by John Hancock and Samuel Spear, wanted to cut down Beacon Hill. Eventually, the gravel from the hill was the primary component of the Mill Pond fill along with "oyster shell, rubbish, and street sweepings" (Whitehill 1968:81,84) and "oyster shells, dry-dirt and the debris and street offal collected from all parts of the peninsula" (Shurtleff 1871:113).

However, the portion of Mill Pond that was filled at the Mill Pond site was not filled by the Mill Pond Corporation, but by the Pond Street Corporation. The Pond Street Corporation was incorporated in 1806 to construct a direct street route from the Charles River Bridge to Charlestown at the northern or eastern end of the causeway to Hanover Street. It more or less follows the course of modern Endicott Street.

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The Pond Street Corporation had completed its work by 1809. An 1808 deed ceded to "the Inhabitants of the town of Boston, and the Boston Mill Corporation" the rights to a piece of land 15 ft. wide on the easterly side of Pond Street "in consideration of the sum of five dollars" (Suffolk Deeds 227:72). One-eighth of this parcel was assigned to the inhabitants of Boston and the rest to the Mill Pond Corporation. Since this division duplicated that in the town's agreement with the Mill Pond Corporation for filling the Pond, this transaction can be interpreted as acknowledging the rights of the Mill Pond Corporation to some compensation for the land filled by the Pond Street Corporation. Given that Pond Street cut across the pond (Fig. IV-4), it seems likely that the Pond Street corporation retained rights to sell all the land it made except for this 15-ft. strip.

Thus, the land within the project area was filled well before the remainder of the pond. It also seems to have been developed before the rest of the Mill Pond property. Filling of the Mill Pond was completed by 1822, and land was offered for sale at public auction in 1823 (*Boston Sunday Globe* 1908:27). Although the newspaper article, published on the hundredth anniversary of the start of the project, said that the property filled up rapidly after the sale, a report of an 1827 visit to the area said that Pond Street was the frontier of development at that time. The street was "well made, and containing brick blocks, a hotel and good wooden houses." Other streets, except for Traverse and Causeway, were said to be "in embryo" (Johnson 1895:73). Real development occurred with the coming of the railroads in the 1830s (Whitehill 1968:84).

C. Summary

1. Land Ownership and Occupancy

During the Plantation period (1620-1675) there were three owners of the property: Lowe, a wheelwright; Shoare, a tailor; and Waters, a planter, husbandman, or yeoman (Table IV-1). It is unlikely that either Lowe or Shoare lived on this property. Shoare may have begun building the first residence on the lot and Waters apparently finished it. The 1668 mortgage indicated that Waters was living on the property. Although the later record of a grandson affirms that Waters had a family, its composition is unknown. The two-room house that Waters completed or built seems to have been occupied by two households: his, in the southern part, and another. The other household may have been related to his. Similar arrangements with two related families living in the one house occurred later in the history of the lot. On the other hand, the occupant of the other half of the house may have been a tenant. No wharf was mentioned in the land transfer documents but a dock did appear in the earliest one between Lowe and Shoare.

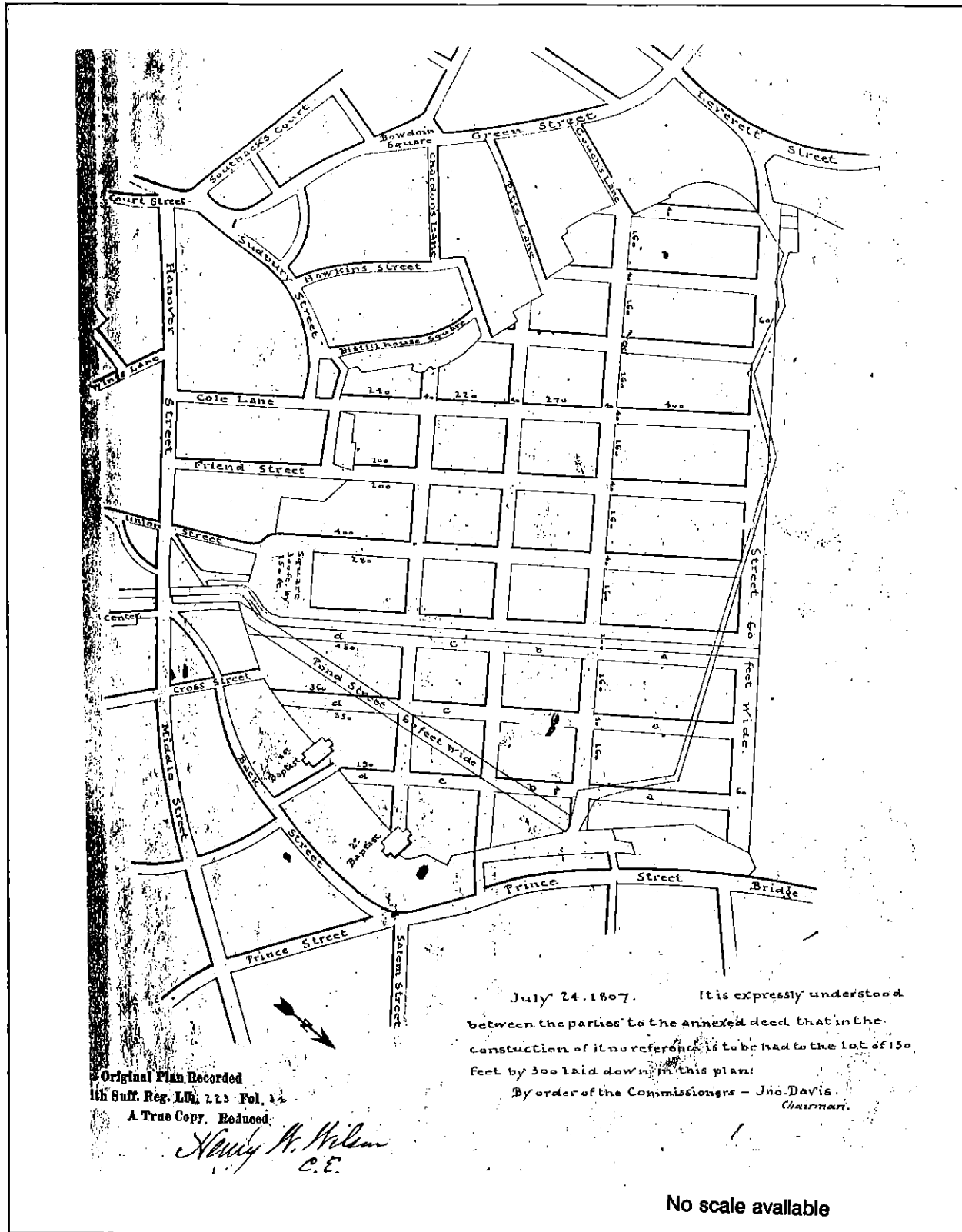


Figure IV-4 - Map of the original street plan for Mill Pond (Suffolk Deeds 223:34).

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Table IV-1. Owners and Occupants of Lot 21, Mill Pond Site (BOS-HA-14).

OWNER	OCCUPANT	DATE	PERIOD
Lowe, John	Probably none	?-1651	Plantation
Shoare, Samuel	Probably none	1651-1653	Plantation
Waters, William	Waters family	1653-before 1676	Plantation
Rawson, Edward	Probably tenant	at least by 1676-1682(?)	Colonial
Society for the Propagation of the Gospel, William Stoughton and Samuel Sewell	Tenants John Farnham and Cornelius Bennington	1682(?) - 1709	Colonial
John Eustis (father)	Eustis family and tenant, Adams, a blockmaker	1709-1722	Colonial
John Eustis (son)	Probably tenant	1722-1723	Colonial
Maycock, William	Maycock family, Jackson family, and possibly tenant before Jackson	1723-1771	Colonial
Jackson, Joseph	Jackson family, slaves, and tenant, B. Davis	1771-1774	Colonial
Jackson heirs	Unknown	1774-1788	Colonial/ Early Republic
Hurd, John	Unknown	1779-1781	Early Republic
Larkin, John	Unknown	1781-1783	Early Republic
Vose, Josiah	Vose family and tenant, Trask	1788-1818	Early Republic
Spurr, Peggy, and other Vose heirs	Tenants, Ruben Davis	1818-1831	Early Republic

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The beginning of the Colonial period (from ca. 1675 to 1709) sees the property owned by prominent members of Boston society: Edward Rawson, the secretary of the colony, and William Stoughton and Samuel Sewell, representatives of the Society for the Propagation of the Gospel to the Indians in New England. The property, which sold for a price higher even than the average for commercial properties, was probably occupied by tenants throughout this period. There is no documentary evidence that Indians occupied the property. The 1709 deed included a wharf as well as two dwellings and a backside garden in its description of the property. The dwellings were described as a "messuage or tenement" and "tenements." The 1693 document reported only one "messuage or tenement" and the earlier 1668 deed, only a dwelling. The "messuage or tenement" was probably the house on the 1707 plat. The other building, called "tenements," was probably a new building occupied by a tenant.

An artisan, the housewright John Eustis, bought the property in 1709 when he was 50 years old. He was still married to his first wife and they had eight children, four of whom had survived childhood. The language describing the property in the 1715 mortgage is basically the same as that in the 1709 deed, but includes language ("in the present tenure and occupation of one Adams, blockmaker") that implies that the property was solely occupied by a tenant. Although one could assert that providing in his will that his wife could live there as long as she remained a widow implies that Eustis lived there also, it would not be a particularly strong argument. If Eustis did live there, he probably occupied it with his second and third wives. The will does not imply that either of them had children, although it is possible that Mary Eustis, his third wife, had a son, Joseph Eustis, who was excluded from the will and would have been younger than two years old if born during her marriage to John Eustis.

In the 1722 probate inventory, Eustis's property is described as having two parts: a mansion house and land and a house, land, and stable. This is the first mention of a stable. A stable implies either relative wealth or a commercial activity involving horses. In the former instance, the horses could have been used simply to draw the family's carriages. Alternatively, the family could have started a stabling business which eventually, in the early 1800s, became the primary function of the site, or the horses could have been used in hauling goods from the wharf to other sections of town. Since Eustis was a housewright, the latter possibility does not seem reasonable; however, his son was a brazier and possibly a merchant who may have used the wharf for landing goods and the horses for transporting them.

When the elder Eustis died in 1722, the property was passed to his son, John Eustis, who sold it the next year. Although there is no evidence that the younger Eustis lived on the property, he began a one-hundred-year sequence of ownership of the property by braziers and truckmen. As discussed, both braziers and truckmen have been identified as merchants.

When Eustis sold the property to William Maycock, another brazier, in 1723, Maycock was 35 years old. His will indicates that he was living on the property in the southern half of the house and that his son-in-law Joseph Jackson was living in the northern half. The southern half of the property would pass to his oldest son and the southern section to his younger son under certain conditions. The Bowditch Papers (14:340) suggest that Maycock's two sons were approximately 50 years old, and without children, when Maycock died. These sons and their sister probably grew up on the property. Exactly when Jackson came to live in the house is unknown, but it seems likely that his eight children also were resident on the property.

Jackson's household was further enlarged by the presence of six slaves, listed in his 1774 probate inventory. Taking into consideration their names and value, they seem to include three young men, two older individuals, possibly a

man and a woman, and one individual of undetermined sex, perhaps a woman, who was seen as intermediate in value between the older and younger slaves.

Jackson's inventory also indicated that the second building was brick and that 11 horses and a milk cow probably inhabited the stables. The four sheds on the property may have contained the chaise, the wagon, trucks, and cart wheels. The stables, horses, and vehicles suggest two interpretations: (1) These transportation items could have supported Jackson's occupation as a truckman if he engaged in the transportation of goods. It is also possible that instead of being in domestic service the slaves supplied the labor for his business. (2) The land could have been used as a commercial livery stable or transportation business separate from Jackson's business as a truckman. The name of the tenant, B. Davis, recalls the name of the livery stable developer, Ruben Davis, who was on the property in 1831. However, since the two names appear 57 years apart, this may be coincidence.

After Jackson died, the property was in transition for 14 years until 1788, when Vose bought the final piece of the property. The occupants of the site through this time are unknown. Probably there was at least a tenant living there. Other possible occupants include Abigail Jackson, Joseph's widow, and Josiah Vose, who may have taken possession of the property in 1783 when he purchased three-quarters of the property from Larkin. Vose had a small family, perhaps only three children, probably already started by the time he moved onto the property.

Vose moved to Dorchester during the nineteenth century and died there 1818. By 1806, the nature of the property had changed. Instead of being isolated on the edge of town, at the edge of Mill Pond, the back of the property now faced Pond Street, which underwent rapid development. Although stables are not mentioned in the 1823 inventory, they still existed in 1825 during the subdivision of the property as did a new commercial stable.

Thus, from 1722 to 1774 the lot's residents generally included at least one family, headed by a brazier or a truckman, in the main house, and one tenant. From the mid 1700s, after Maycock's daughter married, two merchant families, the Maycocks and Jacksons, and eventually slaves resided on the lot. After a period of 14 years in which it is unclear who was occupying the property, the Vose family and a tenant household lived on the site. Probably sometime after the completion of Pond Street in 1806, Vose and presumably his family moved to Dorchester, leaving the property to tenants. The transformation of the rear portion of the property into a commercial stable began by 1825 and was completed in 1831, while the front of the property on Salem Street remained residential.

2. Property Boundaries and the Existence of the Wharf

The property boundaries imply that the property was expanded into the Mill Pond between 1723 and 1779. The property that Shoare bought in 1651 was a piece of land only 30 ft. wide along Back Street with no depth given. When Waters bought the property in 1653, it had been expanded to 66 ft., but again the depth is not mentioned. However, when Waters mortgaged it in 1668, the depth was 100 ft. and the side along Back Street was 100 ft. also. As discussed above, the mortgaged property cannot have been the whole of lot 21, as it included only half of the house. When the whole property was transferred from Rawson to Stoughton, a set of dimensions was established that changed little until the early 1800s.

On the Back Street side of lot 21, the width varied from 73 ft. 5 ½ in. (1693) to 69 ft. (1779), to 79 ft. 1825. The width on Mill Pond was 73 (1693) or 66 ft. (1779), a loss of 7 ft. In 1825 the width on the side near Pond Street was still 66 ft. Measurements of the depth from Back or Salem Street on the south side of the lot are complicated by

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various changes of direction and angles of the property line and do not need to be discussed. The north side of the property, however, was a straight line and increased from 93 ft. to 138 ft. between 1723 to 1779. This dimension remained the same in 1825. Thus, the only major change to the depth dimension of the property from 1668 to 1779 was the addition of approximately 40 additional feet to the depth of the lot. This addition went out into Mill Pond and took place before Pond Street was built.

The information on the dimensions of the property and the reference to a wharf in the land transactions implies that the wharf may have been in existence as early as 1668. The first deed that includes mention of both the wharf and a depth dimension for the property is the 1709 deed. This dimension of ca. 95 ft. is approximately the same as the 100 ft. mentioned in Waters' mortgage to Lynde in 1668, implying that the wharf was in existence at that time. Whether the dock mentioned in 1651 was the same as the wharf mentioned in the 1693 Rawson-to-Stoughton deed is uncertain. The different uses of the terms "dock" and "wharf" may be significant. The dock, a wooden platform over water, may have been transformed into a wharf, a filled structure attached to the land, during Waters's tenure between 1651 and 1668. The size of the property remained the same at least from 1668 to 1722. Although two property transactions, the Waters mortgage to Lynde (1668) and Rawson's sale to Stoughton (1693), do not mention the wharf, it seems probable that the wharf was in existence throughout this period. The wharf is not mentioned again after Maycock's 1722 mortgage but it is likely that, as a made-land feature, it continued in existence. By 1779, an additional 40 ft. had been added to the lot, but whether this was an extension of the wharf or the construction of a dock is unknown.

Map evidence of the wharf is scarce. The 1775 Page map shows this section of the Mill Pond edge as straight with squared corners to the east and west from the edge of Mill Creek to Cross Street (Fig. IV-5). This is distinct from the treatment of the other sections of the shore, indicating the existence of a made-land edge by this date. The 1722 Bonner map could also be interpreted in this fashion, although not as clearly (Fig. IV-6). The various versions of the Bonner map, modified from the original throughout the eighteenth century, show no changes in this portion of the map. Thus, the area from Mill Creek to Cross Street, at least, seems to have been straightened and filled by 1722. The small scales on the Bonner maps and the Page map make comparisons of the distance from Back Street to the edge of the Mill Pond unreliable.

In summary, the deed information is interpreted as indicating that a wharf was in existence from 1668 on. Both the Bonner and the Page maps suggest that the edge of the Mill Pond from Mill Creek to Cross Street was straightened and probably filled. If the Bonner map is interpreted correctly, then this event occurred at least by the early 1700s and extended beyond the boundaries of the Mill Pond archaeological site. It is less clear if the additional extension of the property between 1722 and 1779 was the result of the construction of a dock or the extension of the wharf. This interpretation will be addressed by the archaeological data.

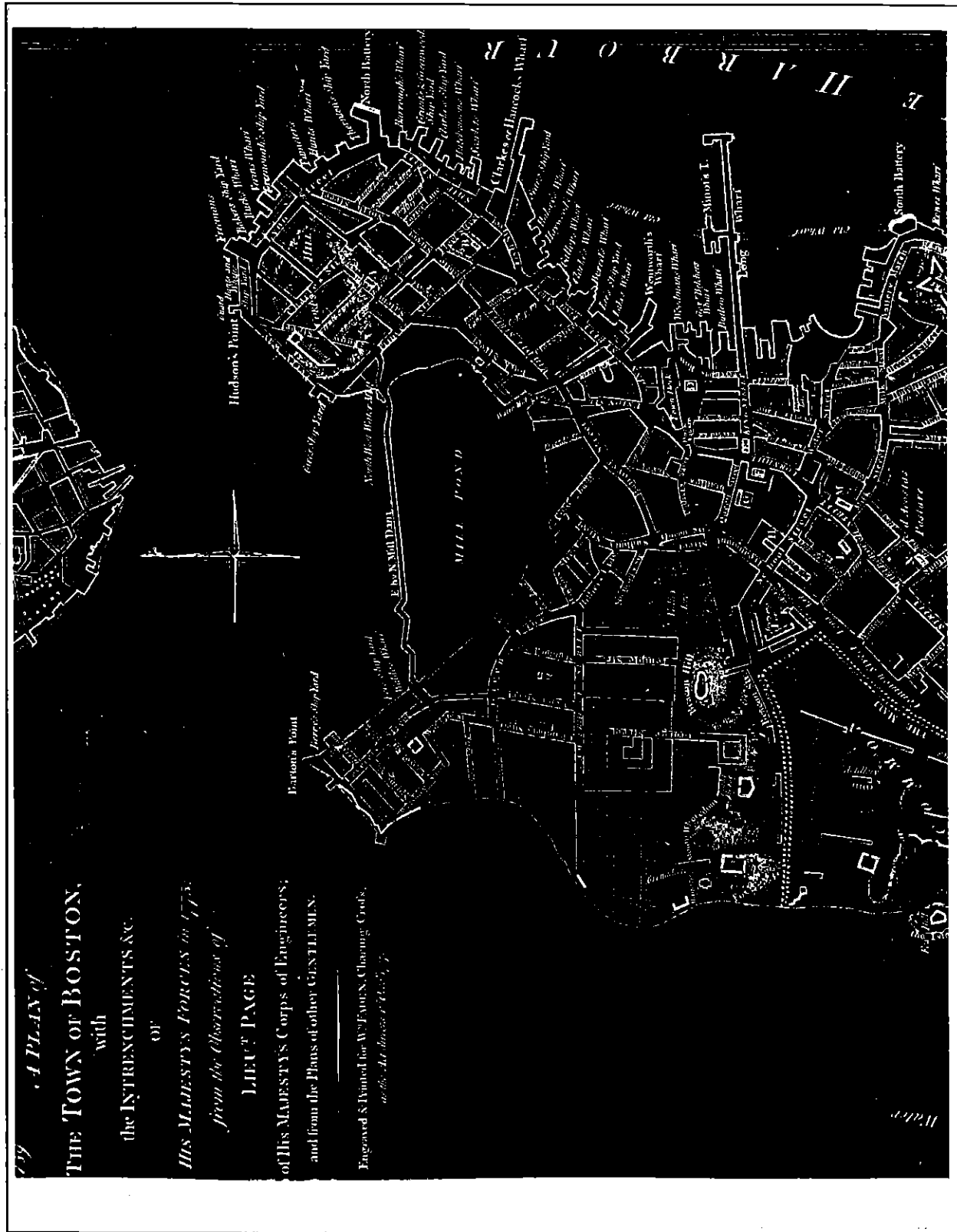


Figure IV-5 - Detail of *A Plan of the Town of Boston* (Page 1777).



Figure IV-6 - Detail of The Town of Boston in New England (Bonner 1722).

V. ARCHAEOLOGICAL FIELD RESULTS

A. Introduction

The archaeological deposits at the Mill Pond site chronicle the use of this location by Bostonians for approximately 350 years. Over this time span, the site area has been transformed from its original configuration as the shore of the Charles River estuary to a portion of Boston's transportation infrastructure. In general, it has only been recently within urban areas that construction activities have destroyed all archaeological evidence of the past. Prior to the construction of large buildings with deep foundations and underground automobile garages, designed to alleviate parking congestion, it was common that successive building episodes actually aided in the development of archaeological sites. In the past, a surface was simply built upon; if something occupied this surface the aboveground features were removed or spread across the ground surface. In this fashion, stratified archaeological sites gradually developed. The construction of the Central Artery in the 1950s is an example of this process. When buildings were removed, the foundations, cellars, streets and yard areas were not destroyed, but were often sealed by asphalt for parking lots. This section presents the field results and the stratigraphic analysis of BOS-HA-14. The stratigraphic analysis in conjunction with artifact dating and historical data guides the analytical process by defining data sets that are then used to address the research topics.

Excavation of stratified archaeological deposits has often been compared to cutting away layers of a cake or an onion. In this analogy, the intrepid archaeologist simply excavates downward, recovering artifacts until a new layer is exposed. If this analogy were to be extended to urban archaeological sites, then their excavation must be likened to a layer cake that has been stepped on, peppered by shotgun pellets, infested with burrowing insects, exposed to the weather, and partially eaten. Viewed in this fashion, the task of putting the stratigraphic house of an urban site in order can be a harrowing experience.

At its most simplistic, the examination of archaeological stratigraphy is obvious: if Unit of Stratification 2 lies over Unit of Stratification 1, 2 was deposited after 1. Furthermore, each unit of stratification is dated to a time after the beginning date of manufacture (TPQ) for the most recent artifact found in it (Noël Hume 1975:68). Unfortunately, natural and human formation processes cause disturbances that result in the displacement of artifacts from their original location and the obfuscation of the stratigraphic sequence.

The by-product of human activity, the archaeological record, documents human activities at a given location through time. The archaeological record for each site thus reflects the historic activities and formation processes unique to the site. Within a site, discreet successive occupations or activities act to create a lasting record of past events, evidence of which is contained within a site's stratigraphy. That stratigraphy can consist of successive layers of soil and features (i.e., foundations, pits, wharves, post holes, wells, etc.). The combined interaction of natural and cultural formation processes often results in an archaeological site's consisting of complex stratigraphy including numerous features and artifacts. Typically, urban sites contain complex stratigraphy that reflects the intensive use of a small space over time (Rothschild and Rockman 1982). Furthermore, social and cultural practices often confine certain activities to specific locations within an area. Thus, archaeological resources often record a wide range of human activity within a compact space that is reflected in a complex stratigraphic sequence.

The most extensive and comprehensive approach to examining complex stratigraphic sequences such as these has been offered by Harris (1989). The principles of archaeological stratigraphy presented emphasize that the

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stratigraphic analysis results in the sequential ordering of units of stratification, based on their physical relationships, without reference to artifacts within individual strata (Harris 1989:xi,120). Thus the principles of archaeological stratigraphy are constant from site to site and are divested from the activities and processes that make each site unique. There are four fundamental laws of archaeological stratigraphy that determine the relationship of a unit of stratigraphy. These laws are the Law of Superposition; the Law of Original Horizontality; the Law of Original Continuity; and the Law of Stratigraphical Succession (Harris 1989:29-39). By applying these laws to the deposits being excavated, archaeologists can construct a sequence, known as a Harris matrix, that records the stratigraphic history of the site.

The Law of Superposition states that for "a series of layers and interfacial features, as originally created, the upper units of stratification are younger and the lower are older, for each must have been deposited on, or created by the removal of, a pre-existing mass of archaeological stratification" (Harris 1989:30).

The Law of Original Horizontality asserts that "any archaeological layer deposited in an unconsolidated form will tend towards a horizontal position. Strata which are found with tilted surfaces were originally deposited that way, or lie in conformity with the contours of a pre-existing basin of deposition" (Harris 1989:31).

The Law of Original Continuity indicates that "any archaeological deposit, as originally laid down, or any interfacial feature, as originally created, will be bounded by a basin of deposition, or may thin down to a feather-edge. Therefore, if any edge of a deposit or interfacial feature is exposed in a vertical view, a part of its original extent must have been removed by excavation or erosion, and its continuity must be sought, or its absence explained" (Harris 1989:32).

Finally, the Law of Stratigraphical Succession states that "a unit of archaeological stratification takes its place in the stratigraphic sequence of a site from its position between the undermost (or earliest) of the units which lie above it and the uppermost (or latest) of all the units which lie below it and with which the unit has a physical contact, all other superpositional relationships being redundant" (Harris 1989:34).

The data-recovery field investigations were designed to record stratigraphic relationships between units of stratification under the Harris Matrix system (refer to section III, Methods). Units of stratification include soil matrices, surfaces, and features. The Harris system recognizes only three relationships between units of stratification: no direct stratigraphic connection; superposition; and correlation (Harris 1989:36, 140). If units of stratification show no direct stratigraphic relationship, display no interfaces, and cannot be linked, then they have no direct stratigraphic connection. Superposition of units of stratification refers to one unit of stratification over another, such as an activity surface over subsoil. Units of stratification are said to be correlated if they represent deposits that were once part of a whole. An example of correlation would be a yard surface into which a foundation was built, where the foundation divides the yard surface into separate but related stratification units. The use of the Harris system of stratigraphic principles assumes that each stratigraphic context is deposited at one time and should receive one stratigraphic referent, the Harris number (HN).

Analysis of stratigraphic information gathered during field investigations results in the creation of a site matrix. The site matrix is a diagram that illustrates the physical stratigraphic sequence of the site (Figs. V-1, V-2, and V-3). The site matrix diagram is a flow chart that graphically displays stratigraphy from initial occupation to the present, with the stratigraphic position of each unit of stratification identified. Initially, this diagram is based on physical

relationships between units of stratification (as defined above) and does not utilize documentary or artifact data. When the physical relationships have been established, the phasing or periodization of the stratigraphic sequence can be undertaken (Harris 1989:105-119). The phasing of the units of stratification within the Harris matrix system is the grouping of stratigraphic matrices into aggregates reflecting periods of occupation, activities, or time-periods. Although this can be attempted in the field, site phasing relies on information from the material culture and the historical record. Data from artifact analysis and from background research contribute to the transformation of the site matrix from one showing only physical relationships to one illustrating both physical and temporal aggregates. The dates provided by artifacts (mean ceramic dates or MCDs, *termini post quem* or TPQs, and pipestem bore dates or PSBD), ranges of occupation inferred from the historical record, and site stratigraphy provide the framework for the phasing. The phasing of the Harris numbers into aggregates provides the analytical units for contextual analyses. The Harris Matrix diagram unites units of stratification, artifact information, and documentary research into a single sequence for the site. The site matrix provides a testing pattern deduced from the stratigraphy of the site, against which all other contextual, artifactual, and other analyses of the site can be viewed (Harris et al. 1993:4).

The Harris system is most advantageous when large contiguous blocks of a site are excavated. If, as in the example of the Mill Pond site, a combination of hand and mechanical excavation methods and noncontiguous excavations is undertaken, construction of the site matrix becomes a more complex and tedious undertaking. In addition, the excavation of the site and its subsequent analysis are based on a sample from the site. This strategy in itself will make the analysis of the stratigraphy difficult because most of the site area is left unexcavated. At the Mill Pond site, blocks of excavation units were placed at several locations and connected by trenches. Furthermore, several unexcavated areas were stripped in order to look for features. Several excavation units bounded trenches, thereby sharing a common profile. In theory, the stratigraphic sequence should have been easily identifiable across the site and, in a general sense, this was true. The large profiles allowed for the identification of many units of stratification as well as the construction of the overall matrix of the site. However, the methods used provided a limited exposure of the units of stratification and not all of the strata exposed within the trenches could be tested through unit excavation. Consequently, while superpositional relationships of strata could be noted, difficulties arose in the process of phasing the site matrix because artifact samples were not collected for several strata. Finally, mechanical stripping identified several features, but the inherent destructiveness of this method made the placement of these features within the site matrix difficult. Nevertheless, it should be noted that these features would not have been identified otherwise and that they postdated the period of significance.

Formation processes create archaeological deposits. Although examination of the processes is not necessary to produce a Harris matrix, such examination is useful in describing and interpreting the archaeological deposits. This is especially true on urban sites where intensive use often displaces artifacts from their original contexts. Both natural and human processes interact to create a record of human occupation at a particular locality. The examination of formation processes contributes to the refinement of a deposit's date and provides insight into the types of artifact analyses that are appropriate.

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MILL POND (BOS-HA-14)
SITE MATRIX

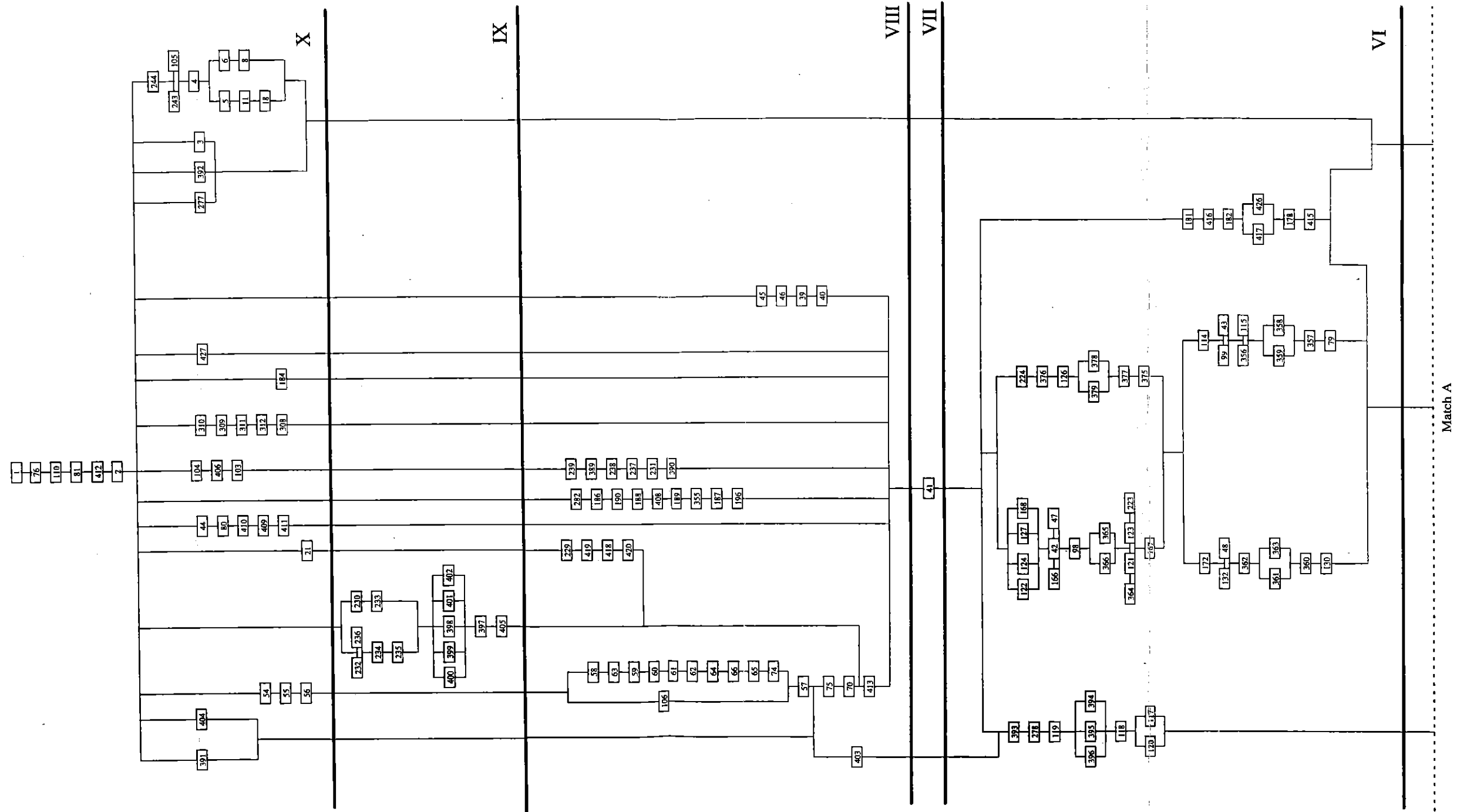


Figure V-1 - Mill Pond (BOS-HA-14) site matrix, Phases X through VI.

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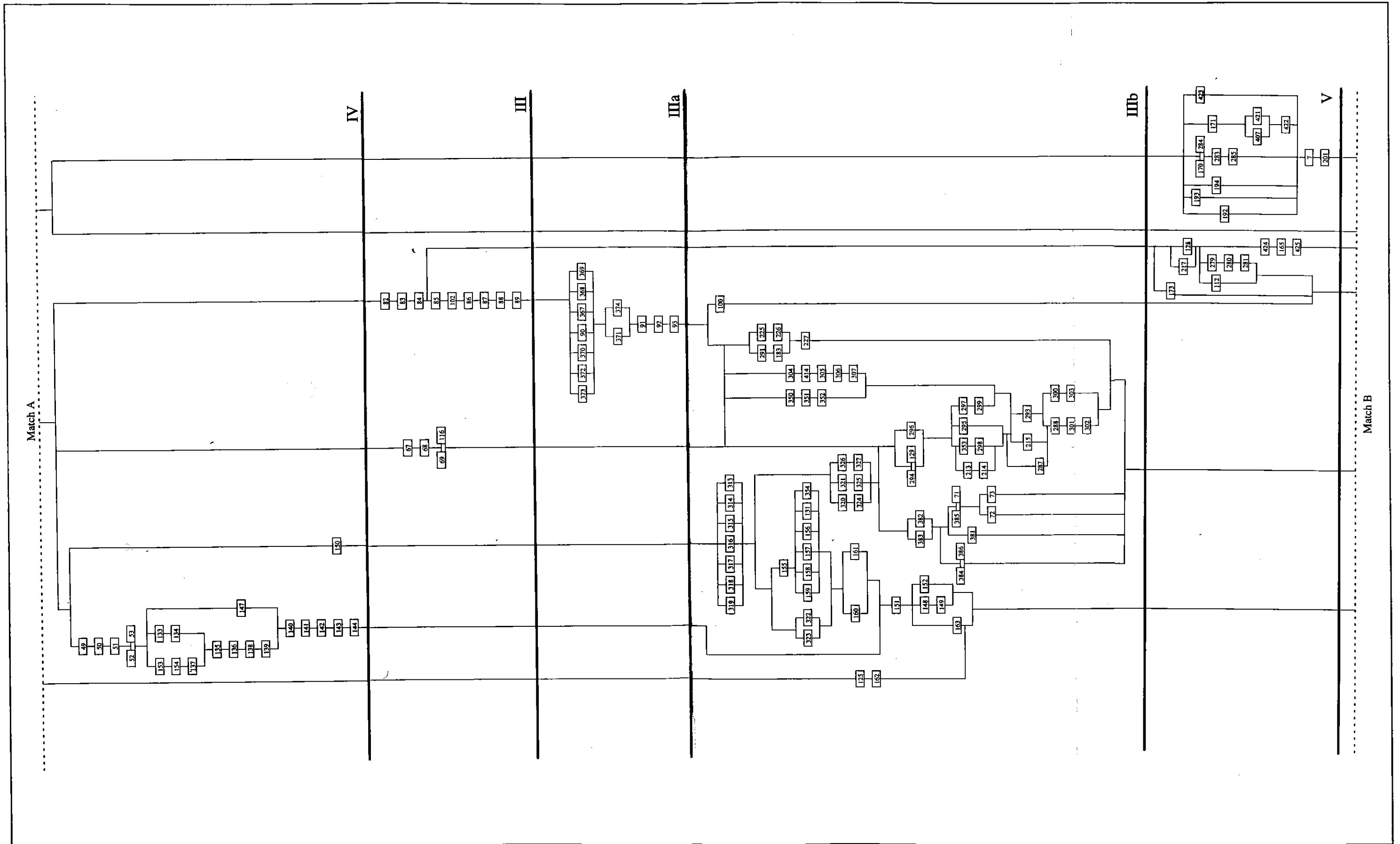


Figure V-2 - Mill Pond (BOS-HA-14) site matrix, Phases IV through V.

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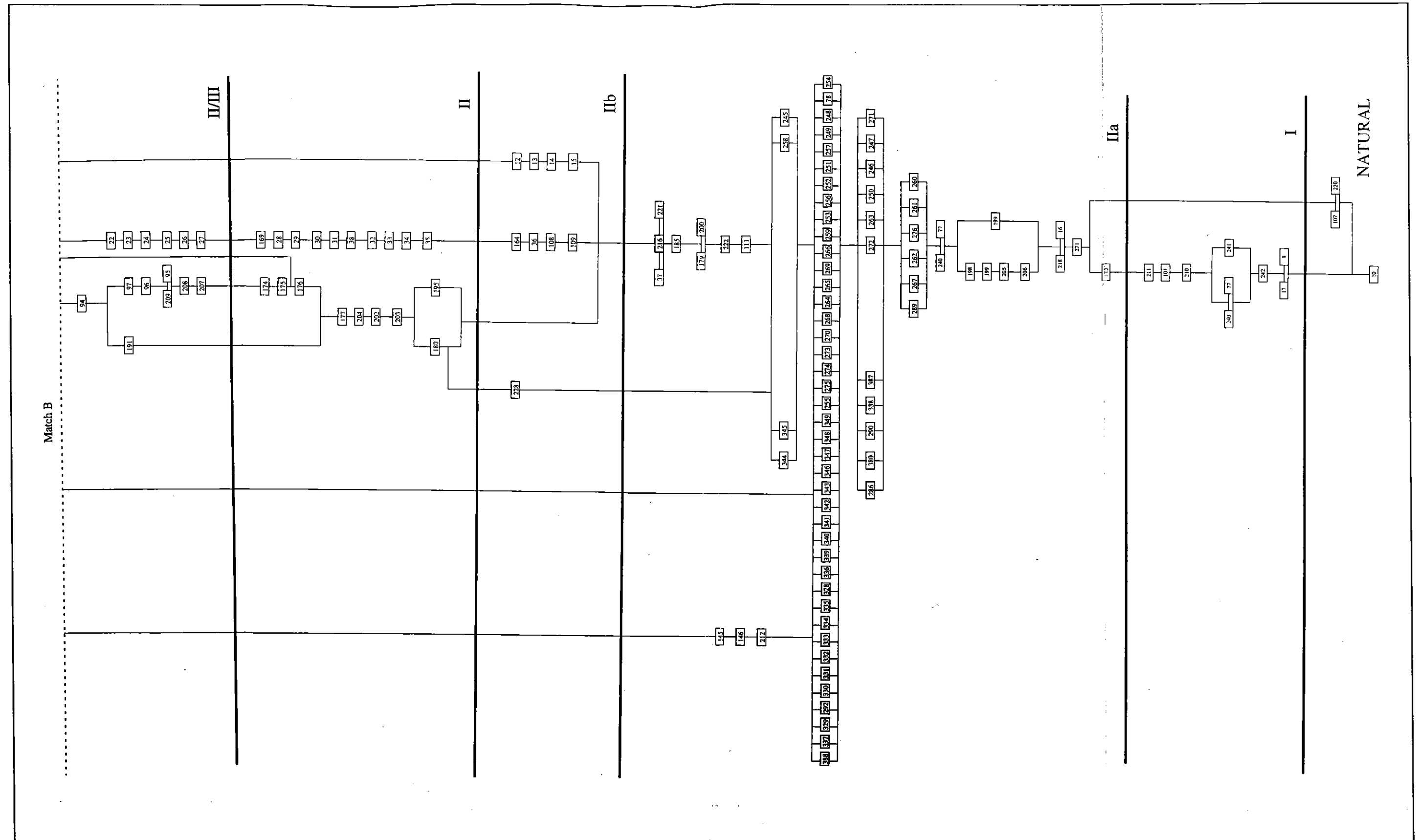


Figure V-3 - Mill Pond (BOS-HA-14) site matrix, Phases II/III through Natural.

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Schiffer (1987) has defined four culturally produced formation processes (cultural deposition, disturbance, reclamation, and reuse) that contribute to the development of the archaeological record, while Harris (1989:121-122) has defined three types of artifact remains (indigenous, residual, and infiltrated). At the Mill Pond site, cultural deposition and disturbance were the processes responsible for the majority of the archaeological deposits. However, natural formation processes, principally sedimentation associated with Mill Pond, also contributed to the site matrix.

Cultural deposition is the discard of objects, creating a unit of stratification that contains indigenous artifact remains. In other words, in the absence of deposit-altering variables, the artifacts within the deposit should date to the time the deposit was laid down. Refer to section V.B.7 Phase IIIa, for an example of this condition.

Disturbance processes create, modify or move archaeological resources; however, in contrast to the reclamation process, artifacts are not removed from their archaeological context. Many activities associated with construction are disturbance processes (for example, the excavation and filling of a builder's trench). The movement of artifacts can be vertical, horizontal, or both. Disturbance processes, in general, move objects vertically within the stratigraphic sequence of the site. As a consequence, objects from earlier deposits (residual remains) are introduced into units of stratification dating to later occupations of the site.

Reclamation is the reintroduction of archaeological resources from their archaeological context into another context, and reuse is the retention of an object that would have otherwise been discarded or replaced. Reclamation and reuse processes contributed a great deal to the development of the stratigraphic sequence. The reclamation and reuse processes are readily apparent at the Mill Pond site. Units of stratification are often reclaimed and then used for construction fills or landfills (Schiffer 1987:111-114). These processes cause the context of the artifacts contained within such deposits to change. An example is the Mill Pond fill (section V.B.10; Phase IV). Objects from later occupations (infiltrated remains) can be introduced into earlier deposits through a variety of processes, both cultural and environmental. Disturbance processes cause the majority of residual remains, while environmental processes are the primary deposition agents creating infiltrated remains.

The preservation of artifacts, to an extent, is determined by exposure or lack of exposure to particular environmental factors. Together with cultural formation processes, environmental formation processes determine which archaeological resources decay and which are preserved. The environment affects artifacts and features in the ground. Pedoturbation (soil mixing caused by several natural processes) results in the movement of artifacts within an archaeological site (Schiffer 1987:206-217; Wood and Johnson 1978). Environmental factors move artifacts both vertically and laterally. Vertical movement can result in the upward (residual) or downward (infiltrated) migration of artifacts, creating difficulties in evaluating the date of any particular unit of stratification. Lateral movement can make recognition of patterns resulting from localized behaviors impossible.

B. Mill Pond (BOS-HA-14) Excavation Results

Significant deposits excavated at the Mill Pond site dated to the Plantation (1620-1675), Colonial (1675-1775), and Early Republic periods (1775-1830). However, units of stratification dating to the Early Industrial (1830-1870), Late Industrial (1870-1915), Early Modern (1915-1940), and Modern (1940-present) periods were also encountered. Excavations recorded a complex stratigraphic sequence that included 427 units of stratification, which in turn were grouped into 15 phases. The area available for excavation was approximately 4,200 sq. ft. (390 sq. m.) (Fig. V-4). The data-recovery excavations were the final step of a three-step archaeological project that included Phase I

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research and Phase II site examination. The results presented in the data recovery build upon and refine the interpretations and insights provided by the previous research. It is inherent in the archaeological process that the increased exposure provided by excavations and the artifact analysis afforded by data recovery excavations should alter or even refute earlier findings and interpretations. Such is the case with the Mill Pond site. As stated in the Methods section (III) the proposed placement of excavation units was modified as field work progressed and the stratigraphic matrix of the site began to unfold.

Phase I research (Elia and Seasholes 1989:138-141) used cartographic resources to define areas likely to contain potentially significant archaeological resources. Historic maps provide insight into areas that are likely to be disturbed by building foundations and cellars, as well as areas that have remained relatively free of construction through time. The Phase II site examination (Elia et al. 1989:21-27) at the Mill Pond site identified several resources dating to the Colonial (1675-1775) and Early Republic periods (1775-1830) as well as resources dating to the nineteenth- and twentieth-century occupations of the site. Only the deposits dating to the Colonial and Early Republic periods were considered eligible for the National Register under Criteria C and D and recommended for Phase III data recovery. The Phase II field investigations demonstrated that the project area contained structural foundations, a wharf structure, wharf activity surface, Mill Pond fills, a cobble pavement, and stratified deposits that were primarily dated before the 1830s. However, deposits from later occupations, including those of a nineteenth-century stable and twentieth-century parking garage, were also present.

Data-recovery excavations were concentrated in the former nineteenth-century stable lot. In general, the site formation processes created by the cultural landscape and urban settlement patterns of the block during the nineteenth and twentieth centuries had allowed for the preservation of stratigraphic deposits from earlier occupations. However, archaeological deposits from the nineteenth and twentieth centuries were also present and contributed to the stratigraphic matrix of the site. The modern cultural landscape offers few clues to the nineteenth and early twentieth centuries' urban landscape. Alteration of the street plan and demolition of nineteenth- and twentieth-century buildings have created difficulties in accurately placing the excavation's location on historic maps. Nevertheless, the excavations provided data that made it possible to refine the location of the site on historic maps, principally through foundations and property lines associated with the nineteenth- and twentieth-century lots that fronted on Endicott Street. The 1831 Bowditch map (Fig. V-5) is the earliest historic map on which the excavations could be accurately plotted.

The excavation area for the data recovery consisted of the excavation of two perpendicular back-hoe trenches, 21 units measuring 5 x 5 ft. (1.5 x 1.5 m.), and mechanical stripping (Figs. V-4, V-6, and V-7). As stated, the final placement of excavation units differed from that proposed in the permit application. The placement of data-recovery units reflected field decisions on how to maximize the recovery of the appropriate samples of data in order to address the research questions developed for the site. Modern construction features associated with Boston's transportation and utility infrastructure bounded the significant deposits in all four cardinal directions.

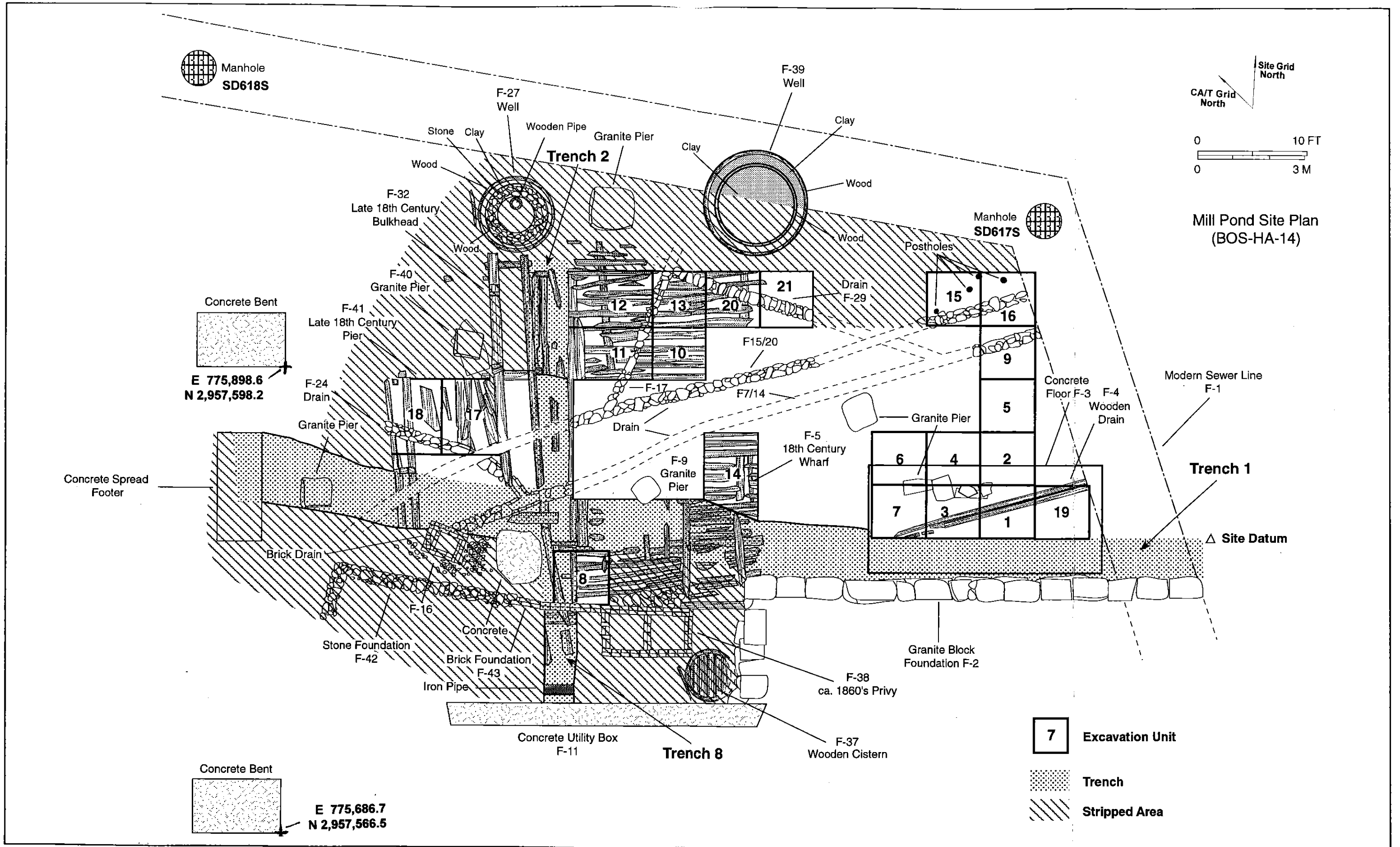


Figure V-4 - Mill Pond (BOS-HA-14) composite plan map showing location of excavation units, trenches and stripped areas.

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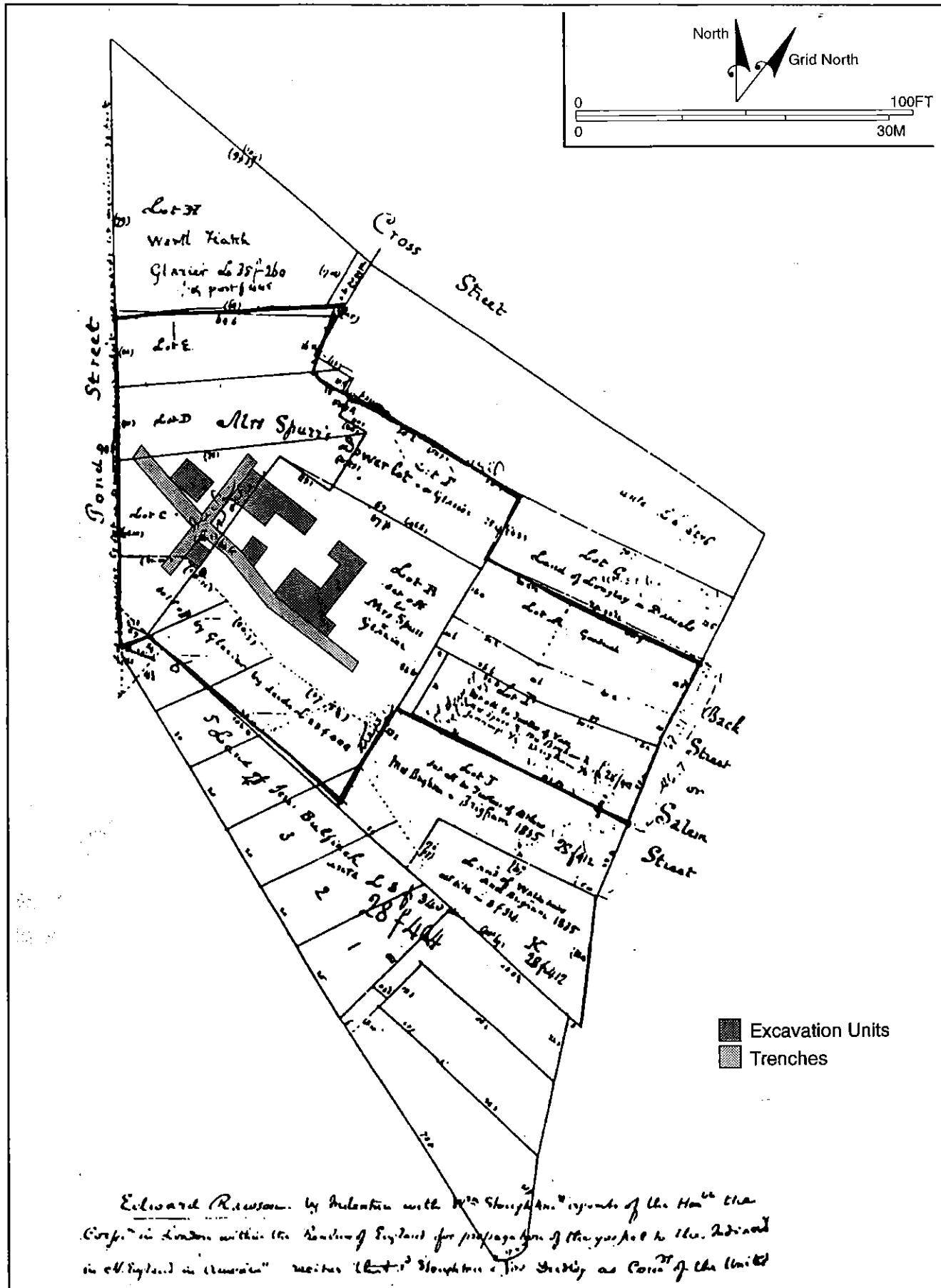


Figure V-5 - Sketch map of property boundaries (Bowditch 14:336) showing location of data recovery.



Figure V-6 - Overview of Mill Pond site (BOS-HA-14), facing west (site grid orientation).

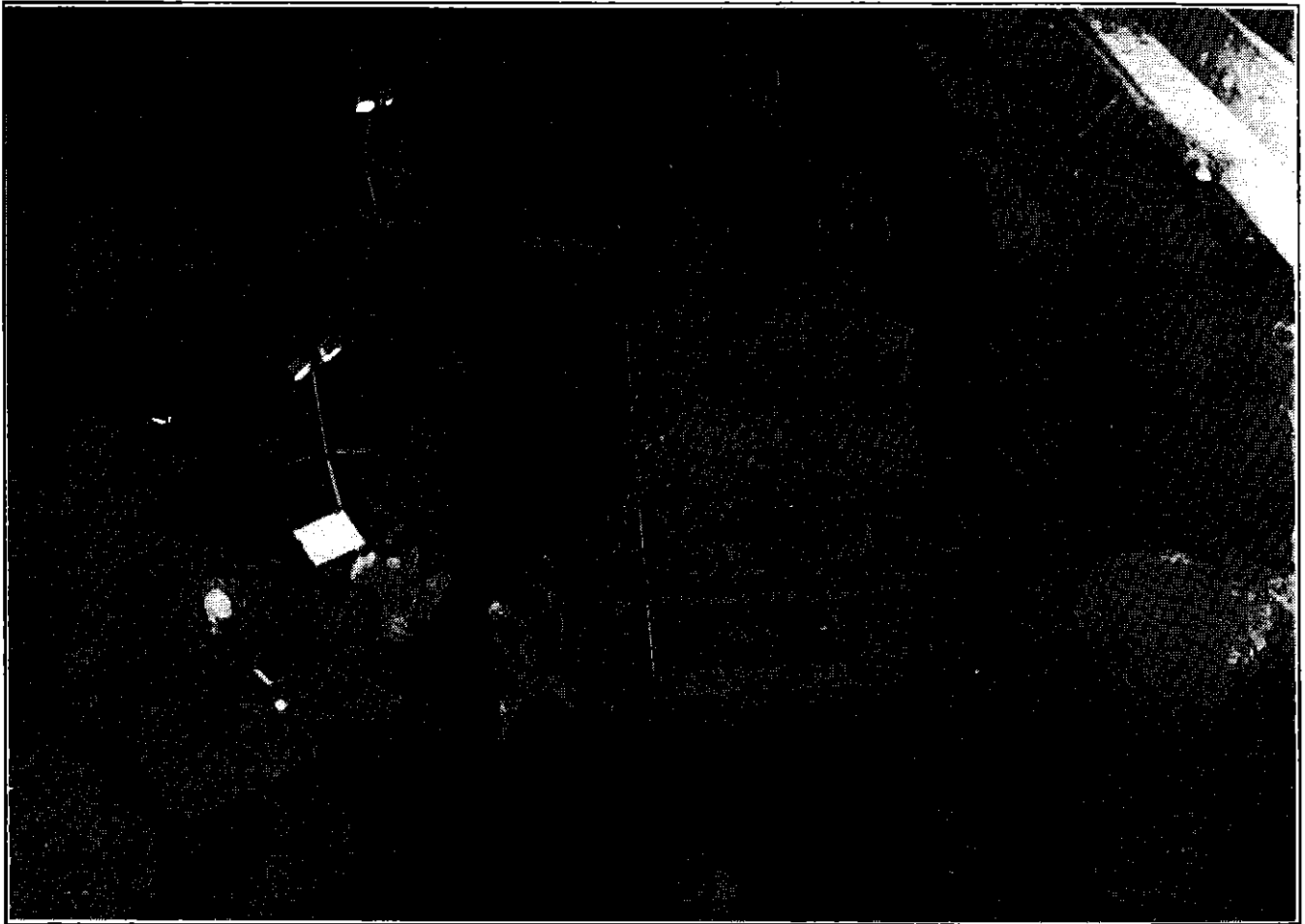


Figure V-7 - Overview of Mill Pond site (BOS-HA-14), facing east (site grid orientation).

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To the north, east, and south utility trenches marked the site boundaries. To the west the limit of significant deposits was formed by a disturbance associated with the construction of bents (supports) for the elevated highway.

In general, the stratigraphic development of the Mill Pond site was both vertical and horizontal. Construction and use of the Colonial period waterfront features, as well as the progressive filling of Mill Pond, acted to create horizontal stratigraphy with clear demarcations from east to west. Thus the elevation of the early nineteenth-century deposits on the west side of the site was lower than that of the late seventeenth- through early eighteenth-century deposits to the east.

The units of stratification that made up the stratigraphic sequence included ground surfaces, activity surfaces, fills, wharf timbers, foundations, and other features. Features included a wharf, bulkhead, piers, drains, cisterns, wells, privy, cobble paving, post holes, and foundation elements.

A word here about terminology: according to the common usage of the period, a dock was a small cut into the shore or bottom allowing a ship to approach closer to the shore for access (Huey 1984:29). A pier was a structure built out over a body of water to allow access to a vessel. The body of water adjacent to the pier, wharf, or bulkhead was a dock or slip. Wharves were originally made land along a shore, allowing for easier access to vessels. Wharves were either projecting or marginal, the latter being constructed along the shore rather than extending out into the water like a pier (Norman 1987:7). The term quay referred to a type of wharf known as a marginal wharf. Modern usage often does not distinguish among the terms *dock*, *pier*, *wharf*, and *quay*.

The Harris Matrix diagram for the site consists of 427 HNs (Fig. V-1, V-2, and V-3). Of these, 170 HNs (40%) reflect separate soil matrices while the remaining 256 HNs (60%) reflect timbers, interfaces, foundations, etc. Artifacts were recovered from 89 HNs (21% of total or 52% of the soil matrices). The small percentage of artifact-bearing HNs is not unusual, considering the large number of units of stratification identified solely by their presence in profiles. Appendix B contains soil descriptions, comments, identifications, provenience designations, phase, and date information, as applicable, on each HN assigned.

Stratigraphic analysis provided information on 15 phases of activity at the site: Phase I, initial occupation pre-1707; Phase IIa, construction of a wharf (quay), 1707-1709; Phase IIb, activities associated with first wharf surface ca. 1707-1720; Phase II, wharf surfaces ca. 1720s; Phase II/III, wharf improvement and related activities around the mid 1720s to the 1760s; Phase V, occupation surface ca. 1760s-1790s; Phase IIIb, construction of bulkhead and pier ca. 1795; Phase IIIa, platform over bulkhead ca. 1795; Phase III, fill episode ca. 1790s; Phase IV, Mill Pond Corporation fill ca. 1811; Phase VI, installation of drains first quarter of the nineteenth century; Phase VII, stable, first quarter of the nineteenth-century; Phase VIII, nineteenth-century features; Phase IX, privy at rear of 27 and 29 Endicott Street ca. 1867; Phase X, twentieth-century occupation. The combination of Roman numerals and letters reflects the phasing process. In order for the contextual studies to proceed before the phasing of the site could be completed (prior to the final identification of artifacts and needed temporal analyses) some assumptions were made concerning subdivisions of phases. As several investigators have pointed out, the phasing can begin during excavation but cannot be considered final until all data have been analyzed (Harris 1989:91 and Triggs 1993:251). Phase designations were not renamed because, as with all other identifiers within the Harris system, they serve as labels and not necessarily chronological markers. In order to retain consistency with the contextual analyses, the assigned phase designations were not changed, consequently several phases retain letters, one phase combines two Roman numerals, and Phase V occurs before Phase III.

Several dating methods were used to gain insight into the age of each phase and Harris Number. Table V-1 presents the results of these artifact dating methods. The MCD and TPQ for particular HNs can be found in Appendix B. PSBDs were calculated for phases but not for individual HNs because the sample sizes would have been too small

to obtain valid dates by this method. Several factors influenced the artifact dates; the validity of each date in terms of artifact types included (indigenous, residual, and infiltrated) is contained in the discussion of each phase. The TPQ date can reflect infiltrated artifacts more readily than the MCD and as a consequence can be misleading. Therefore, the TPQ dates were examined to determine whether the TPQ reflected the indigenous date of the deposit or infiltration caused by later site activities. Two factors were considered -- the frequency of artifact types and the likelihood of artifact infiltration. If the TPQ was determined by a limited number of sherds, the time spans between these sherds and sherds with earlier start dates were compared to ascertain if the sherds providing the TPQ date were anomalous. For example, in Phase IIb, 107 artifacts had limited time spans of manufacture and contributed to the dating of the phase. The TPQ date was based on a single creamware sherd with a 1770 start date. The next latest start-date was 1720 from one sherd of white salt-glazed stoneware and two sherds of Buckley ware. No other artifacts with eighteenth-century start dates were recovered. In addition, the four artifacts in question had been recovered from a portion of the site on which a large amount of activity from later phases had taken place. As a result of examining these factors, these four artifacts were removed from the TPQ dating and a "corrected TPQ" of 1700 is used as a better indicator of the actual date of the phase. The MCD for this phase is 1710 and PSBD is 1706. Taken together, the various dating techniques provide a range of dates when matrices from this phase were deposited.

Additional information on the date of a particular phase was obtained from "small finds" that have limited spans of use, pipe bowls in particular. These artifacts are subject to the same depositional processes that affect other time-sensitive artifacts. Consequently, an assessment was made as to whether these artifacts were valid indicators of the deposit's age or were intrusive or residual artifacts. In general, the small finds did not contribute much information to the dating of a deposit. The majority of the small finds had long spans of manufacture or did not bear any time-sensitive indicators, such as maker's marks.

In theory, the MCD should reflect the middle of the range of historic occupation of a deposit (South 1977:217-218). It is unusual for the MCD date to be later than the TPQ, but this did occur in Phase I. The MCD date will be later than the TPQ when the majority of artifacts have long spans of manufacture and the deposits contain no intrusive items. Thus, the median date of the ceramic types will be late. Many of the ceramic types manufactured in the seventeenth through eighteenth centuries have long periods of manufacture. The end of the span of manufacture for many of these artifacts roughly corresponds to the introduction of refined earthenwares (creamware and pearlware) in the latter half of the eighteenth century.

The description of the site by phase is chronological, with the earliest deposits discussed first and the nineteenth-through twentieth-century deposits discussed last. Specific features or other matrices of interest will be discussed within the appropriate phase.

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Table V-1. Phase dates based on artifact analysis.

PHASE	MCD	TPO	CORRECTED TPO	BSBD
I	1708.08	1700		1685.46
IIa	1710.34	1779	1700	1707.59
IIb	1710.17	1770	1700	1706.31
II	1726.60	1795	1700	1724.03
II/III	1737.74	1795	1762	1734
V	1768.53	1842	1779	1726.80
IIIb	1792.74	1840	1795	1717.59
IIIa	1795.63	1795		1729.07
III	1789.67	1820	1795	1736.14
IV	1787.89	1820	1795	1716.79
VI	1777.43	1893		1723.85
VII	1801.26	1842		1814.52
VIII	1798.05	1893	1845	1759.68
IX				
X	1733.13	1820		1625.77

- 1 Mean ceramic date
- 2 *Terminus post quem*
- 3 Pipestem bore date

1. Phase I: Initial Occupation, Pre-1707

Phase I deposits included stratigraphic units that related to the original configuration of the Shawmut Peninsula, prior to modifications by Bostonians. In addition, evidence of the earliest use of the site occurs within this phase. The discussion of Phase I contains a brief review of the physical setting of the Mill Pond at the time of first European settlement. This setting is important because environmental conditions were primary factors influencing initial use and stratigraphic development of the project area. Furthermore, throughout the period of significance, the site's spatial organization is linked to the Mill Pond.

The natural setting of the Mill Pond site has been altered by the urban development of the City of Boston. In the 1620s, when this process began, the topography and hydrology of the project vicinity reflected natural formation processes rather than human ones. The topography and hydrology encountered by the first settlers of Boston resulted from natural changes that began at the end of the Pleistocene. Retreat of the last glaciation and concurrent sea level rise were the main natural components that led to the topographic configuration of the Shawmut Peninsula. By about 3000 B.P., sea level rise had slowed so that coastal estuary and marsh ecosystems began to develop along the Atlantic coastline (Gallagher and Ritchie 1991:152-158).

The Mill Pond site is located on the northwest shore of a narrow isthmus, approximately 1,000 ft. (305 m.) wide at the Mill Pond site, that once connected what is now Boston's North End to the rest of the Shawmut Peninsula. The estuary of the Charles River formed the north and northwest shores of the isthmus. Originally, the Mill Pond was a marshy cove within the Charles River estuary. Located at the mouth of the Mill Pond was a long island that separated Mill Pond from the river. Judging from the representation of this natural feature, after it was modified into a dam, the island can probably be identified as the remnant of a river levee or sand bar. This topographic feature may have been utilized by Native American groups as a path at low tide (Whitehill 1968:11-12). The topography and hydrology of the Mill Pond can only be inferred from the historic record. Initially, it is likely that the pond was either a tidal marsh cut by permanent stream drainages or a shallow cove. The transition from the pond to the shore would have been marshy along most of its length, punctuated by beach in areas where the dry land sloped toward the water. In the mid 1600s, Mill Pond was transformed by filling, dredging, and excavation in order to create a system of tidal mills. The result was a large, shallow pond, with inflows and outflows at Mill Creek, and at either end of the Mill Pond dam. The manmade Mill Creek bisected the isthmus, allowing water to either enter or exit the Mill Pond, depending upon the tides. Mill Creek (present-day Blackstone Street) and the former location of one of the mills were approximately 200 ft. (60 m.) south of the project area.

The hydrology in front of the project area can be inferred from its relative proximity to Mill Creek. In the mid sixteenth century, Mill Creek was a swift-flowing stream (Whitehill 1968:12). As such, the area of the Mill Pond where the stream entered/exited would also have been an active water course rather than a marsh. It is likely that the builders of the Mill Pond continued to utilize the natural environment and connected Mill Creek to the permanent drainage channels that were probably present within the pond. Presumably, if Mill Creek was as swift as has been indicated, the locations neighboring the place where the creek entered the pond would have been well watered. The portion of the pond that fronted the site was probably never stagnant.

By 1651, a dock is mentioned at the rear of the property. This suggests that at this early period in the use of Mill Pond, the water abutting the property, with modification, was deep enough to accept boat traffic. No mention is made of a wharf (which would presumably have been needed if the depth of Mill Pond adjacent to the site was too shallow for water traffic) until 1709. Archaeological investigations did not encounter any remnants of this dock, access to which would presumably have been constructed on pilings above the water, as evidenced by posts projecting from the pond bottom.

Throughout much of the seventeenth century, the site area does not seem to have been subjected to activities that would have led to the development of differential stratigraphy. The matrices that make up this phase reflect natural soil development processes rather than site-formation processes associated with human activities. The archaeological investigations did find evidence for the original "fast-land" (land surface) and foreshore. The latter is a term used to describe the transitional zone between the low and high tide marks. No evidence indicated that a marsh had developed in the transitional zone along the shore. Evidence for marsh ecosystems has been recovered from other shoreline archaeological sites in the Boston area, in the form of naturally occurring peat deposits (Gallagher et al. 1987:77; Bradley et al. 1983). The identification of a foreshore is strong evidence that, at least adjacent to the site, the Mill Pond always contained water, presumably of enough depth to allow shallow-draft boat traffic.

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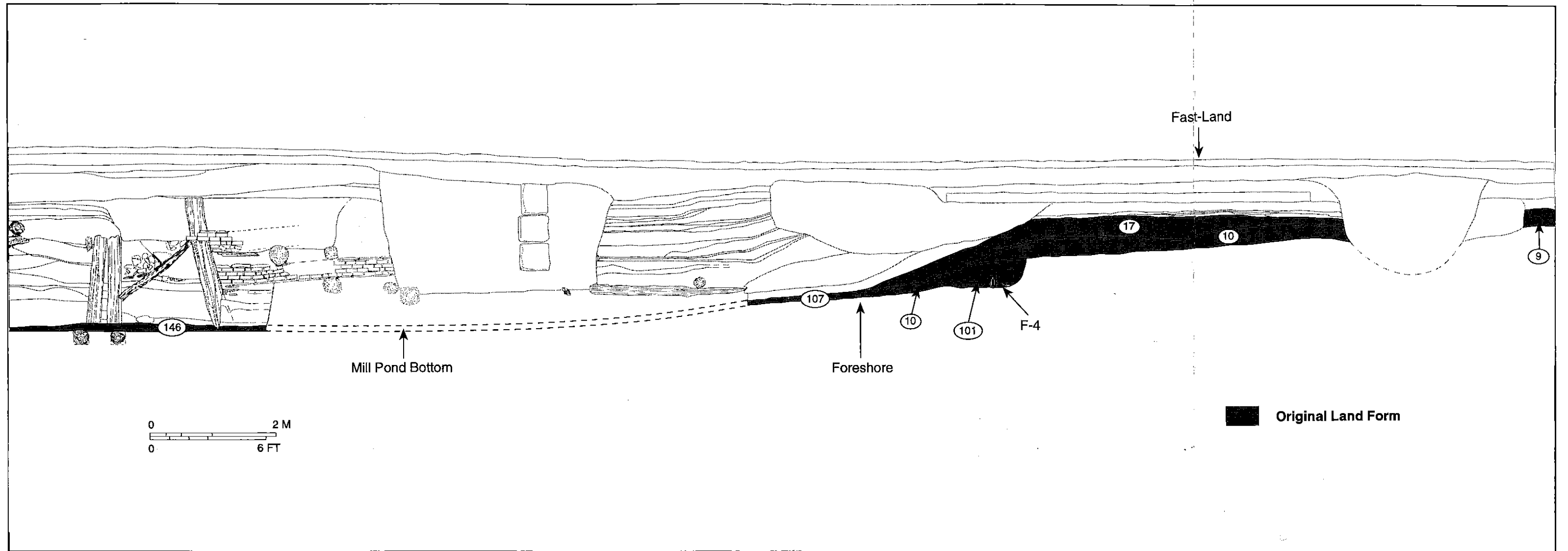


Figure V-8 - Trench 1, north profile, showing original land form.

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The section profile of Trench 1 shows the configuration of the original shore and Mill Pond (Fig. V-8). From this section profile and unit excavations, the natural topography of the site can be inferred: fast-land sloped down to the water's edge. Evidence for the shoreline is HN 107; the original dry-land surface is HN 17. Matrix HN 107 consists of coarse gritty sand; this is interpreted as resulting from soil sorting caused by water action. This matrix would have marked the foreshore and back edge of the historic lot. Although the excavations could not be accurately pinpointed on the earliest historic maps (Figs. IV-1, IV-4, IV-5, and IV-6) and the configuration of Back/Salem Street changed through time, the most accurate placements indicate that the 100-ft. (30-m.) depth for the property given in 1668 falls at the transition between HN 107 and HN 17. The identification of the foreshore and association with property size is significant. This information indicates that the foreshore portion of the property had not been modified by human activity at this time.

The original land surface, HN 17, was represented by paleosol (i.e., a buried former ground surface) identified in 12 excavation units (1-7, 9, 15, 16, 19, and 21) and in Trench 1. In general, HN 17 was a uniform dark gray (10YR4/1) semicompact silty clay that developed over a sterile subsoil (HN 10). The subsoil consisted of an olive (5Y5/2) silty clay with weak subangular blocky structure. This matrix extended from the east boundary of the site to the foreshore and from the northern to the southern boundary as well. The density of faunal material within HN 17 was high and, except for a wood drain, no features were associated with this matrix. Artifacts were scattered throughout the matrix. The topography and thickness of this matrix changed as the original surface sloped toward Mill Pond. The thickness of HN 17 decreased and lensed out at the transition to HN 107. On the basis of the lack of stratigraphic development in this portion of the property, it can be inferred that this location was not heavily utilized during the seventeenth century. The matrix is interpreted as representing the relatively unmodified natural land-surface and containing artifacts deposited between the Lowe and SPGI occupations. Site-formation processes associated with the construction and use of a wharf in Phases II, IIa, and IIb sealed HN 17, and few if any intrusive artifacts entered into this matrix.

Artifact dating of the HN 17 assemblage provided an MCD of 1708, TPQ of 1700, and a 1685 pipestem bore date. The TPQ was based on the presence of three Westerwald ceramic sherds. Redwares dominated the ceramic assemblage of HN 17, comprising 62% of the ceramics. Faunal materials represented 40% of the artifacts recovered from this matrix. Two additional time-sensitive artifacts were recovered. Both were pipe bowls with restricted dates of manufacture, based on time-sensitive shape attributes (Noël Hume 1969:303). From Phase I, one Noël Hume-type 9 (1645-1680) and one Noël Hume-type 14 (1680-1710) were recovered (Noël Hume 1969:303).

The presence of flint nodules throughout the Phase I deposits is of interest. The flint is European in origin, probably transported as ballast. It is unclear how or why these artifacts would have come to be included within the deposits. The Phase I deposits account for 29.3% of the total recovered flint, exceeded only by the 26.5% for Phase IIb (associated with activities on a wharf). Excavations at Paddy's Alley (BOS-HA-12) and Cross Street Back Lot (BOS-HA-13), located approximately 450 ft. (137 m.) east of the Mill Pond site, recovered this artifact type primarily from matrices associated with the initial occupations of these sites in the first decade of the eighteenth century (Cook and Balicki 1994). The dumping of flint ballast on the isthmus must have been a common occurrence during the late seventeenth through early eighteenth centuries, but seems likely to have declined due to the development of the urban environment. Several factors including proximity to docks, land-use, shipping technology, cargo, and land ownership may account for the occurrence of this artifact type. It is not clear exactly when the ballast began to be deposited on this portion of the isthmus, but by the mid eighteenth century the process appears to have stopped. Once the land of the isthmus was divided and population density had increased, the amount of land available for the disposal of ballast probably decreased and dumping it at this location was not viable. The increased urbanization made it unlikely that ship ballast would have

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been discarded at either the Paddy's Alley or the Mill Pond site in later years; therefore, this artifact type can be used to examine the age of a fill or as an indication that earlier artifacts were moved from their original context into later strata. It is considered a residual artifact when present in later phases.

The one feature present in HN 17 was a wood drain (Figs. V-9 and V-10). The drain (Feature 4) was installed early in the development of the property before this portion of the lot was extensively used. The drain extended 17 ft. (5.18 m.) across Units 1, 3, 7, and 19 and was exposed by Trench 1. Neither the origin nor the terminus of the drain was encountered. The installation of modern utilities destroyed the drain's course and origin to the east, while construction activities related to the Phase IIa occupation resulted in the destruction of the drain terminus. Drain flow was toward the Mill Pond and presumably the terminus of the drain was along the foreshore. Construction was not elaborate, being nothing more than three planks of wood fastened by nails (Fig. V-11). Planks formed the sides and top of the drain, which had no bottom. It was placed at the base of a trench that cut through HN 17 to subsoil. The builder's trench was similar in soil composition to HN 17 but contained a small amount of redeposited subsoil. The interior drainage cavity was 0.5 ft. (15 cm.) wide by 0.3 ft. (8.5 cm.) deep (Fig. V-11). The drain sediment (HN 211) was an olive gray (5Y4/2) clay. The only artifacts recovered from HN 211 included a wrought rose-head nail and a small number of unidentifiable ferrous fragments.

Artifacts recovered from the builder's trench provided an MCD of 1680 and a TPQ of 1650. Sample size was very small, only eight time-sensitive diagnostic ceramic sherds were recovered. In addition, the drain is likely to date early in the occupation of the property because the builder's trench contained only redeposited HN 17 and HN 10, while HN 17 is sealed by later deposits. If the MCD date is valid, then the drain would have been installed during the Waters occupation between 1653-1676. The drain may have functioned to drain the yard area around the house Waters built on the property or an undocumented outbuilding.

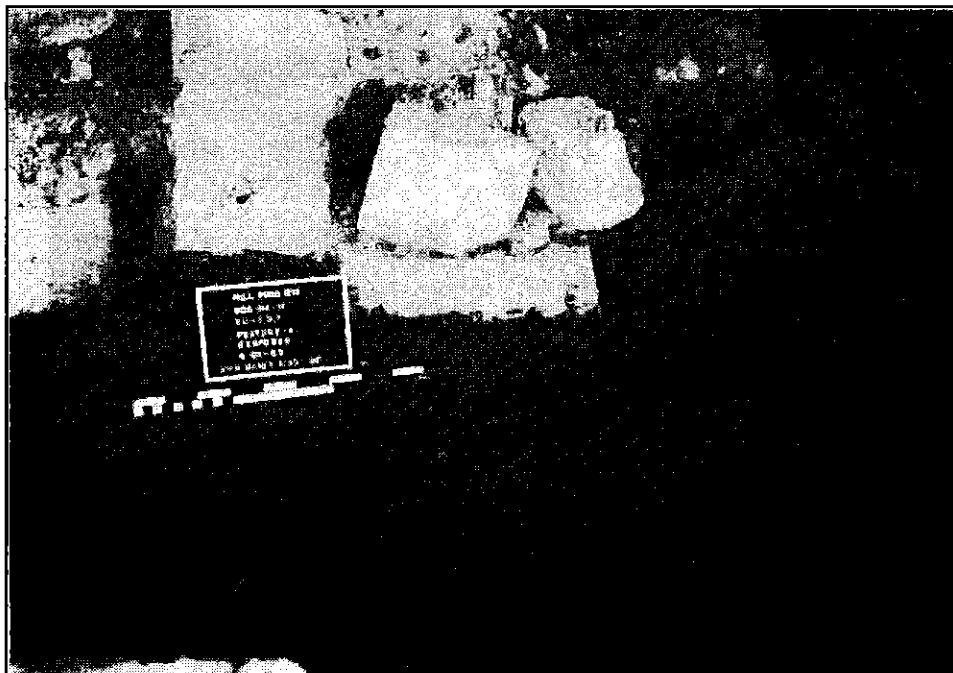


Figure V-9 - Plan view of excavation units 1, 3 and 7, showing drain (Phase I, feature 4), facing north.

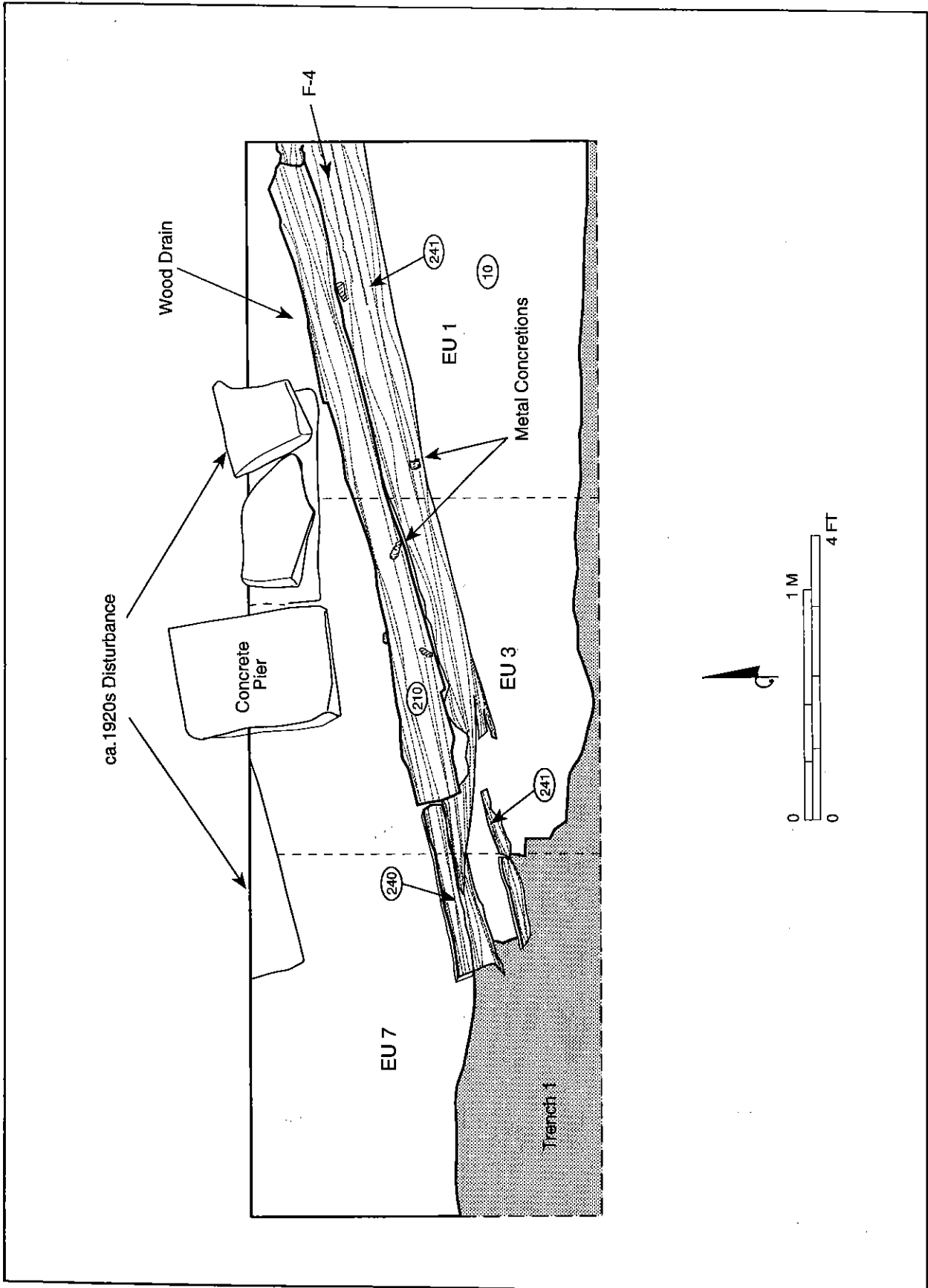


Figure V-10 - Plan view of excavation units 1, 3, and 7, drain (Phase I, feature 4) exposed.

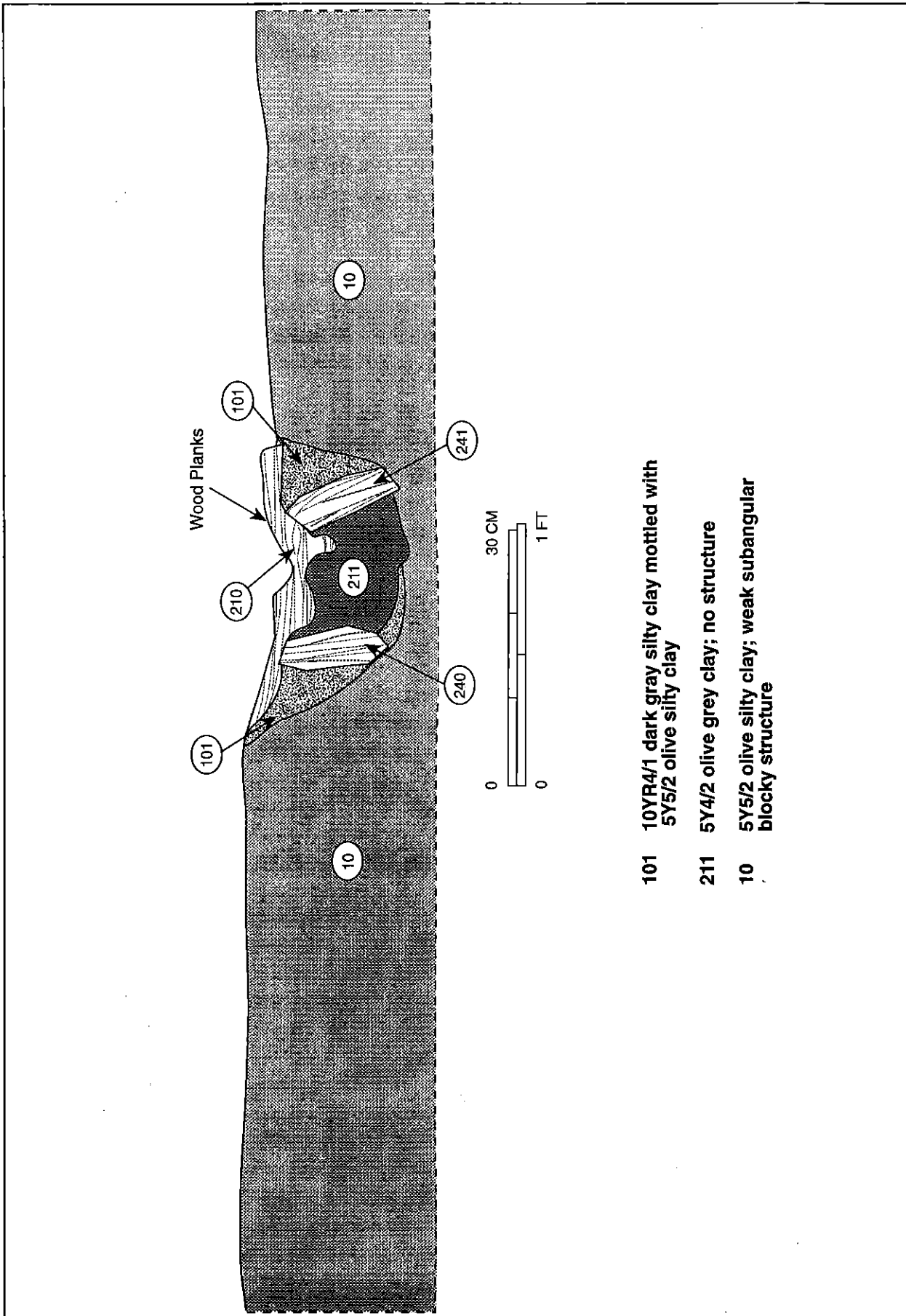


Figure V-11 - Excavation unit 3, drain profile (Phase I, feature 4).

2. Phase IIa: Construction of Wharf (Quay), 1707-1709

Phase IIa consisted of the units of stratification associated with the construction of a wharf at the rear of the property. While Phase I deposits indicated that the rear portion of the property was not extensively used, beginning with Phase IIa more activities occurred on this portion of the property, adjacent to Mill Pond. Whether these activities were mainly associated with the transportation of goods via the Mill Pond or with other functions is not known.

Evidence suggests that the entire water's edge of the property was modified by wharf construction within Phase IIa. The type of wharf encountered was a marginal wharf or quay. A quay would have had a retaining wall, termed a bulkhead. Only ephemeral evidence of an early eighteenth-century bulkhead was identified. Presumably most of this waterfront feature was destroyed by construction related to the installation of a ca.-1795 bulkhead (Phases IIIb, IIIa, and III).

Summarizing historic research results from Section IV, it is likely that the wharf was constructed in the first decade of the eighteenth century. The first mention of the wharf in the historical record is in a 1709 deed between the SPGI and John Eustis. This would suggest that the wharf was constructed during the SPGI's tenure on the property. An SPGI plat drawn in 1707 shows the property and Mill Pond shoreline (Fig. IV-2) as a beach, not as a wharf edge. The depths of the property on the plat and in the deed are consistent with that provided in earlier records, suggesting that the wharf was built after the plat was drawn, between 1707 and 1709.

It is not clear why the SPGI would have built a wharf on the property. It is possible a wharf would facilitate movement of goods and people between this property and another property the society owned across the Charles River in Charlestown, which included a wharf. Another possibility is that the wharf was constructed to make the property more saleable. The addition of a wharf may have allowed for larger vessels to approach the property, thereby making it worth more as a shipping point.

Considering that the neighborhood consisted of merchants and craftsmen, access to water transportation would have been an asset and waterfront property would have commanded a higher price. In other words, the investment made by the SPGI in construction of the wharf would have brought a higher profit when the property was sold. It appears this was indeed the case, because the property sold for twice the average price for residential property and £50 above the average for commercial property. Alternatively, by the turn of the century, the increased erosion caused by the settlement of Boston may have caused Mill Pond to become increasingly shallow. Consequently, the depth of the water at the rear of the property may have decreased to the point where the use of the back of the property for transport of goods was not viable unless it was modified. On the other hand, the improvement may have been made simply to make access to the property more efficient or to create more fast-land on the lot.

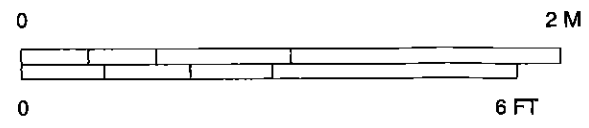
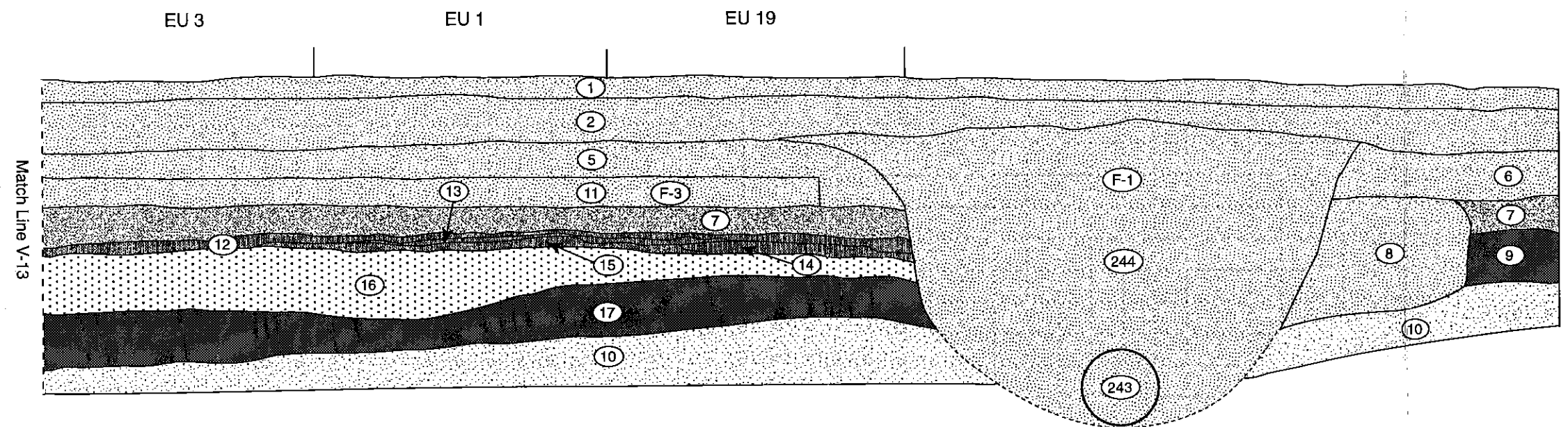
The units of stratification that made up the archaeological deposits of Phase IIa documented the construction of the wharf. The natural configuration of the shoreline was modified at this time by construction of a wood-timber and earthen structure that in effect was made land that extended the property out into the Mill Pond to a point at which the depth of the pond was probably sufficient to receive the vessels that serviced the Mill Pond waterfront. At least three general construction steps were involved in the construction of the wharf: modification of the natural shoreline, construction of a wood-and-timber base, and the placement of fill on top of the wood timbers to create a usable surface. A fourth step was probably the construction of a bulkhead. Historic maps, from the earliest Bonner

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map of 1722, show the edge of the property as straight, reflecting the presence of the wharf. The shoreline modifications included depositing fill on top of the original foreshore and fast-land. In order to obtain an uniform surface on which the wharf could be constructed, several deposits of fill were laid down (HNs 113, 219, 16, 218, 19, 206, 205, 199, 198, 197, and 20) (Fig. V-12, V-13, and V-14). The fills varied in thickness, with the thickest deposits on the original slope. This process, in effect, sealed the units of stratification associated with Phase I. In general, the fills contained relatively few artifacts. The modifications to the shoreline did not extend into Mill Pond for any appreciable distance.

Once the shoreline had been modified, the timber portion of the wharf structure was assembled in place. The absence of fills beneath the wharf indicated that, directly adjacent to the shoreline, the Mill Pond bottom was almost level. Construction of the wharf timber structure was simple; timbers were stacked on top of each other in a grid pattern; then, fill was deposited into the structure's interstices. Thus a stable platform was formed, upon which fill was added to create a solid, dry surface. The Harris Matrix provides a stylized profile of the wharf timbers (Fig. V-3). Four layers of wharf timbers were encountered. The lowest two layers served to level the pond bottom and probably provided a solid base for the workers. These timbers were placed parallel to the shoreline and were larger than the timbers above them (Figs. V-15 and V-16). Upon these timbers and perpendicular to the shoreline were laid the bulk of the timbers. Finally, a few timbers were laid on top of the main body of timbers. The final timbers were placed parallel to the shoreline. Except for the timbers at the water's edge of the wharf, all timbers were rough-cut logs with bark but no branches. The diameter of the timbers ranged from a minimum of 0.5 ft. (15 cm.) to a maximum of 1 ft. (30 cm.). The excavations uncovered 62 wharf timbers belonging to this phase. Junctions between timbers were examined for evidence of the how they had been joined, but no fasteners (nails, trunnels, spikes, ropes, etc.) and no cut joints were encountered. The absence of any joining mechanisms supported the interpretation that the wharf was constructed on the spot. Seventeenth- through nineteenth-century wharf construction included a variety of construction methods, several of which included the assembly of a timber frame off the wharf site. After the timber elements were constructed, they were floated to the specified location and sunk. It is clear that the Mill Pond wharf was atypical of seventeenth- through nineteenth-century wharf construction. The basic differences were the lack of fasteners, the fact that the logs were not joined together, and the modest size of the structural wood elements as compared to those of other wharves that date to the same time period.

The last step in the construction of the wharf was the creation of a useable surface. Fill was deposited upon the timbers, voids were filled, and the elevation of the wharf surface was raised above the high-water mark. Like the fills used to modify the land surface, the fills in and directly on top of the wharf contained few artifacts. Across most of the exposed wharf, HN 37 is directly on top of the wharf and represents the fill added to raise the surface of the wharf. Although excavated in several units, no artifacts were recovered from this matrix. The topography of the top of the fill indicated that there was still a distinction being made between the fast-land and the wharf. At the end of the initial construction, a slope was retained at approximately the edge of the original shoreline. Because this distinction was clear, the depth of the property continued to measure 100 ft. (30.5 m.) until 1779, by which time further construction and use had resulted in the addition of deposits that finally obscured the transition.



- 243 Harris Number
- Phase I
- Phase IIa
- Phase IIb
- Phase V
- Phase X
- Natural

Figure V-12 - Trench 1, north profile, east section (site grid orientation).

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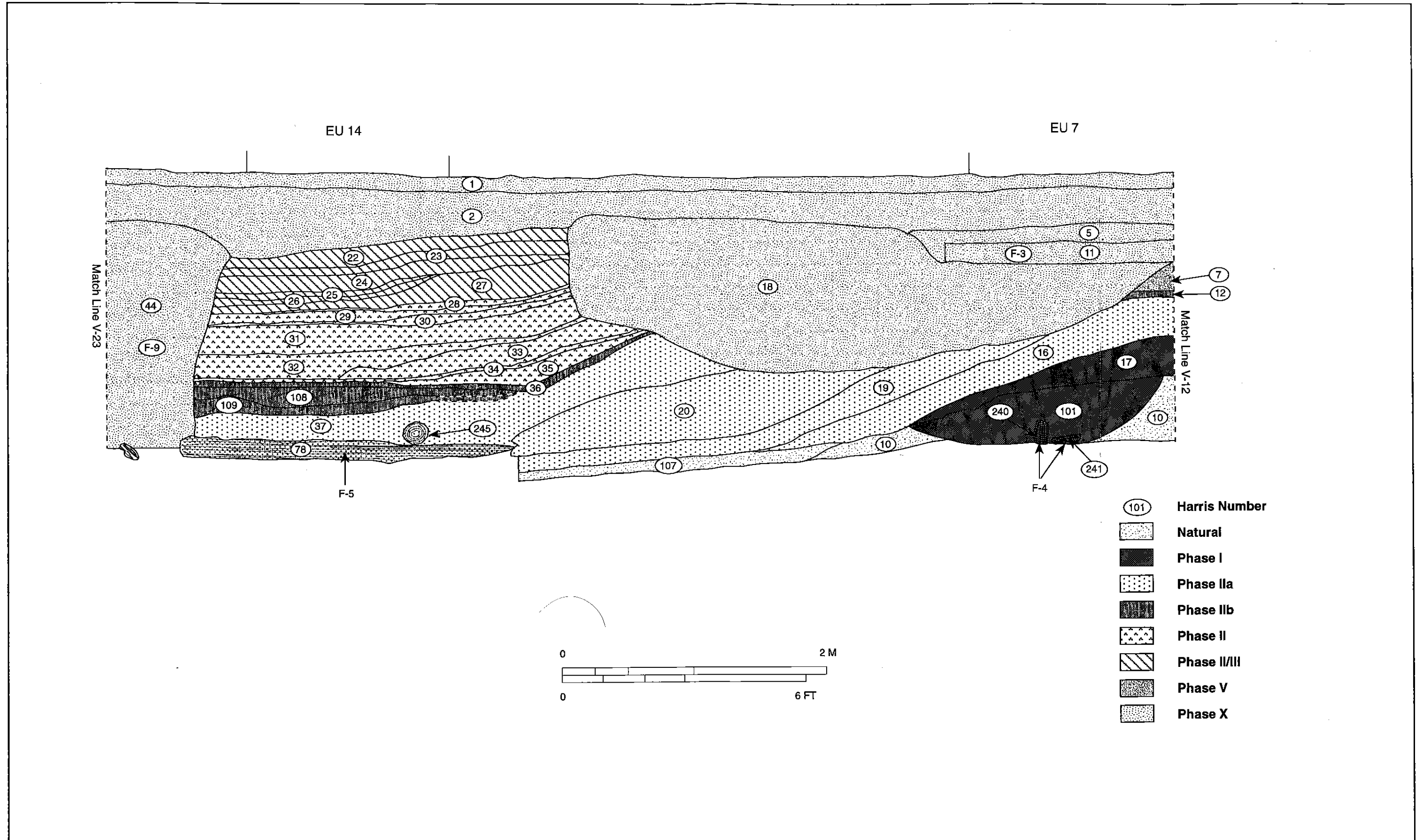
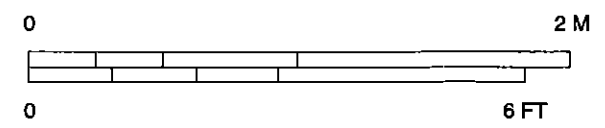
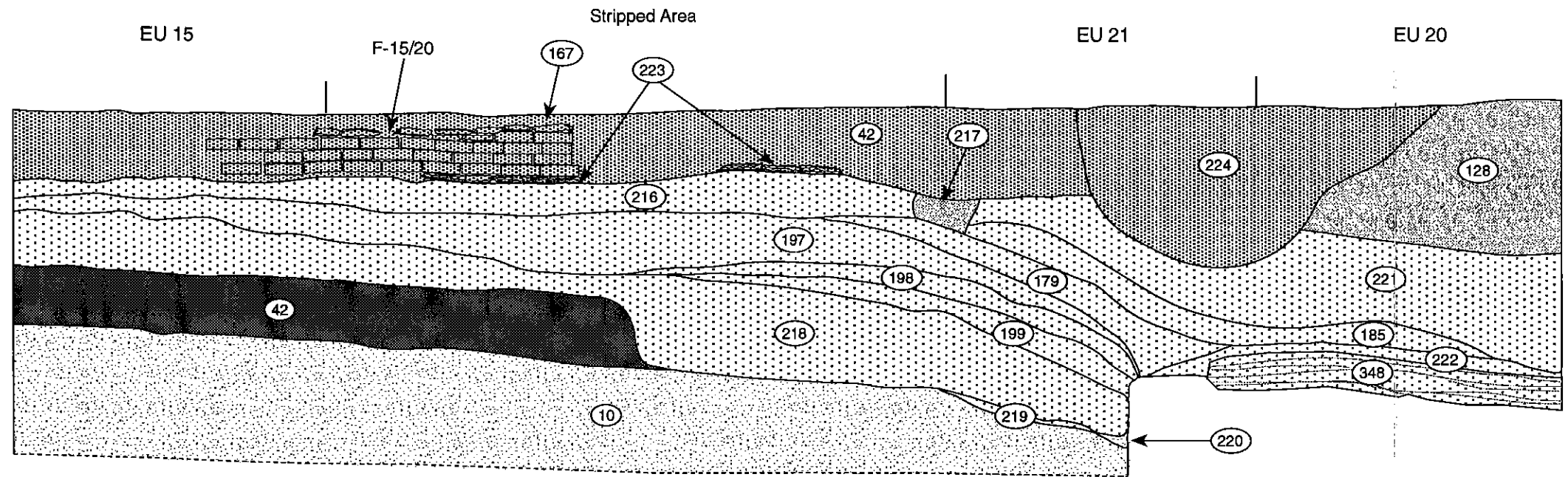


Figure V-13 - Trench 1, north profile, middle section (site grid orientation).

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- (217) Harris Number
- Phase I
- Phase IIa
- Phase V
- Phase VI
- Natural

Figure V-14 - Excavation units 15, 20, 21, and stripped area, south profile (site grid orientation).

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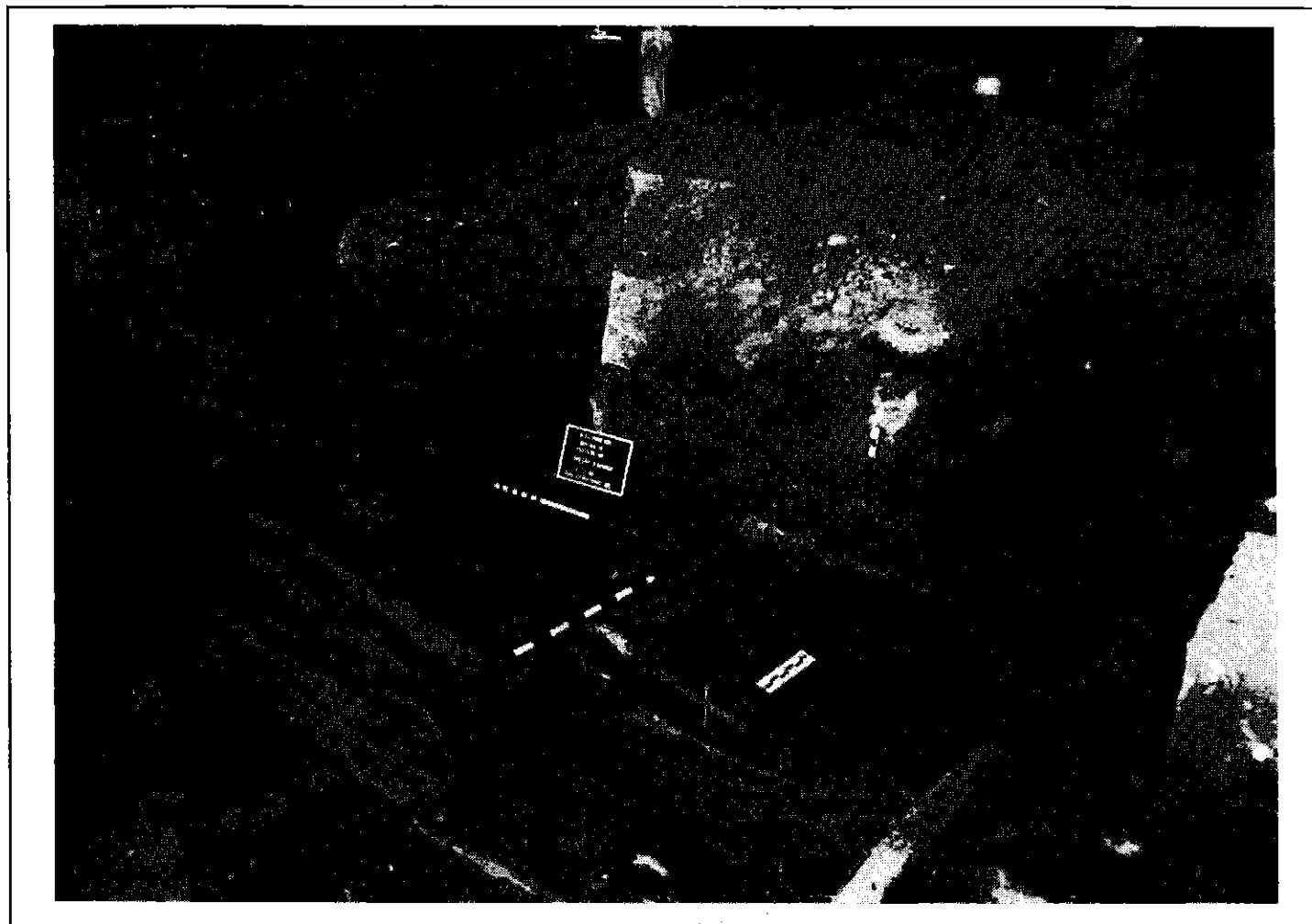


Figure V-15 - Overview of wharf (Phase IIa, feature 5), facing northwest (site grid orientation).

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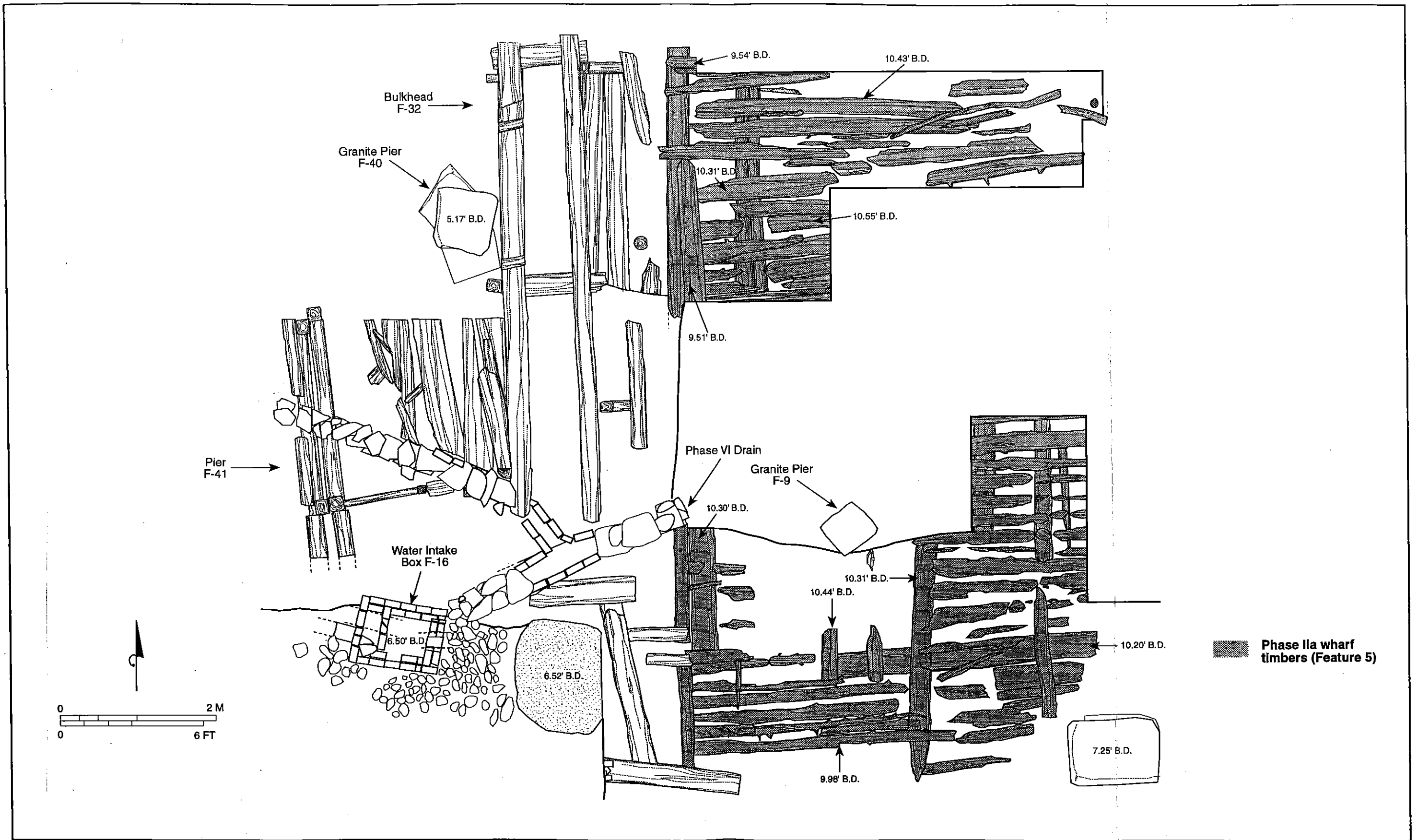


Figure V-16 - Composite plan view of waterfront features, showing Phase IIa wharf timbers (feature 5).

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The edge of the original wharf was not identified with any certainty. Construction from later Phases (II/III and IIIb) included the alteration of the water's edge. In Phase IIIb a bulkhead was constructed, destroying the waterside edge of the original wharf. Several squared logs (HNs 286 and 289) may represent the edge of the original wharf (Fig. V-17). These logs were only exposed over 10 ft. (3 m.) and it is not clear how they were joined to the horizontal grid of timbers. However, the Phase IIa wharf probably ended in a bulkhead. The wharf would have extended the land into the Mill Pond at least 18 ft. (5.5 m.). Whether this was far enough out into the pond to allow access for ships or if a dock or pier feature extended further out into the pond could not be determined by the excavations. If the water level was maintained at a constant level throughout the eighteenth century, then the depth of the pond in front of the wharf could not have been more than 2 to 3 ft. (0.6 to 0.9 m.). This rough estimate is based on the comparison of elevations between known wharf surfaces (HN 36) and identified pond bottom sediments (HNs 145 and 146).

The simplicity of the design can not be understated. Elsewhere, the archaeological excavation of wharves has led researchers to conclude that wharf construction followed a set pattern established as early as the Middle Ages (Gallagher 1991:137 and Roberts 1989:133). The wharf investigated at the Mill Pond site differs from these wharves and it is likely that the Mill Pond site wharf is an expression of vernacular architecture. The simple design reflects the type of water body on which the wharf was built as well as the craftsmen who constructed it.

The artifacts recovered from this phase provided an MCD of 1710, a TPQ of 1779 and a PSBD of 1707. Excavations of Phase IIa deposits recovered several intrusive artifacts. On the east side of the site, deposits dating to this phase had been disturbed by several intrusive nineteenth- through twentieth-century construction features, while bulkhead construction in the mid-to-late eighteenth century had disturbed several matrices on the west side of the site. These formation processes led to a small amount of mixing, which in turn led to the movement of artifacts. The TPQ date is based on the presence of two pearlware sherds; in addition, 13 other sherds dated to between 1700 to 1779 and are considered intrusive, so that the corrected TPQ is 1700. Additional insight into the date of the phase was obtained from three tobacco pipe bowls with time-sensitive forms (1650-1710, 1680-1710, and 1720-1820). The pipe bowl with the 1720-1820 date range is also considered intrusive. The intrusive ceramic sherds and pipe bowl were recovered from two HNs (185 and 179) and from Unit 19. The excavation units in which HN 185 was encountered had been disturbed by the installation of an early nineteenth-century drain (Phase VI). Within Excavation Unit 19, Phase IIa deposits were encountered directly beneath Phase X deposits associated with a concrete floor and a sewer trench. The remaining Phase IIa contexts did not appear to have been disturbed. If, on the basis of the above considerations, HNs 179 and 185 and Unit 19 were removed from consideration, the TPQ was 1700.

The body of evidence contained within the historic documents, artifacts, and stratigraphic analysis provide for evidence that the wharf was built by the SPGI, probably between 1707 and 1709. It is possible that the wharf was constructed as part an effort to sell the property. The method of construction represents a local vernacular style that differs from the methods of construction observed at other archaeological wharf sites.

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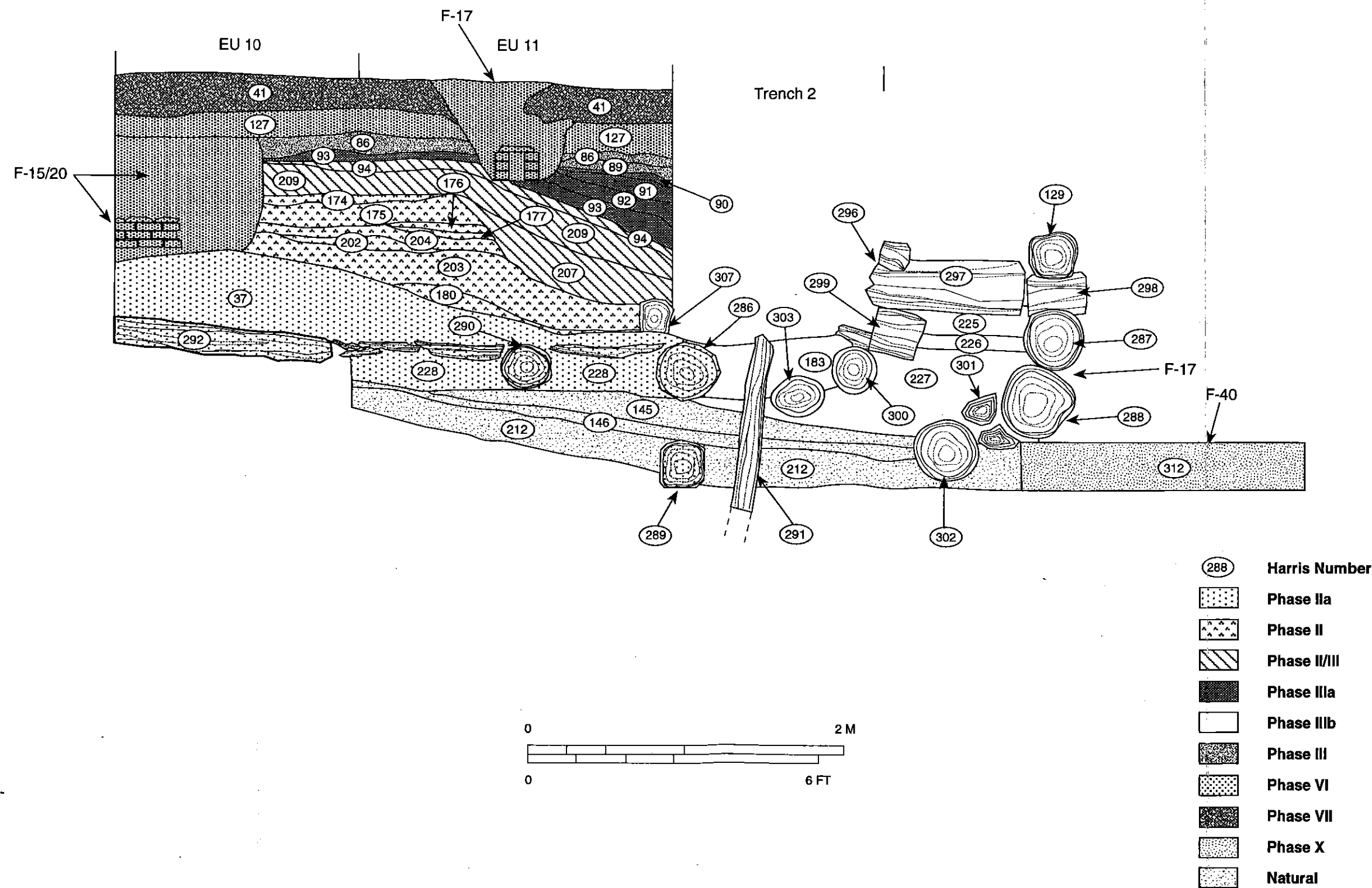


Figure V-17 - Excavation units 10 and 11 and bulkhead, south profile (site grid orientation).

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3. Phase IIb: First Wharf Surface Activities, ca. 1707-1720

As presented in the stratigraphic analysis of Phase IIa, the wharf was probably built just prior to the transfer of the property from the SPGI to John Eustis in 1709. Phase IIb consisted of the units of stratification associated with the first identifiable surface on the wharf; presumably these units of stratification can be associated with the SPGI occupation of the property. In addition, these deposits should provide insight into when the wharf was built. The MCD for the phase was 1708.07. Based on all the artifacts, the TPQ was 1770. However, the TPQ probably reflected intrusive artifacts. If two sherds of Buckley ware and one sherd each of white salt-glazed stoneware and creamware were dropped from the assemblage, the TPQ fell to 1700, a date more reflective of the actual age of this phase. The PSBD was 1704.87. Pipe-bowl forms provided two additional date ranges of 1650-1680 and 1680-1710. No other artifacts displaying restricted time-sensitive date ranges were recovered.

There were nine separate units of stratification within this Phase (Figs. V-12, V-13, and V-17). Exposed matrices were provided with a separate identifier until there was certainty that matrices in non-contiguous excavation units or trenches were identical. Multiple HN designations are not a problem, but multiple units of stratification under one HN would have been. Phase IIb was not present on the north side of the site (site grid orientation)(Fig. V-14). Activities associated with later phases had destroyed the early surface, as well as any Phase II and II/III surfaces that may have been present.

The first surface on the wharf was represented by a thin stratum (HN 36 and 12). The Trench 1 profile (Fig. V-12 and V-13) shows this surface extending from the land (HN 12) down a slope and then onto the wharf (HN 36). A post hole (HN 164, Feature 19) was encountered on the surface of HN 36. Only a remnant of the feature was encountered, and no artifacts were recovered from the fill excavated from the post hole. Upon the wharf, the other HNs (108 and 109) were fill deposited beneath HN 36. The change in topography exhibited by this stratum indicates that, when the wharf was originally constructed, there was a distinction between it and the land. The topographic feature that marked the transition was the slope from land to the wharf. This transition is at the location of the former foreshore.

4. Phase II: Wharf Surfaces, ca. 1720s

Units of stratification within this phase correspond to a series of layered horizontal strata encountered in Excavation Unit 14 (Fig. V-13). These units of stratification represent the use of the wharf during the early eighteenth century. The stratigraphic sequence recorded during the excavation of Unit 14 was not replicated elsewhere, except in the portion of Trench 1 that abutted the unit to the south. Modern disturbances lay to the east and the west. It was not clear why the stratigraphic sequence did not continue to the north. Two drains (Phase VI) were located in the unexcavated area, north of Unit 14. The units of stratification in this phase represented the use of the wharf from ca. 1707 to the early 1720s. During this phase, the topography of the waterfront portion of the property changed. The use of the wharf included the adding of fill to the wharf and to the slope of the fast-land, which caused the surface of the wharf to become almost level with that of the fast-land (Figs. V-12 and 13).

The artifacts recovered from the Phase II deposits indicated that the deposits received artifacts from 1720 to 1760. The MCD for the deposit was 1726.6 and the TPQ was 1795. The TPQ date was not considered valid; an examination of artifact type frequencies indicated that the artifacts with the latest start dates were likely to be intrusive and that a corrected TPQ of 1762 was a better indicator of the actual age. The artifacts with late start dates

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were primarily within HN 177, a stratum that may contain some infiltrated artifacts from post-Phase II activities. The PSBD was calculated at 1724.03. No other artifacts with limited spans of manufacture were recovered.

The field investigators interpreted the stratigraphic sequence as a series of activity surfaces and fill episodes during the excavations of Unit 14 and Trench 1. During the field work, each unit of stratification was interpreted as representing either a fill deposit or an activity surface. The determination of deposit type was based on the soil descriptions and thickness of the unit of stratification. Four HNs (28, 30, 32 and 34) were identified in the field as activity surfaces. The Phase II strata in Unit 14 may represent resurfacing of the wharf. Although the strata within Unit 14 occurred next to the slope from the fast-land down to the wharf, the strata did not appear to have been deposited by erosional processes. The fill episodes included five units of stratification (HNs 29, 31, 33, and 35).

A unit of stratification was designated as an activity surface if it was thin but extended horizontally, following the contour of the site's topography. For example, on the profile of Trench 1 (Fig. V-13), HN 34 sloped down to the top of the wharf. Units of stratification interpreted as fill episodes varied in thickness and horizontal extent. The Munsell color designation for all the deposits interpreted as fill was olive or olive gray. The Munsell designation for the interpreted activity surfaces varied, but all had dark hues, dark values, and low chromas. This may or may not relate to organic content within the individual matrix.

During the course of artifact analysis, the separate HNs within this phase were examined to see whether the artifacts could support the interpretations made in the field. On the basis of artifact type and distribution, no appreciable difference between the HNs was observed to aid in the designation of a unit of stratification as either fill or surfaces. However, total artifact count from each unit of stratification may reflect the deposit type. Three of the four units of stratification interpreted as activity surfaces had fewer than 45 artifacts each. The fourth (HN 28) had over 300 artifacts. On the other hand, only one HN designated as fill had an artifact count of less than 274, and that HN had 155 artifacts. This suggested that the artifact count would be higher for fill matrices. No volumetric data were calculated, so it is possible that the differences observed were a manifestation of the increased volume of the all the fill HNs, due to the varying thickness of the matrices. The first surface on the wharf (HN 36) had a total of 180 artifacts.

The percentages of artifact types were examined within each unit of stratification. This examination did not contribute to the analysis of the Phase II deposits from Unit 14. In general, the percentages for bone, shell, glass, and ceramics did not distinguish between strata identified as fill and those identified as surface. The only exception was the percentage of bone from HN 28 (54%) which was higher than any of the other strata. Flint ballast was present in three HNs, all fill (29, 33, and 35), but only HN 29 had flint ballast in any quantity (12%). The high percentage of ballast in HN 29 may indicate that this strata was fill, the origin of which was to the east on the fast-land.

Phase II deposits located toward the water's edge in Excavation Units 10 and 13, consisted mainly of HN 177. Units of stratification associated with Phases II/III and IIb intruded into this stratum. These post-Phase II activities hindered the interpretation of Phase II deposits at the water's edge because the original wharf edge was later removed. HN 177 varied in thickness, increasing in thickness from southeast to the north, although this change is not apparent on Figure V-14. This fact suggests that the deposit may represent fill added at the end of the original wharf. Artifacts from HN 177 included a large quantity of bone and tobacco-pipe fragments.

5. Phase II/III: Wharf Improvement and Related Activities, Mid 1720s-1760s

Deposits associated with this phase corresponded to activities between about the mid 1720s and the 1760s. During this period, the property was owned by William Maycock. Initially, the units of stratification within this phase were thought to belong to either Phase II or Phase III, hence the interim II/III designation. As analysis progressed, however, it became clear that the HNs within II/III were different from those in either II or III and could not be assigned to either phase. Consequently, the II/III designation was retained. The units of stratification within this phase were identified in Excavation Units 10, 11, 12, 13, 14, 20, and 21. Trenches 1 and 2 also exposed these deposits.

The strata identified within Excavation Unit 14 reflected a continuation of the depositional processes begun in Phase IIb (Fig. V-13). These strata (HNs 22-27) were interpreted as fill episodes. No artifacts were recovered from them.

The Phase II/III deposits encountered in Units 10, 11, 12, 13, 14, 20, and 21 may reflect something other than the occupation or use of the waterfront (Fig. V-17). Some of these strata may reflect a repair or rebuilding of the water end of the wharf. Disturbance associated with the late eighteenth century (Phases IIIb, IIIa, and III) bulkhead construction had destroyed the original water end of the wharf along with evidence of any modifications. However, the profile and excavation of Unit 11 provided insight into possible repair or rebuilding. The profile indicated that several strata appeared to have been truncated by HN 207. This suggested that the wharf had been repaired; however these repairs have not survived. The repair may have included modification to the wharf's water-edge timbers with addition of fill after the repairs to bring the surface back to grade. The distribution of this phase was limited to Units 10, 11, 12, 13, 14, 20 and 21 did not extend to the east. If the wharf had an exposed wood bulkhead, its approximately ten-to-50-year exposure to the elements (water action and ship worms) may have deteriorated the timbers to the point where repairs were needed. No evidence for decay or ship worm infestation was found on any of the surviving timbers.

The MCD for this phase was 1737.21. The TPQ was 1795 with a corrected TPQ of 1762. The pipe stem bore date for this phase was 1734. Additional artifacts bearing time sensitive information included six pipe bowls with a form indicating a range of manufacture between 1700 and 1770 and one pipe bowl with a form manufactured between 1650-1710.

Phase II/III may represent use and repair to the waterfront portion of the site during the William Maycock occupation. It is likely that the edge of the wharf needed to be repaired after ca. 20 years of exposure to the elements. However, no evidence of decay was identified on any of the timbers located at the edge of the early wharf. Maycock's will suggests he improved his property before the 1770s, but the details of these improvements were not recorded. Phase II/III may reflect these improvements.

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6. Phase V: Occupation, 1760s-1790s

This phase contains strata that relate to the tenure of William Maycock (1723-1771), Maycock's son-in-law Joseph Jackson (1771-1774), and Josiah Vose (1788-1818). The occupants between 1774 and 1788 are unknown, although Vose may have taken up residence as early as 1783. Deposits dating to this phase were encountered across most of the site (Excavation Units 1-5, 9-13, 15, 16, and 19-21) and represent an activity surface covering the rear of the property for at least 30 years. In general, these deposits were located high in the stratigraphic profile and therefore the stratigraphic units were disturbed by intrusion from several later phases (Phases IIIa, IIIb, VI, VII, VIII, and X). The variety of artifact types was large; the numerous early and late artifact types indicated that the deposit was subjected to a range of disturbance activities. On the west side of the site, Phase V was encountered directly beneath a modern concrete floor, the construction of which introduced artifacts into the Phase V matrices. The matrices within Phase V continued to receive artifacts (intrusive) into the nineteenth century. Although intrusions did occur, contamination of the indigenous deposits was not sufficient to exclude these deposits from the analysis.

The MCD for Phase V was 1768.53. The TPQ was 1842 with a corrected TPQ of 1779. Analysis of pipestem bores provided a 1726.8 date. In addition, one time-sensitive artifact, a pipe bowl with a range of manufacture between 1730-1790, was recovered. As noted, numerous ceramic types were recovered from this phase. Furthermore, the variety of ceramic types may reflect the period of transition from pre-mass-produced ceramics to mass-produced work, with old ceramic styles being replaced by creamware and pearlware. Also, the lower frequency of pearlware suggested that the deposit dated to the time range when pearlware was not yet the dominant ceramic type.

The units of stratification encountered related to the use of the property rather than to a construction episode, like Phase IIa or IIIb. There was no clear evidence that activities included the use of the wharf to transport goods. Although several post holes were encountered within this phase, they appeared random and did not reflect a structure. These posts could relate to one or more of the four outbuildings listed in Jackson's 1774 probate inventory. Maycock's inventory did not list any outbuildings.

Maycock was characterized as a brazier and a truckman, Jackson and Vose were truckmen; it is probable that the waterfront portion of the property was used for the movement of goods and that the site area was used as a stable, as suggested by the 1828 land transaction document. The occupations of the owners involved the trade of goods through barter or exchange. It is probable that the property was used as a storage or transfer point for goods. As businessmen, Maycock, Jackson, and Vose appear to have been successful enough to purchase an expensive property that offered them expanded commercial options. The property at the Mill Pond provided a central location and may have allowed them to avoid wharf fees, thereby increasing their ability to survive in business.

7. Phase IIIb: Construction of Bulkhead and Pier, ca. 1795

Units of stratification associated with this phase corresponded to activities that modified the waterfront section of the property in ca. 1795. The main activities within this phase were the construction or repair to the bulkhead and the construction of a pier off the bulkhead. These features were combined within this phase because they appeared to date to the same time and were interrelated.

By the late eighteenth century, either the waterfront section of the original wharf needed to be repaired or a decision was made to construct a new bulkhead along the water's edge. Construction of the bulkhead was adjacent to the

edge of the old wharf (Phase IIa). The profile of Units 10 and 11 (Fig. V-17) showed stratigraphic interfaces sloping to a point behind the new bulkhead. Construction of the new bulkhead included the filling of the cavity it created. This construction episode and feature are described in Phase IIIa, above; the fill deposits appeared to relate to a single episode of filling beneath a wood platform and as such to merit definition as a separate phase for analysis. However, within the late eighteenth-century landscape, the pier, bulkhead, and platform would have all been present at the same time as part of an integrated waterfront facility.

By 1779, when Hurd obtained most of the property, its depth as defined in the deed had been increased from 93 ft. (28 m.) to ca. 138 ft. (42 m.). The increase in the depth of the property reflected the use of the property's waterfront between ca. 1709, when the wharf was built, to ca. 1779, when the bulkhead was constructed. When the original wharf was constructed, there was a distinction between fast-land and the wharf surface, marked by a change in grade. Part of the original slope of the shoreline had been retained, making the identification of the wharf easy. Sometime after 1715, the last mention of the wharf in the historic documents, the distinction between fast-land and wharf was lost. Two factors account for this; the main one being the addition of fills to the top of the wharf, so as to level off the grade. Second, as the property changed hands through time, the new owners would have been less likely to continue to distinguish the wharf. The 45-ft. (13.7-m.) increase in depth primarily reflected the 34 ft. (10.36 m.) created by the construction of the wharf, including the fill added to the foreshore (Phase IIa). The origin of the other 11 ft. (3.35 m.) is uncertain, but 7 ft. (2.15 m.) may reflect the return of the same measure of land that had been subtracted from the property's depth between 1668 and mid 1700s.

The final modification to the property's waterfront was the construction of a bulkhead (Feature 32) that ran the length of the property (Figs. V-4, V-17, V-18, and V-19). This bulkhead may be represented on the 1769 Price map, the 1775 Page map and the 1814 Hales map (Figs. V-20, V-21 and V-22) 1814 Hales map. The bulkhead was investigated through the excavation of Units 11 and 12 and Trenches 1 and 2. In addition, a section was removed from the bulkhead to allow for the examination of the bulkhead's internal structure. This cross section was aligned with the south profile of Units 10 and 11 (site grid orientation)(Figs. V-17 and V-23). Several factors contributed to the decision to rebuild the original bulkhead, but it is probable that the waterside edge of the wharf would have decayed in the 30 to 50 years since its last repair (Phase II/III) and would have been in need of further work.

Construction of the bulkhead and pier occurred in the 1790s, when Vose owned the property. Sixty-two ceramic sherds that displayed limited spans of manufacture provided an MCD of 1792.72 for this phase, a date that fell within the period of Vose's occupation. The TPQ of the deposit was 1840 (although an earlier date, 1810, has been attributed to this artifact type), for two sherds of American stoneware with an Albany slip. If these artifacts were considered intrusive, the TPQ was 1795 and more reflective of the true age of the deposit. The date provided by pipe stem bore dating was 1717.6, but that date cannot be considered valid because it is based on five pipestems. No other time-sensitive artifacts were recovered from the deposits associated with this phase.

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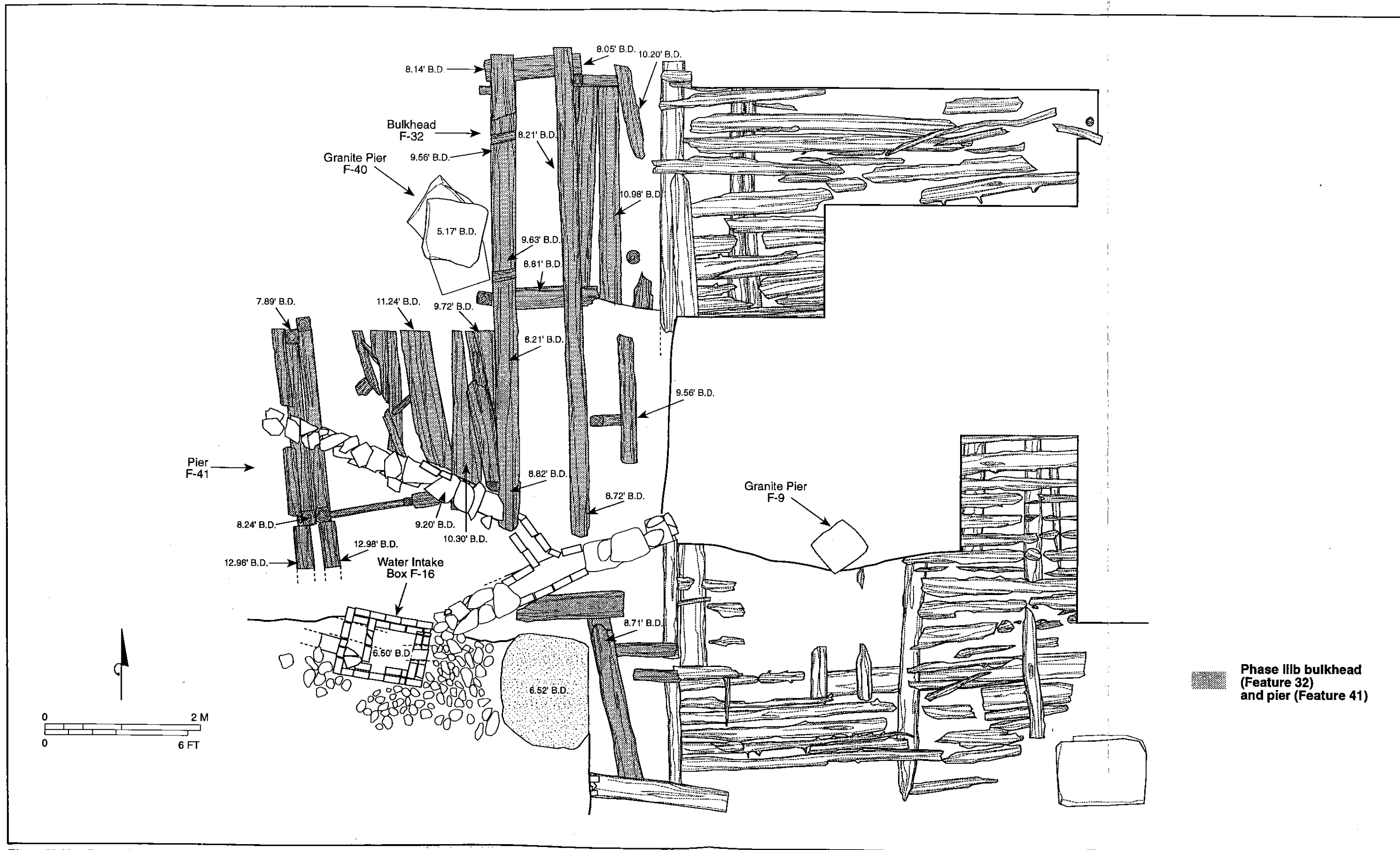


Figure V-18 - Composite plan view of waterfront features, showing Phase IIIb bulkhead (feature 32) and pier (feature 41).

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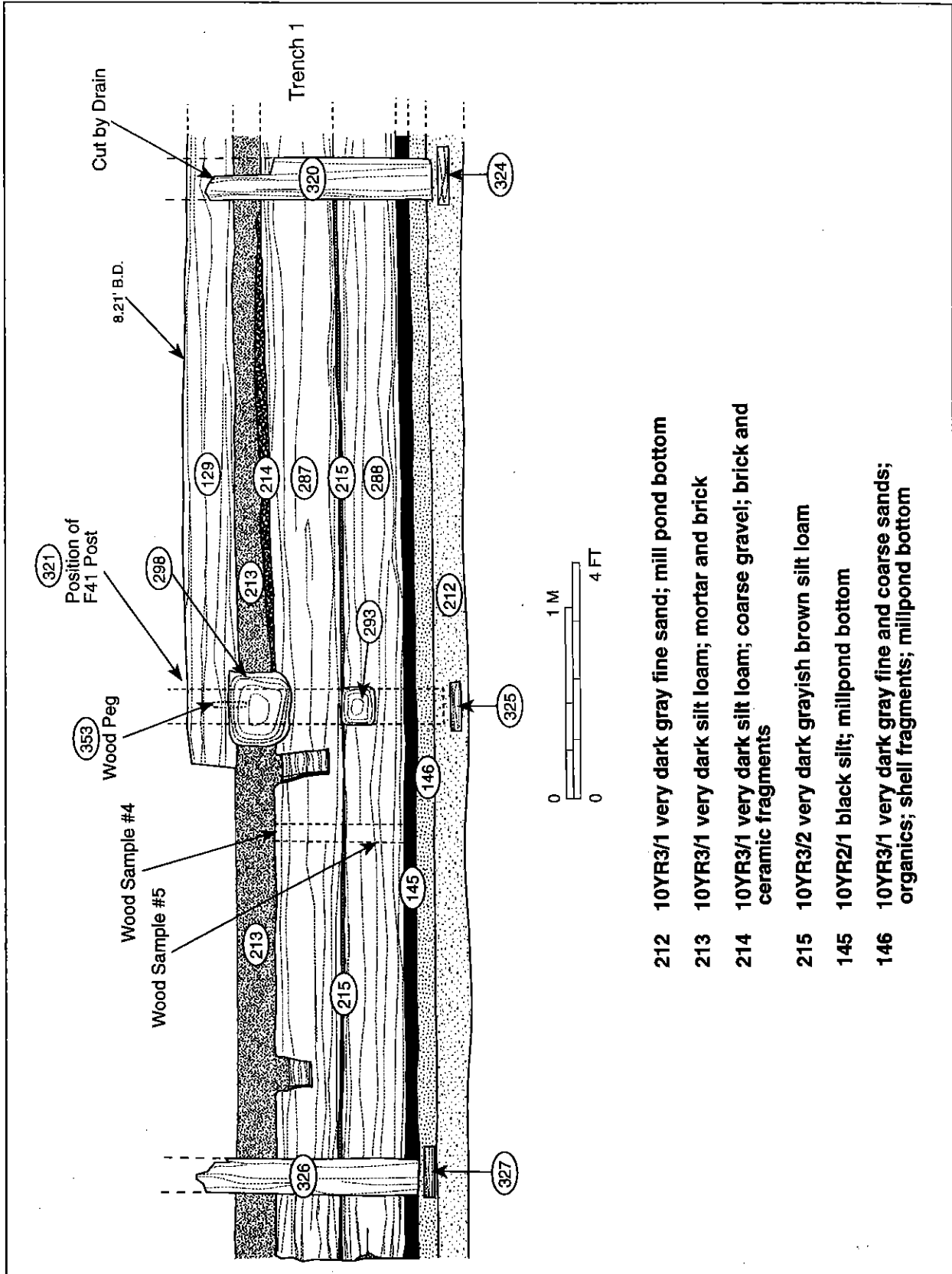


Figure V-19 - Phase IIIb bulkhead, east profile (site grid orientation).

- 212 10YR3/1 very dark gray fine sand; mill pond bottom
- 213 10YR3/1 very dark silt loam; mortar and brick
- 214 10YR3/1 very dark silt loam; coarse gravel; brick and ceramic fragments
- 215 10YR3/2 very dark grayish brown silt loam
- 145 10YR2/1 black silt; millpond bottom
- 146 10YR3/1 very dark gray fine and coarse sands; organics; shell fragments; millpond bottom

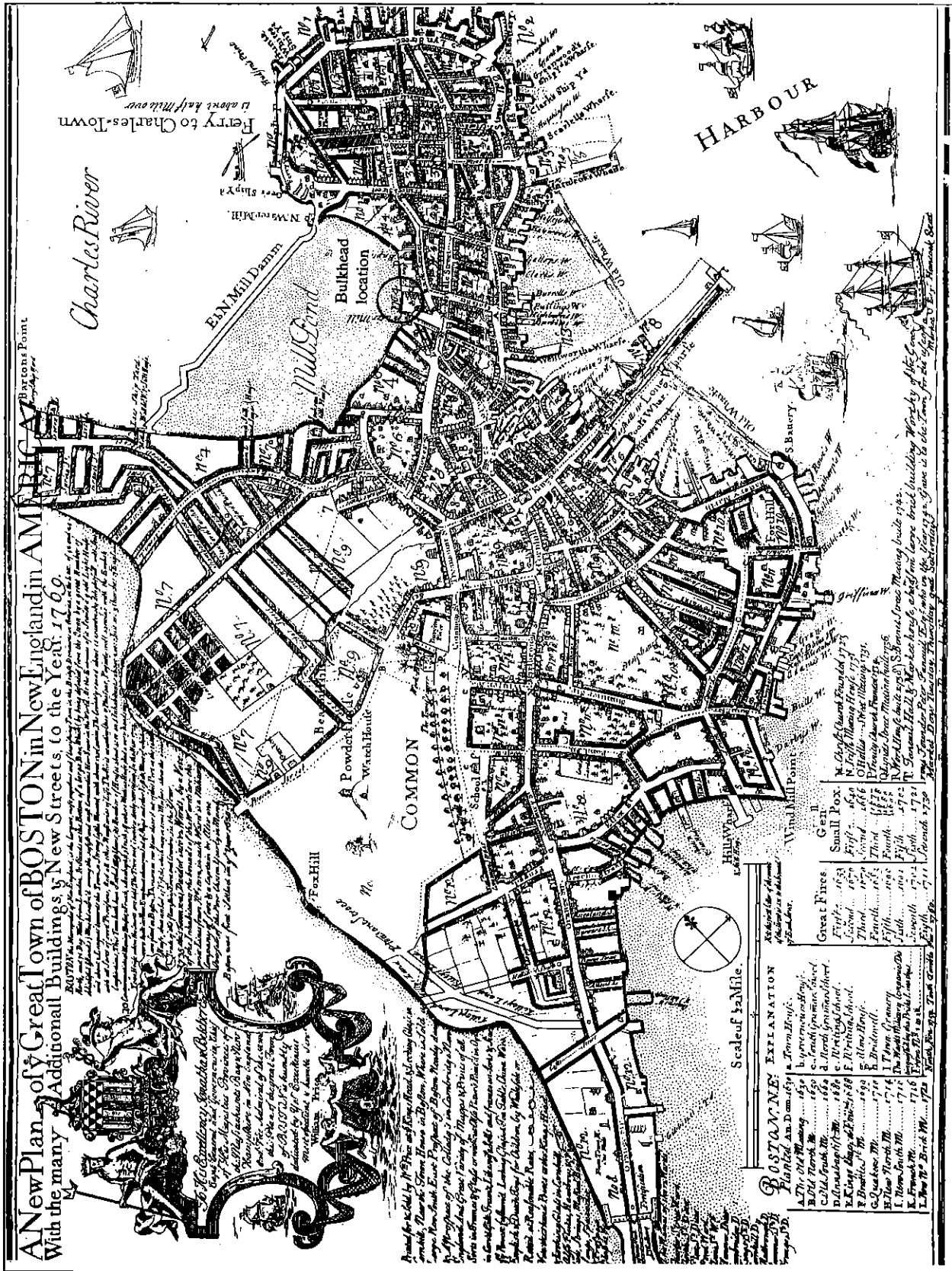


Figure V-20 - 1769 Price map showing location of bulkhead.

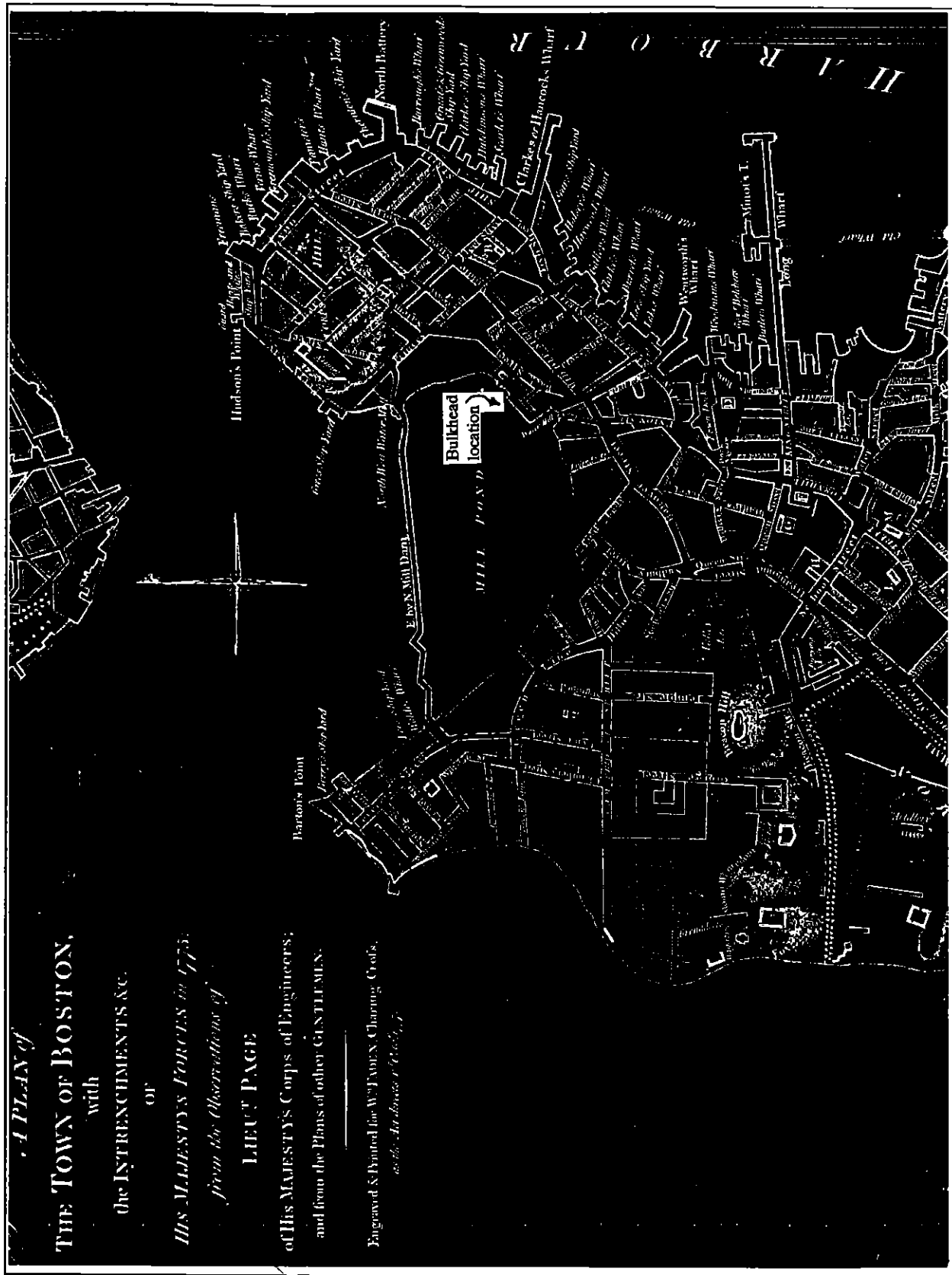


Figure V-21 - 1775 Page Plan of the Town of Boston showing location of bulkhead.

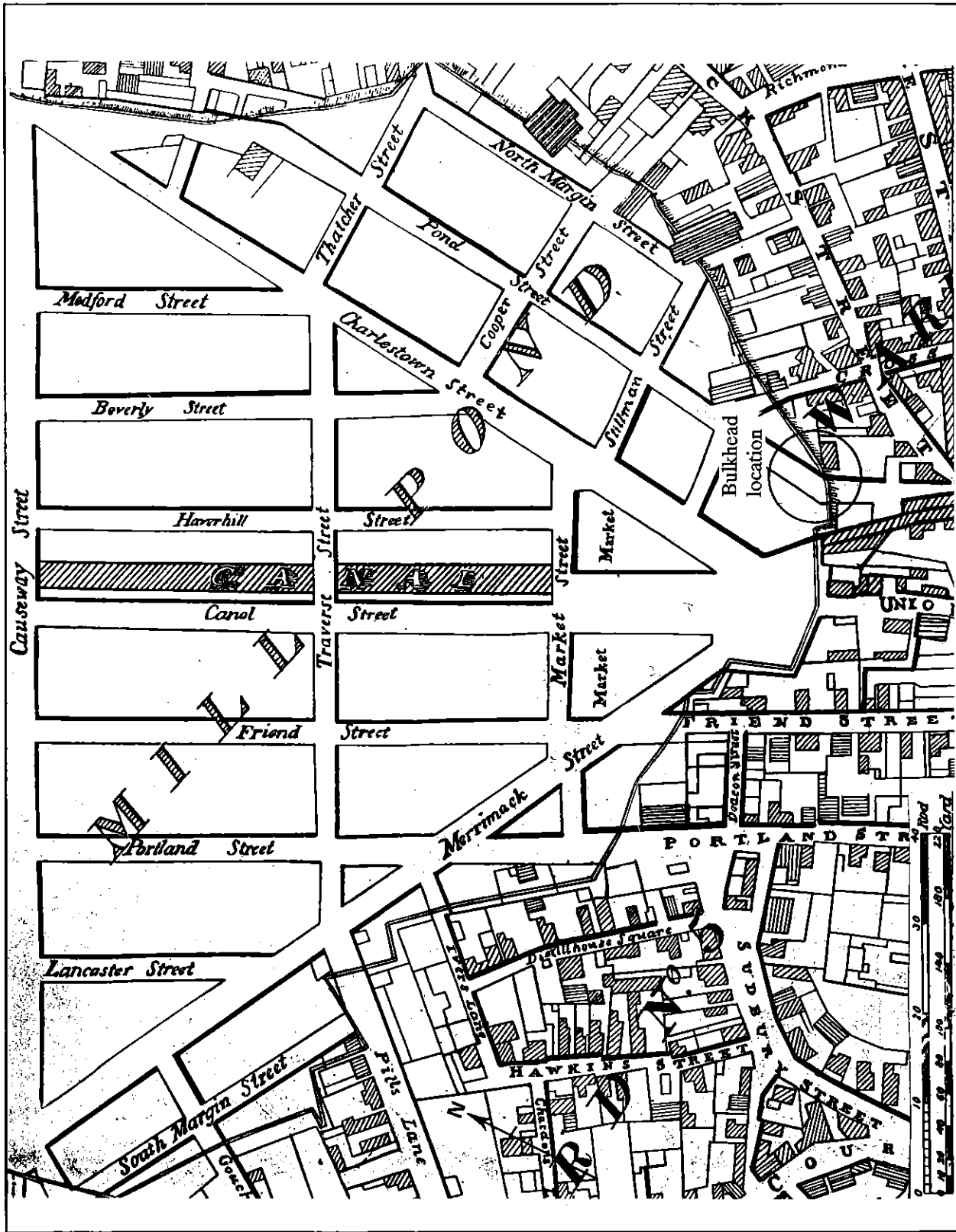


Figure V-22 - 1814 Hales map showing location of bulkhead.

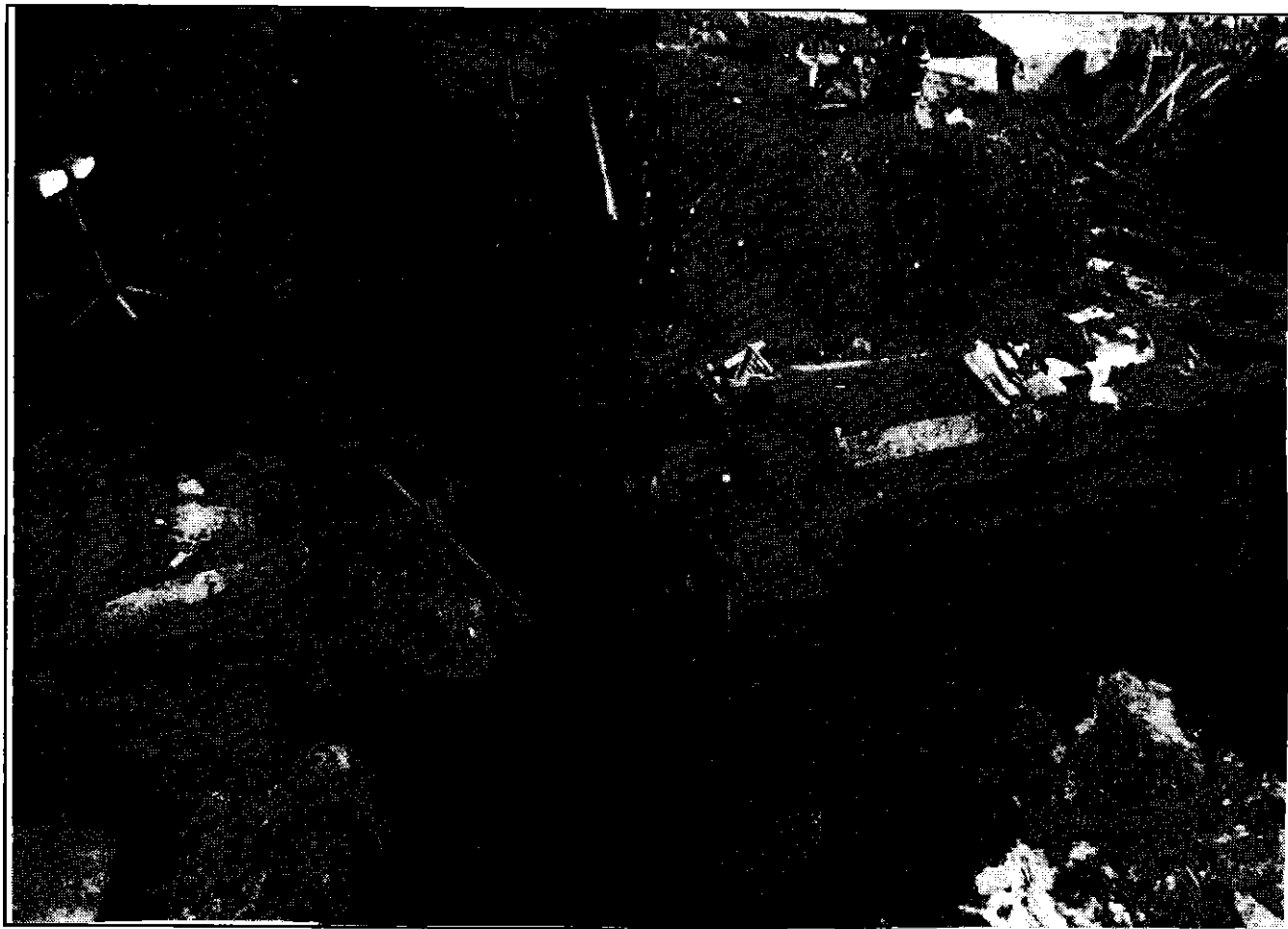


Figure V-23 - Overview of Phase IIIb, Feature 32 bulkhead, facing south (site-grid orientation).

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The artifact dating, combined with the historic record, indicates that the bulkhead was constructed in the 1790s when the property was owned and occupied by Josiah Vose. Vose was a truckman, a profession that involved the movement of goods. The Mill Pond property would have offered an attractive location for this type of business. Vose could have stored goods on his property and possibly avoided wharf fees. The bulkhead and the pier continued to be the main features of the property's waterfront until Pond Street was constructed between 1806 and 1809. The effort needed and monetary investment put into the modification of the waterfront indicates that the occupants of the property considered the Mill Pond to be a valuable transportation route/corridor in the late eighteenth century.

The bulkhead at the Mill Pond site was constructed from square-trimmed timbers stacked in two parallel rows, tied together with timber cross-pieces. Disturbance associated with Phase X construction (Feature 40) removed portions of HN 129. In addition, the Phase X construction included an attempt to chop through HN 287 (Fig. 19). Within the portion of the bulkhead exposed, two cross-tie locations were encountered. At one, the timbers were fastened to the cross pieces by wooden pegs (Fig. V-19). The bulkhead appeared to have been constructed in place, with its internal cavity occupied by both intentional fill and sediments from the Mill Pond. The bulkhead was three timbers high or approximately 4 ft. (1.2 m.) above the Mill Pond bottom (Figs. V-17, V-19, and V-24), on which it rested directly. No evidence of tie-backs was found. Apparently, the weight of the bulkhead structure was sufficient to hold it in place against any anticipated tidal action.

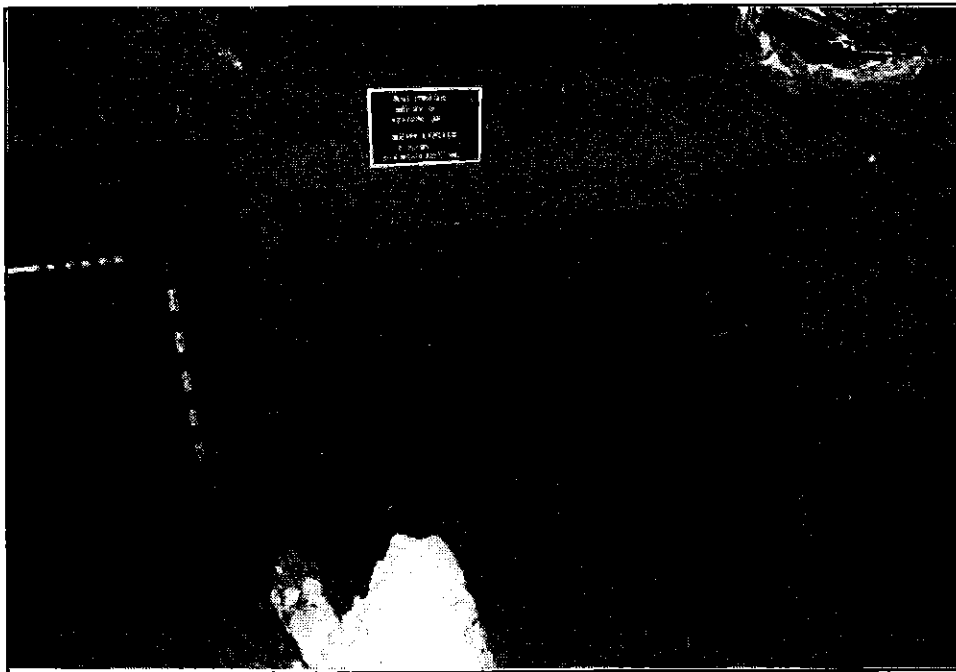


Figure V-24 - Phase IIIb bulkhead (feature 32), showing exterior, facing east (site-grid orientation).

A granite architectural pier and associated builder's trench (Phase X, Feature 40) were located directly adjacent to the section of bulkhead removed (Fig. V-18 and V-23). The builder's trench for this feature abutted the bulkhead and an attempt had been made to cut through the wharf timbers. The effort to cut through the bulkhead by the builders of Feature 40 was apparently abandoned and the granite-block pier was installed next to the bulkhead. This twentieth-century intrusion did not reach the interior of the bulkhead.

The cross-section through the bulkhead provided for the examination of the bulkhead's internal structure (Figs. V-17 and V-25). Power saws were used to cut through the bulkhead timbers. Although no excavations were laid out over this area, the bulkhead deposits were excavated stratigraphically, and artifacts assigned to appropriate Harris numbers. The exterior water-facing timbers of the bulkhead (HNs 129, 287, 288, 301, and 303) ran the length of the portion of the bulkhead that was exposed during the excavations. The horizontal bulkhead timbers had been squared and all bark had been removed. The exposed bulkhead timbers must have been joined to additional horizontal timbers in order for the bulkhead to extend across the length of the property's waterfront. However, no evidence for additional timbers was encountered. Presumably, any evidence of additional horizontal timbers to the north and south was destroyed by later activities (site-grid orientation)(Fig. V-4). The lowest timbers (HN 287, 288, 301, and 302) appeared not to have been joined but simply stacked. The timbers (HNs 299, 300, and 303) that formed the interior timbers of the bulkhead were similarly stacked. The cross-section through the bulkhead (Fig. V-17) indicated that at some point the bulkhead slumped because most of the timbers were not fastened together. Apparently, when a timber split (HN 301) under the weight of the overlying timbers, the bulkhead buckled toward the Mill Pond. The slump appeared to extend the length of the exposed portion of the bulkhead. It is not clear when this slump occurred. Units of stratification interpreted as the Mill Pond sediments (HNs 225 and 226) were identified within the bulkhead (Fig. V-17). The Mill Pond sediments were horizontal, indicating that they were deposited after the bulkhead slumped. The absence of disturbed natural sediments within the bulkhead suggested that the bulkhead slumped during or just after construction.

The builders of the bulkhead may not have been concerned with settlement of the bulkhead because it was not very massive and would not have been subjected to much water action. The diameter of the timbers used in the bulkhead construction varied from 0.7 ft. (21 cm.) for the smallest timber to 1.5 ft. (46 cm.) for the largest.

The only evidence for crosspieces joining the interior and exterior timbers was at the top of the bulkhead and at one location where lower timbers appear to have been joined. The topmost timbers (HNs 129 and 296) of each stack were fastened to one another by crosspieces (HNs 295, 297, and 298). The uppermost timbers were attached to the crosspieces by wooden pegs (HN 353) (Figs. V-19 and V-24). The pegs were square and fitted into round holes, thus disproving one of the fundamental axioms of life. The crosspieces created a cavity between the top timbers and those directly beneath them. The archaeology indicated that the top of the bulkhead was covered with a wooden platform (Feature 18, Phase IIIa), which presumably would have rested upon the top bulkhead timbers. However, no direct stratigraphic evidence for this configuration was encountered, and examination identified only one crosspiece (HN 293) that would have joined the lower timbers (HNs 287 and 288). The lower timber (HN 288) had been notched, the crosspiece (HN 293) set in the notch, and the next timber (HN 287) placed on top of it. It is not known whether this joint was pegged.

The interior cavities created by the crosspiece construction were filled by sediments associated with the Mill Pond (HNs 213, 214, 225, 226 and 227; Figs. V-17 and V-19). These sediments were of interest because they demonstrated that this section of the bulkhead was not filled at the time of construction. In addition, the strata provided evidence for the water level of the pond during the late eighteenth century, since the space had been subject to water action that led to the deposition of water-born sediments within the bulkhead. The lack of construction fill suggested that either the bulkhead structure was not filled or, more likely, that some of the units of stratification identified as natural sediments were redeposited pond-bottom sediments.

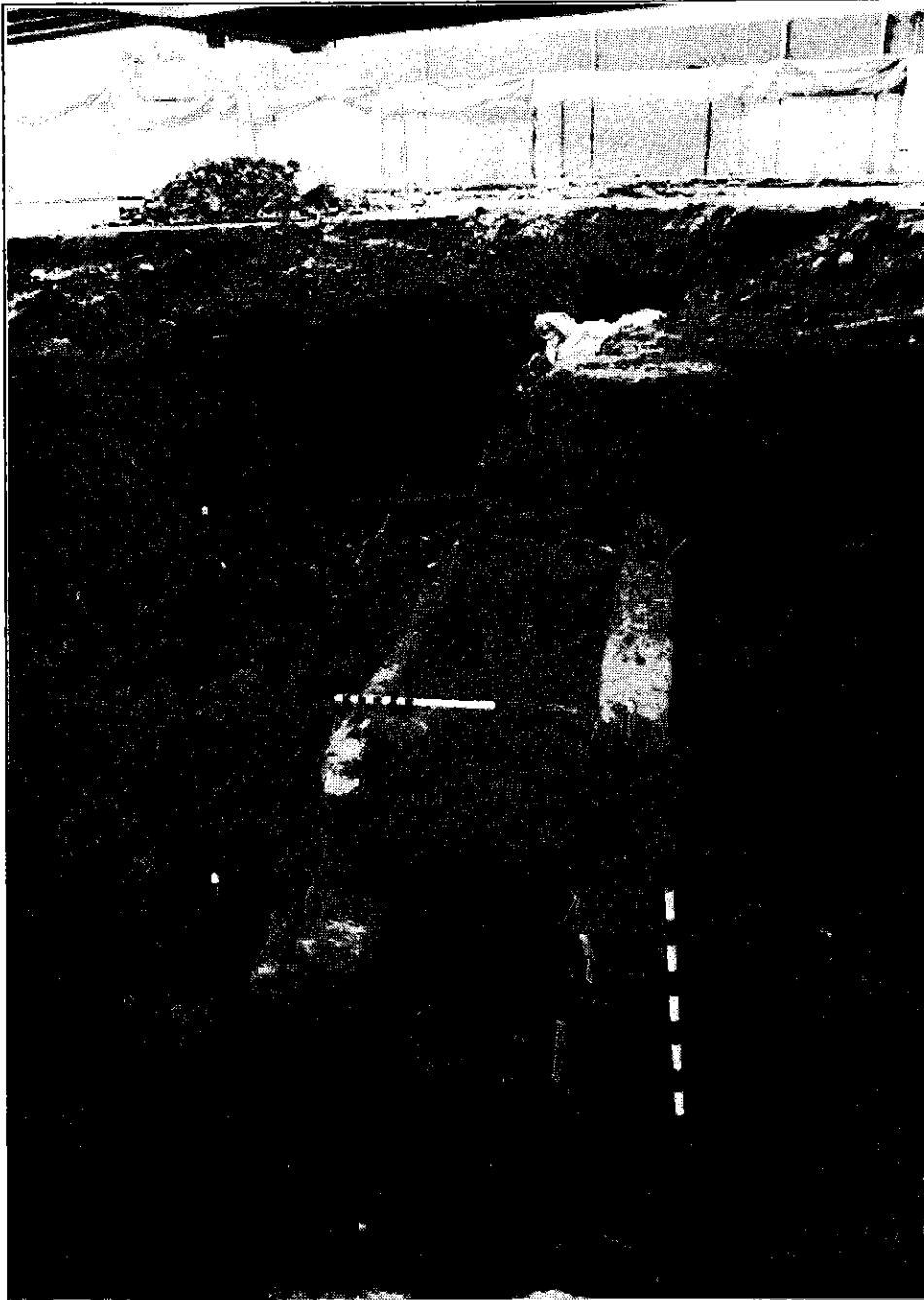


Figure V-25 - Exposed cross-section of bulkhead (feature 32), facing south (site-grid orientation).

An example was HN 227 (Fig. V-17). The profile of Trench 1 and the stripping of the area west of the bulkhead recovered evidence for the pond bottom (HNs 212, 145, and 146) indicating there was approximately 1 ft. (30 cm.) of sediment on the pond bottom. Historic records from the eighteenth century suggest that the Mill Pond was silting in by 1795 (*Boston Sunday Globe* 1908:17). Because it overlay several bulkhead timbers, HN 227 either developed in place or represented redeposited Mill Pond sediment. It is likely, therefore, that the pond in front of the bulkhead was dredged when the bulkhead was constructed and that the sediments produced from the dredging were used to fill the bulkhead.

HNs 225 and 226 were above HN 227 and reflected natural sedimentation of the cavity created between the top of the bulkhead and the crosspieces (Fig. V-17). Both strata, HN 225 and 226, were horizontal, indicating that they were water-deposited sediments. Unit of stratification HN 225 contained thin layers of stratification, indicating that when this unit was developing the formation processes caused differential layering to develop. At least four of these layers were observed within HN 225. The deposit resembled the varved sediments that form at the bottom of lake beds and result from interaction of seasonality on sedimentation rates. It is not clear whether this deposit was created by factors related to climate, tides, or a combination of these. HN 226 was directly beneath HN 225 and was the result of a different depositional process than HN 225. This matrix represented pond sediments, but no "micro" layers were observed within it, suggesting that it was deposited as one event. Both HN 225 and HN 226 reflected deposition and formation processes interacting within the short period when the bulkhead was built, ca. 1795, until the first decade of the nineteenth century, when this section of the Mill Pond was filled.

Numerous seeds were recovered from the units of stratification within the bulkhead. The floral material reflected the local and regional environment during the eighteenth century, its high state of preservation being a result of anaerobic conditions. Artifacts were also recovered from these units of stratification but not in appreciable amounts. The MCD of the matrices within the bulkhead was 1776.38, but was based on only 14 ceramic sherds with defined date ranges. The TPQ of the interior bulkhead deposits was 1765.

Data-recovery investigations identified a pier that extended into the Mill Pond from the bulkhead (Figs. V-4, V-26, V-27, and V-28). (See preceding discussion of the distinctions among the terms *pier*, *dock*, *wharf*, and *quay*.) Surviving portions of the pier (Feature 41) included posts, sleepers, and deck planks. The pier abutted the bulkhead, but its surviving portions were not attached to the bulkhead. Evidently, the pier was constructed after the bulkhead slumped, because the interior posts, which abutted the bulkhead, were not displaced. The interior posts (HNs 320, 321, and 326) were set against the bulkhead and rested on boards (HNs 324, 325, and 327) placed on the Mill Pond bottom (Fig. V-19). The exterior posts (HNs 156, 157, 322, and 323) rested on two timber sleepers (HNs 160 and 161) (Fig. V-26). The deck of the pier consisted of planks, evidence of which survived only in Excavation Units 17 and 18. Two support posts (HNs 159 and 354), which would have added structural support to the exterior posts, were also identified.

Evidence suggested that the pier was at least 10 ft. (3 m.) in depth and ran along the entire front of the bulkhead. The exterior posts and pier decking survived only in the area of Trench 1 and Excavation Units 17 and 18. To the north of these units, the pier was destroyed by construction activities associated with a well (Phase VIII, Feature 27), a granite architectural pier (Phase X, Feature 40), and by activities associated with the construction of the elevated highway in the 1950s. However, some interior posts (HNs 320, 321, and 326) survived in this area, providing an indication that the pier extended to the north of Excavation Units 17

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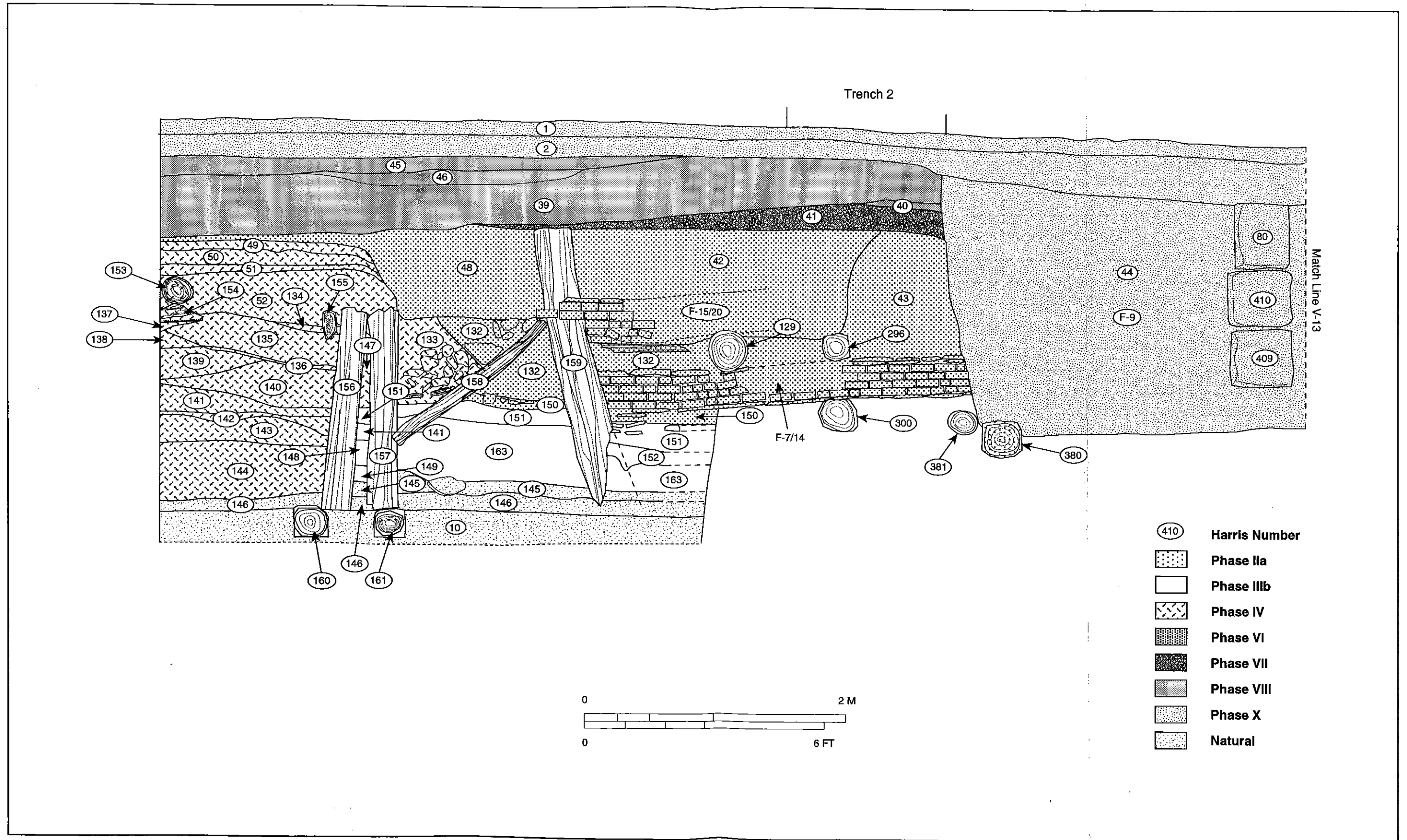


Figure V-26 - Trench 1, north profile, west end (site-grid orientation).

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Figure V-27 - Trench 1, north profile, showing pier posts (Phase IIIb, feature 41), facing north (site-grid orientation).

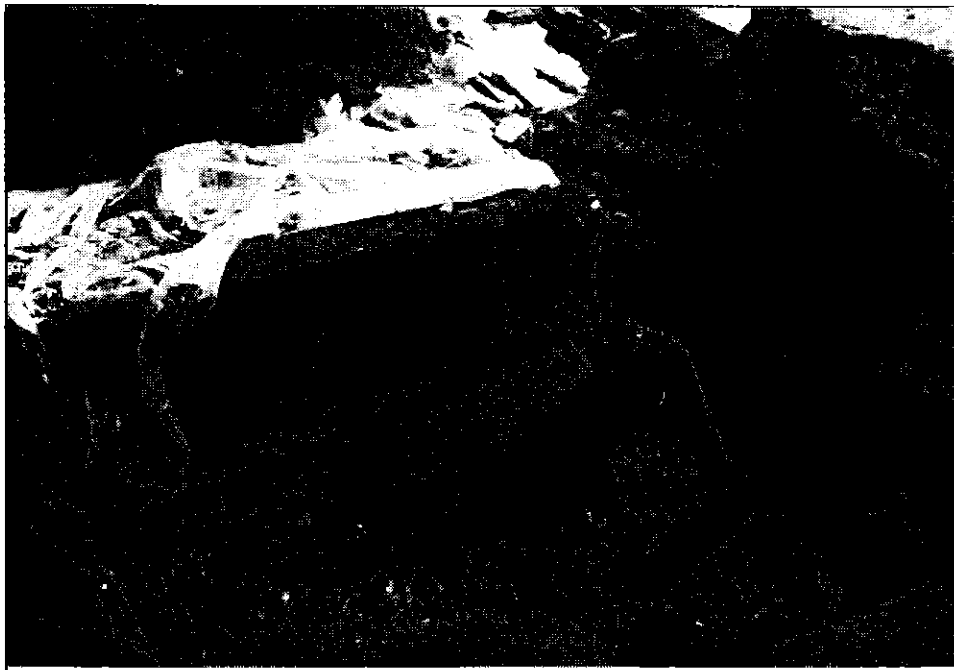


Figure V-28 - Excavation unit 17, showing pier decking (Phase IIIb, feature 41), facing southeast (site-grid orientation).

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and 18. It is not clear whether the pier extended further south, as several large disturbances (Phase VI and Phase X) were adjacent to the south side of Feature 41.

At one point, manual excavation of the pier feature was halted because of suspected hazardous contaminants within several units of stratification. Following procedures outlined in the Health and Safety Plan, excavations were terminated until the suspected soil matrix could be tested. Subsequent soil testing by Camp Dresser & McKee (CDM) and air-quality monitoring by Arthur D. Little, Inc. (ADL), revealed the presence of volatile organics (primarily lubricating oil and fuel oil). The soil tests indicated that the concentration of contaminants in the soil matrix was at a low enough level that the matrix did not have to be treated separately from other soil matrices. However, air-quality monitoring by ADL indicated that employee exposure to the contaminant vapors was unacceptable, and should be minimized unless personal protection equipment was used. The contaminants were restricted to the matrix on top of the pier decking (Phase IV, fill). Accordingly, a decision was made, in consultation with ADL, to remove the contaminated matrix with a backhoe and allow the volatile contaminants to evaporate. This procedure kept employee exposure to a minimum and, after additional air-quality monitoring by ADL, enabled a sample of artifacts to be collected. The source of the contaminants appears to have been a builder's trench to a twentieth-century foundation element (Phase X, Feature 40), directly north of Units 17 and 18. The fill from this feature was removed by back hoe.

Trench 1 (Figs. V-26 and V-27) exposed the structure of the pier. The profile of this section of Trench 1 revealed a cross section of the pier, enabling an examination of the construction techniques used. Further stripping adjacent to the bulkhead revealed the interior posts of the pier (Figs. V-19 and V-24). The pier was constructed on 0.5 x 0.5 ft. (15 x 15 cm.) posts. The interior posts (HNs 320, 321, and 326) adjacent to the bulkhead rested on board sleepers (HNs 324, 325, and 327), but were not attached to them (Fig. V-19). The sleepers rested in the sediments at the base of the pond (HNs 145, 146, and 212). The interior posts were not attached to the bulkhead, they simply abutted it. While these interior posts served to support the pier deck, they could not have been the primary load-bearing supports because they were neither secured to the bulkhead nor anchored in the ground.

The posts that together formed the exterior supports of the pier were constructed in a different fashion from the interior posts. The exterior posts (HNs 156, 157, 322, and 323) rested on, but were not attached to, large timber sleepers (HNs 160 and 161) (Fig. V-26), which were laid into the subsoil (HN 10) and were parallel to the bulkhead. The profile of Trench 1 (Fig. V-26) suggested that the sleepers and posts were buried in the pond bottom, as several strata were positioned beneath the pier decking but above the Mill Pond bottom sediments. These strata (HNs 151, 152, and 163) may have represented fill added to stabilize the pier, but whether this was the case could not be determined before the contaminated soils were encountered and investigations in this portion of the site suspended. Be that as it may, the exterior posts carried much of the load of the pier structure. The fact that two exterior posts were positioned adjacent to one another supports this interpretation. The profile of Trench 1 (Fig. V-26) shows that one of the exterior posts (HN 157) was connected to another post (HN 159) by a diagonal brace (HN 158) a little more than halfway between the exterior and interior posts. This architectural element may have been needed for support, while HN 159 may have functioned to anchor the pier. This arrangement survived at only one location, but another post (HN 354) was encountered opposite HN 326 that suggested it served a function similar to that of HN 159. That post and support were connected by mortise-and-tenon joints. (The mortise and tenon is a method of joining wood in which one piece of wood has a rectangular hole or mortise to accept a projecting section of wood, a tenon, cut to fit into the mortise.) The mortise cut was in the post (HN 157) and the tenon cut was in the support

(HN 158). The joint between HN 158 and 159 had been previously disturbed and thus could not be examined. It is not clear why this method of support did not incorporate any of the interior posts.

The decking for the pier survived in Excavation Units 17 and 18 (Figs. V-4 and V-18). Along the exterior edge of the pier, the deck planks were reinforced by a beam (HN 155) that stretched between the exterior posts. Because the decking planks were parallel to the bulkhead, perpendicular supports must have run from the exterior posts to the interior posts and presumably the bulkhead. Neither these postulated perpendicular supports nor any interfaces between the plank decking and the interior support posts of the pier or the bulkhead have survived. The pier decking was constructed from planks at least 1.2 ft. (36 cm.) wide. All the planks had been disturbed by later features, but were found to be at least 6 ft. (1.83 m.) in length.

The pier was interpreted as extending off the top of the bulkhead at least 10 ft. (3 m.) into the Mill Pond in ca. 1795. The maximum depth of the Mill Pond at the pier can be figured from the top of the bulkhead to the top of the sediments interpreted as pond bottom. The space between these units of stratification indicated that the maximum depth of the water at the pier was 3.8 to 4 ft. (1.16 to 1.23 m.), assuming the water level reached the top of the bulkhead. The stratigraphic sequence at the front of the pier suggested that the bottom of the pond (HN 142) was only 2.5 ft. (76 cm.) below the deck. Natural sedimentation within the bulkhead (HNs 225 and 226) also indicated the water was at least 2.5 ft. (76 cm.) in depth. This depth would have reflected the high tide mark and suggested that only small, shallow-draft boats could have accessed the pier. Historic documents indicated that at low tide only rafts and canoes could travel the creeks leading from the Mill Pond floodgates (see historic background, section IV).

In general, the timbers for both the pier and the bulkhead displayed a high state of preservation, due to their burial in anaerobic conditions. Neither pier nor bulkhead timbers displayed evidence of rotting while they were submerged in the Mill Pond. In addition, there was no evidence of any ship-worm infestation (nor, parenthetically, was there any shell to provide evidence of the natural habitat within the Mill Pond). The combination of the anaerobic environment and the relatively short time span during which these timbers were exposed to the elements is the probably explanation of their good state of preservation.

It is clear that Josiah Vose intended to use his Mill Pond property in his profession as a truckman, initiating the construction of waterfront features that would have enabled him to unload and load goods in this portion of the property. It is doubtful that he would have undertaken the effort and investment if the pond adjacent to the property was silted up or water access was otherwise infeasible. However, Vose may have undertaken repairs simply because the waterfront edge of his property had become unsightly.

8. Phase IIIa: Platform over Bulkhead, ca. 1795

The units of stratification associated with this phase were confined to the structural elements of a wooden platform (Feature 18) that rested on top of the bulkhead (Phase IIIb) and the fill directly associated with the construction of this feature. As stated in the discussion of Phase IIIb, although this phase has been separated from the other waterfront features that were constructed ca. 1795, they should be viewed together in the context of the same late eighteenth-century historic landscape. The platform feature was considered a separate unit for the artifact analysis because of the large amount of cultural material recovered from this unit of stratification. Units of stratification associated with this phase were encountered in Trench 2 and Excavation Units 11 and 12. However, within Trench 2, the feature was identified adjacent to Excavation Units 11 and 12 only. The phase deposits dated to ca. 1795.

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The MCD for the fill deposit was 1795.63 and the TPQ was 1795. The PSBD was 1729, but the calculated date is not considered valid because the sample size, 11 stem fragments, was too small to yield a valid date.

Once the bulkhead structure had been completed, the area between the end of the pre-1790s bulkhead, basically the surface of Phase V, and the bulkhead structure was filled. The addition of fill (HNs 91 and 92) in this area would have created a level transition to the top of the bulkhead (Fig. V-17 and V-29). Considering the small extent of this phase, the amount of faunal material recovered was very large. Apparently, the fill deposit represented refuse from a single time period or depositional event. The units of stratification encountered (HNs 91 and 92) did not intrude into earlier strata. In turn, the wood platform effectively sealed the fill deposit from intrusion by later site activities. These units of stratification were deposited during the tenure of Josiah Vose on the property, but it was not clear whether the deposit was associated with the property owner.

Once the top of the land surface and bulkhead had been leveled, a wooden platform (Feature 18) was constructed on the surface. The dimensions of the platform are unknown, since the surviving remnant was encountered only in Excavation Units 11 and 12 and in the adjacent section of Trench 2. The surviving portion of the platform sloped 0.56 ft. (17 cm.) toward the water's edge. Whether the platform was present along the entire length of the bulkhead could not be determined. The top of the bulkhead and platform, if present, were disturbed to the south, west, and north of the platform by intrusive features associated with the construction of the 1920s parking garage (Phase X). It is likely that the platform ran the length of the bulkhead adjacent to the pier and provided a stable transition to the fast-land.

The remnant of the platform that has survived was constructed by placing planks (HNs 90, 367, 368, 369, 370, 372, and 373) on the top of ground sills (HNs 371 and 374) (Fig. V-30). The wood planks that formed the deck of the platform were laid perpendicular to the long axis of the bulkhead. This differed from the arrangement of the deck planks of the pier, which were laid parallel to the bulkhead's long axis. Not enough evidence has survived to determine whether the platform extended along the entire length of the bulkhead or if the platform and pier were connected. The width of the platform could not be determined, because of intrusive features associated with later phases. The maximum width of the platform may have been 12 ft. (3.67 m.) if it extended to the edge of the bulkhead.

Together with the bulkhead and pier, the platform would have been in use until the area east of Pond Street was filled, ca. 1811. Pond Street was constructed between 1806 and 1809, apparently as a causeway opposite the project. This interpretation is based on examination of the 1807 plan for Pond Street (Fig. V-31). The area within the boundaries of the east shore of the Mill Pond and Pond Street was not filled by the Mill Pond Corporation until ca. 1811 (Seasholes 1994:203). Since there is no indication that, once Pond Street was constructed, vessels could access the east waterfront of the Mill Pond, the use of the site waterfront is likely to have been essentially ended when Pond Street was constructed. There is no indication that Pond Street included a bridge that would have provided access to the east shore of the Mill Pond. The units of stratification associated with the Mill Pond Corporation's filling activities are discussed as Phase IV.

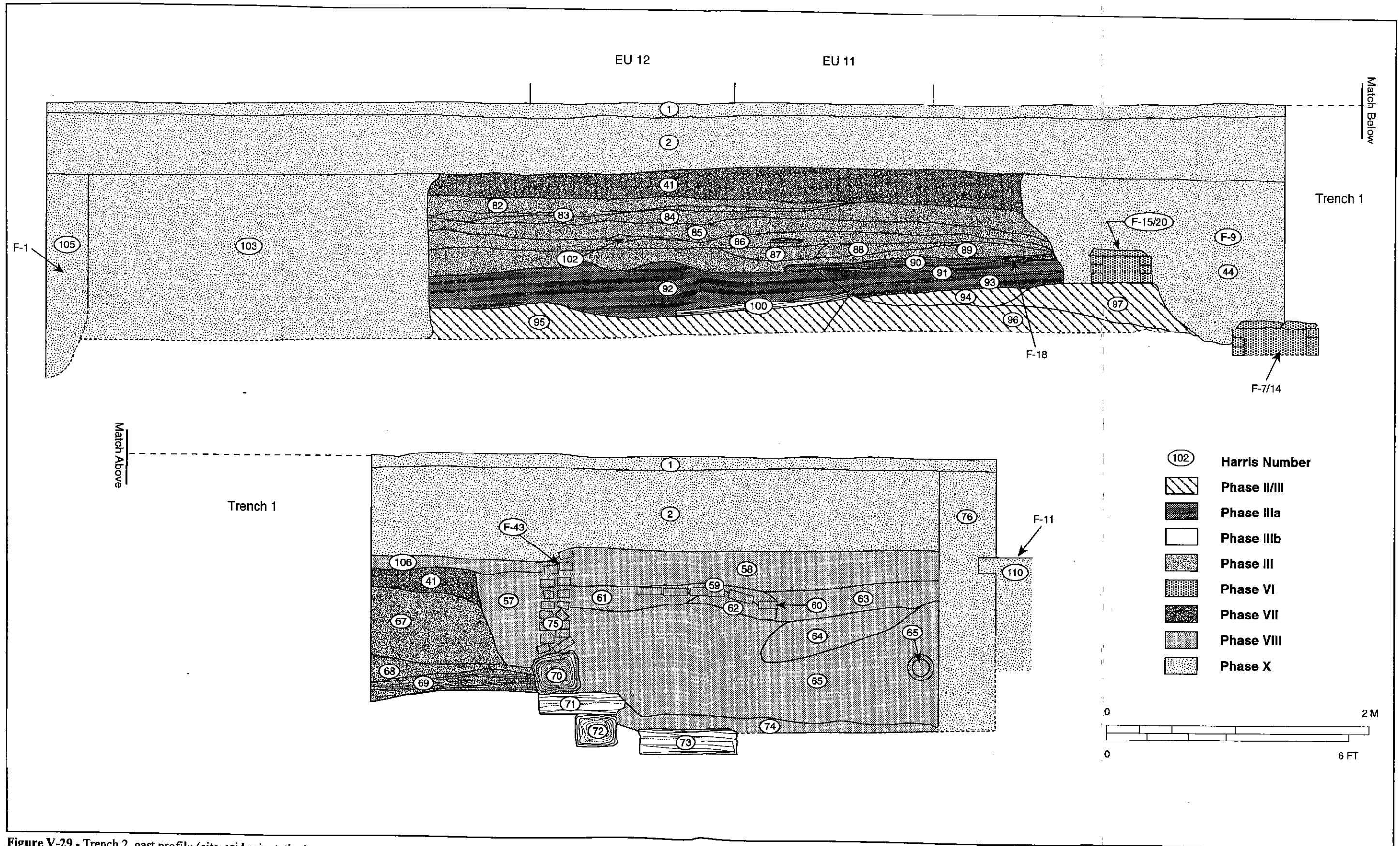


Figure V-29 - Trench 2, east profile (site-grid orientation).

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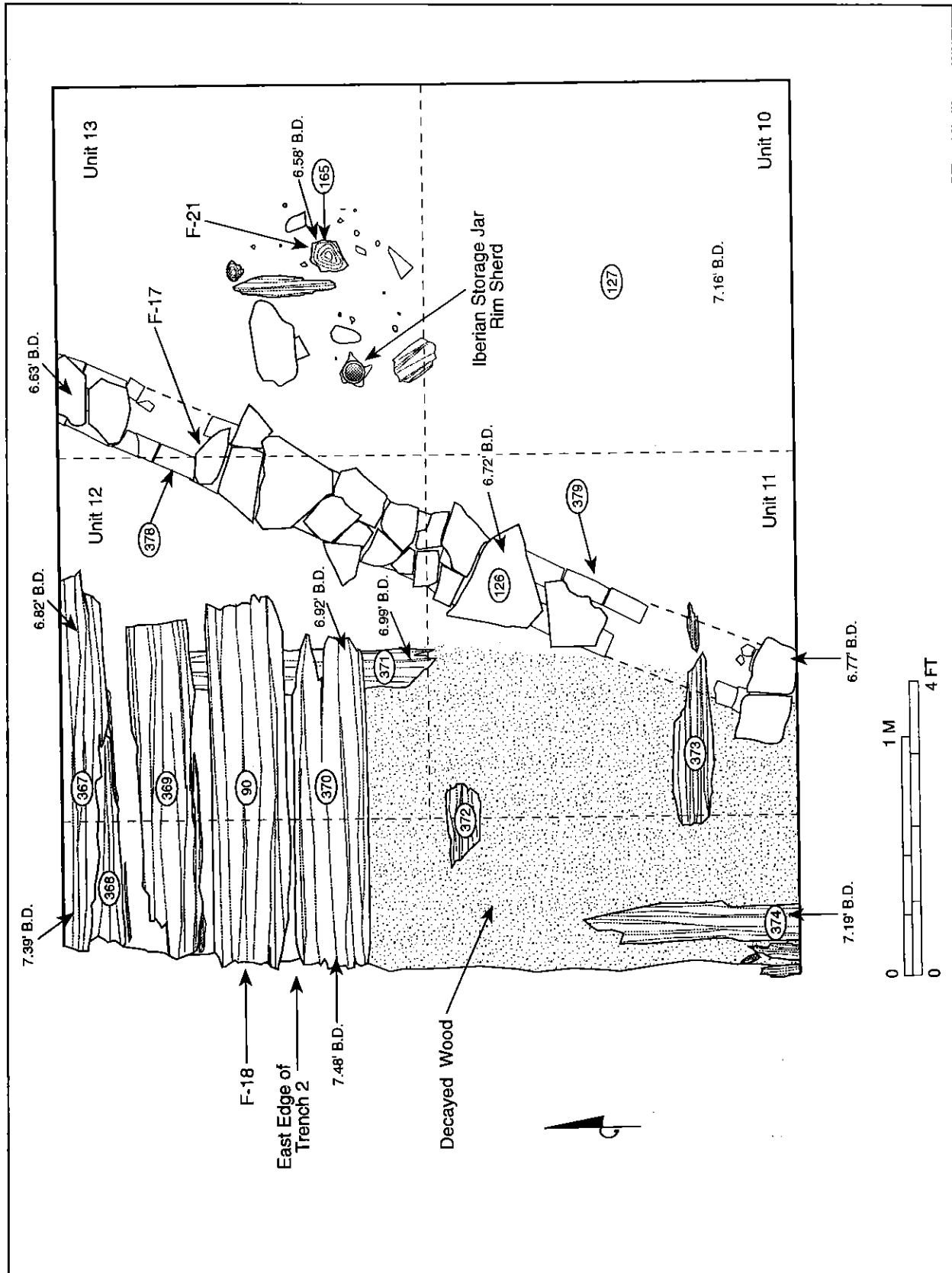


Figure V-30 - Plan view of features 17, 18, and 21, exposed at the top of HN 127.

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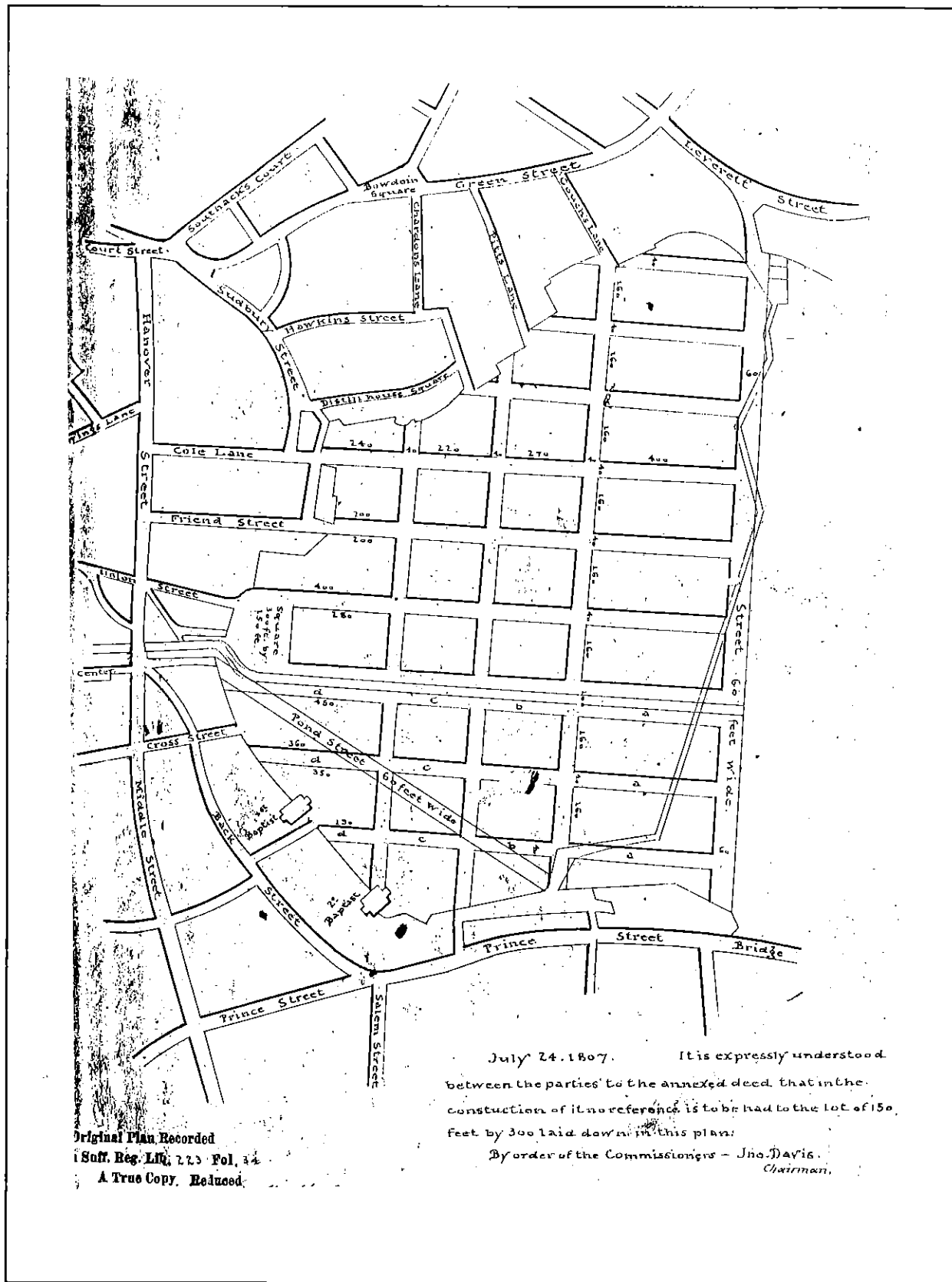


Figure V-31 - 1807 plan for Pond Street.

9. Phase III: Fill Episode, ca. 1790s

This phase contained units of stratification that corresponded to activities taking place on the wharf surface after the bulkhead and pier were constructed in ca. 1795. Like the strata associated with Phase V, the strata within Phase III have been modified by activities associated with later phases. The strata within Phase III were identified in Trench 2 and in Excavation Units 10, 11, 12, and 13. The strata within this phase were found to be horizontally restricted. Units of stratification associated with this phase were not identified on the east side of the site. It was not clear whether the construction of a modern concrete foundation destroyed evidence of this phase to the east or whether it was never present at all. Phase III strata probably reflect fill deposited on the waterfront portion of the site around the turn of the eighteenth century (Figs. V-17 and V-30). The limited horizontal extent of Phase III deposits, as well as the intrusions into Phase V deposits by Phase III or later materials, may reflect surface grading prior to Phases VI and VII. Presumably, the ground surface would have been prepared as part of the installation of the cobble paving (Phase VII) associated with the nineteenth-century stable, thus destroying or modifying Phase III strata. However, Phase III was not deposited as a bed for the cobble paving because several drains (Phase VI) were installed prior to the installation of the Phase VII paving. It is possible that Phase III units of stratification are related to Phase IV. Presumably, the property's waterfront would have been landscaped when the Mill Pond was filled. Therefore, this phase represents fill added to the waterfront portion of the property rather than an occupation surface associated with site activities.

The MCD of this phase was 1789.67. The TPQ was 1820, with a corrected TPQ of 1795. The pipe stem bore date was 1736.14 but was based on only 26 pipestem fragments and therefore should not be considered valid. No other artifacts with time-sensitive ranges of manufacture were recovered.

10. Phase IV: Mill Pond Corporation Fill, ca. 1811

This phase contained the units of stratification associated with the abandonment of the waterfront features and the filling of this section of the Mill Pond. Late eighteenth-century construction of waterfront features at the property (Phases IIIa and IIIb) indicated that the Mill Pond continued to be a viable transportation route for the occupants of the property until at least the construction of Pond Street ca. 1806-1809. Once Pond Street had been constructed, the site's waterfront must have been abandoned because access to the rest of the pond would have been lost.

Units of stratification associated with this phase were present only on the west side of the site and encountered only in Excavation Units 17 and 18 and at the west end of Trench 1. Excavations were extended as far to the west as possible. However, exposure of these units of stratification was limited by the presence of a bent, spread footer, and associated disturbance belonging to the elevated highway adjacent to the west edge of Trench 1 and Excavation Unit 18. The units of stratification west of the pier and Excavation Unit 18 were not investigated by manual excavations because of safety concerns, namely that there was no way to step back the excavation to allow for the placement of excavation units.

Phase IV units of stratification overlay the pier (Phase IIIb, Feature 41). Apparently, when the pier was abandoned, fill was simply dumped on the pier decking, collapsing it. The wood of the deck was well preserved, suggesting that the pier did not collapse from neglect or abandonment. The fill (HN 150) on top of the pier decking was manually excavated until contaminants were encountered. As discussed previously (Phase IIIb), once the volatile organics were encountered, hand excavations were suspended and the remaining matrix was removed with a back

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hoe. The Phase IV artifact assemblage consisted entirely of artifacts from HN 150. Although the matrix removed with the back hoe was not screened, artifacts were collected from it once ADL determined that all of the contaminants had evaporated. Seventeen units of stratification were identified as fill to the west of the pier (Fig. V-26). These HNs were encountered only in Trench 1. Soil descriptions of the different HNs indicated that a variety of soil types were being used as fill for the pond. The soil types ranged from clay loams to sandy loams containing architectural debris (refer to Appendix B soil descriptions). For safety reasons, it was not practical to obtain an artifact sample from these HNs through manual excavation. Specifically, the presence of contaminants required the removal of a large amount of soil adjacent to HN 150 and this portion of the excavation could not be stepped because of the proximity of structural elements associated with the elevated highway.

One of the strata encountered may have represented an exposed surface or hiatus in filling. HN 136 (Fig. V-26) was a thin stratum of loam between two fill strata. This probable surface suggested that this portion of the pond was only partially filled, after which the top of the fill episode (HNs 139 and 140) was briefly exposed before more fill was added to bring the area to the desired grade.

The MCD for this deposit was 1787.89. The TPQ was 1820, with a corrected TPQ of 1795. The date obtained from the pipestem bores was 1716.79. If the dates obtained for the sealed deposits in Phases IIIa and IIIb were correct, the Phase IV dates were too early. In addition, the historic record indicates that the Phase IV units of stratification were deposited in the first decade of the nineteenth century and were associated with the filling of the pond by the Mill Pond Corporation by 1811 (Seasholes 1994:203). Consequently, the dates obtained from the artifacts recovered from the Phase IV strata reflect the dates of the artifacts within the matrices, but not the date of deposition.

11. Phase VI: Installation of Drains, First Quarter of the Nineteenth Century

The data recovery investigations encountered five drains, representing two drainage lines, dating to the early part of the nineteenth century (Fig. V-4 and V-28). In addition, excavators identified a separate drain intake box (Feature 16) that postdated the drains, but predated Phase VII deposits. These drains functioned to move water through the site from adjacent areas of the property rather than from the site area itself. Stratigraphically, these drains were earlier than Phase VII, but remained in use throughout the nineteenth century. There was evidence that the drains had been repaired and that this repair had occurred after the Phase VII cobble surface had been laid down. The repairs provided the false impression, at several locations, that the cobble surface of Phase VII predated the drains (Figs. V-17 and V-26). The main drains (Features 15/20 and 7/14) were sloped toward the southwest, with feeder drains sloped toward the main drain. Neither the origin nor the terminus of the drains was encountered during the excavations. The drain intake box (Feature 16) was higher and did not connect to the drain (Feature 7/14) that passed beneath it. It is likely that the drains functioned to carry water away from a nineteenth-century building located on Salem Place or buildings on the historic lot fronting on Cross Street or buildings fronting on Pond/Endicott Street, but it is not clear where these drains would have discharged their contents. The installation of the drains impacted strata dating to the majority of phases. The only phases that were not cut through by the drains were Phases IIa, IIb, and II.

Construction of all five drains was similar except that the drains varied in size (Figs. V-32, V-33, and V-34). Construction involved the excavation of a long trench to hold the drain structure. The base of the drain was constructed from boards laid perpendicular to the drain's long axis; they were not nailed together and appeared simply to have been laid in place. The sides of the drains were of dry-laid brick. All the drains were the same

height, three brick courses, and all were capped with slate slabs except for a section of drain exposed in Unit 20 that had been repaired and covered in wood.

The two main drain lines (Features 15/20 and 7/14) ran from northeast to southwest. Two feeder drains (Features 24 and 29) intersected Feature 15/20 and one feeder drain (Feature 17) intersected Feature 7/14. The intersections of the drains did not differ in construction from the drains themselves. The intersections were tied in, but no special bonding techniques were used to create them. The feeder drains appeared to intersect the main drains at odd angles; the reasons for this are not clear. It should be noted that the intersection of Features 7/14 and 29 was not exposed, but a projection of the drains indicated that they did intersect. Stratigraphically, Feature 15/20 and its feeder drain were constructed after Feature 7/14 and its feeder drains. However, all the drains predated Phase VII.

Installation of one drain (Feature 7) had disturbed portions of the bulkhead (Phase IIIb) (Fig. V-4 and V-26). The installers cut through one timber, but abandoned their efforts to cut through other timbers and fitted the drain between bulkhead timbers, thus creating the impression, in the Trench 1 profile, that the drain was stratigraphically earlier than portions of the bulkhead. In addition, a feeder drain (Feature 24) had destroyed portions of the pier decking and Mill Pond fill.

In general, all the drains had sediment within them, but, except where one drain had been repaired and the repair had collapsed, the drains did not appear to have been clogged or obstructed. However, construction activities associated with well construction in Phase VIII and a Phase X granite architectural pier had destroyed the drains that entered the site from the north. It is likely that the drains continued to function in some capacity throughout the nineteenth century. Construction associated with the 1920s garage most probably ended the usefulness of these drains.

The gradients of the drains varied over the length of the sections exposed. The main drains sloped approximately 1 ft. (30 cm.) over 65 ft. (20 m.). Specifically, Feature 15/20 sloped 1 ft. (30 cm.) from where it was exposed in Excavation Unit 15 to where it was exposed in the east profile of Trench 2 (Figs. V-4 and V-29). Feature 7/14 sloped 0.71 ft. (22 cm.) from where it was exposed in Excavation Unit 9 to where it was exposed in the East profile of Trench 2 (Figs. V-4 and V-29). The gradients of the feeder drains for Feature 7/14 also varied. Feature 24, sloped 0.5 ft. (15 cm.) from where it was exposed in the west wall of Excavation Unit 18 to where Feature 24 intersected with Feature 7/14. Feature 7/14's other feeder drain was approximately level over the course of the segment exposed in Excavation Units 20 and 21. Feature 17, the feeder drain for Feature 15/20 was also approximately level over the length exposed in Excavation Units 11, 12, and 13. Except for Feature 24, the gradient of the drains was not very steep; therefore, water movement through the drains would not have been swift.

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A drain intake box (Feature 16) was encountered at the west end of the site (Figs. V-4 and V-35). Stratigraphically, this feature lay between the drains and the Phase VII cobble paving. The cobble paving covered the associated builder's trench to the feature. In addition, Feature 7/14 ran approximately 1 ft. (30 cm.) beneath the intake box and was not connected to it. The intake box was approximately 3 x 3.5 ft. (91 x 1.06 m.) and constructed of brick. The surviving portion of the feature was 2 ft. (60 cm.) deep. Pipes entered the intake box from the west and east; however, their course could not be traced. The intake box was exposed by Trench 1 and by back-hoe stripping. Although the feature's relative stratigraphic position could be determined, the feature could not be associated with any other matrices.

12. Phase VII: Stable, about the First Quarter of the Nineteenth Century

This phase is represented by one unit of stratification, HN 41 (Fig. V-17, V-26, V-28). The cobble paving and the matrix in which was set HN 41, initially identified during the 1989 site examination (CU 9), represented a nineteenth-century stable occupation that was encountered in several excavation units (8, 10, 11, 12, and 13) and in Trenches 1 and 2. The cobbles were 5 in. (13 cm.) in diameter and formed a cobble paving that covered an open space on this portion of the lot throughout the nineteenth century (Figs. V-36 and V-37). This space functioned as part of the adjacent stables.

This unit of stratification (HN 41) did not survive across the entire site, although it was identified in five excavation units (8, 10, 11, 12, and 13) and in both trenches. The cobbles were not present on the east half of the site. The 1989 site examination identified the cobbles as adjacent to the west side of Excavation Unit 14, but no evidence for cobbles was identified during the data-recovery excavation of Unit 14. To the west, the cobble paving extended at least to the edge of Excavation Unit 17. Either construction associated with Phase VIII and Phase X features destroyed much of this stratum or it was never present at this location.

HN 41 was either the first or one of the first strata encountered beneath the modern parking (HN 1) and bedding material (HN 2) (Figs. V-26 and V-29). Consequently, the horizontal dimensions the deposit were difficult to determine because of the extent of Phase VIII and X disturbances. Examination of the 1867 Sanborn (Fig. V-36) and 1874 Hopkins maps (Fig. V-37) provided insight into the

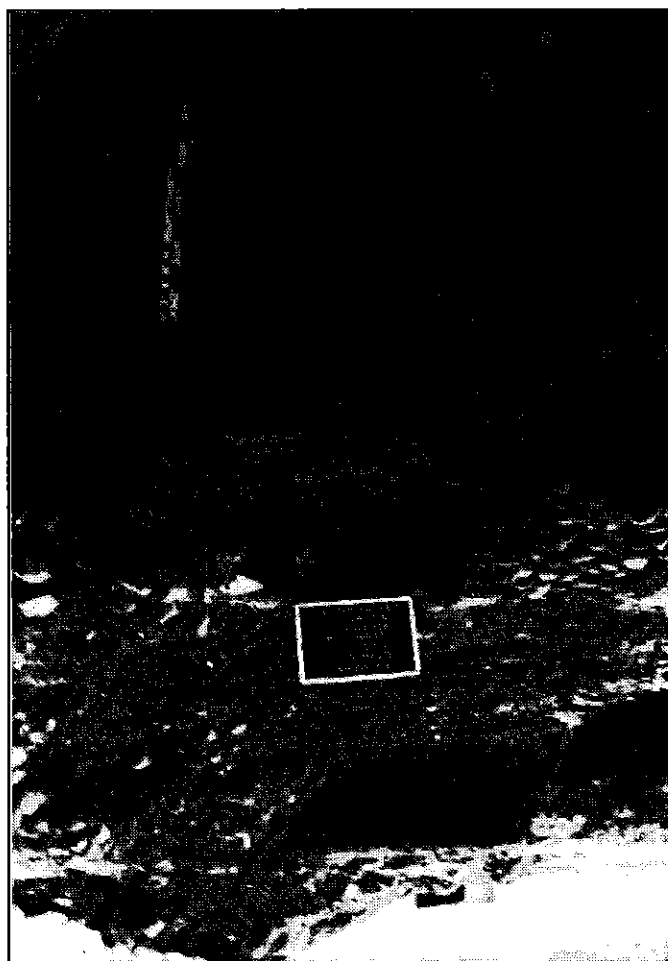


Figure V-35 - Drain intake box (Phase VI, feature 16) exposed, facing south.

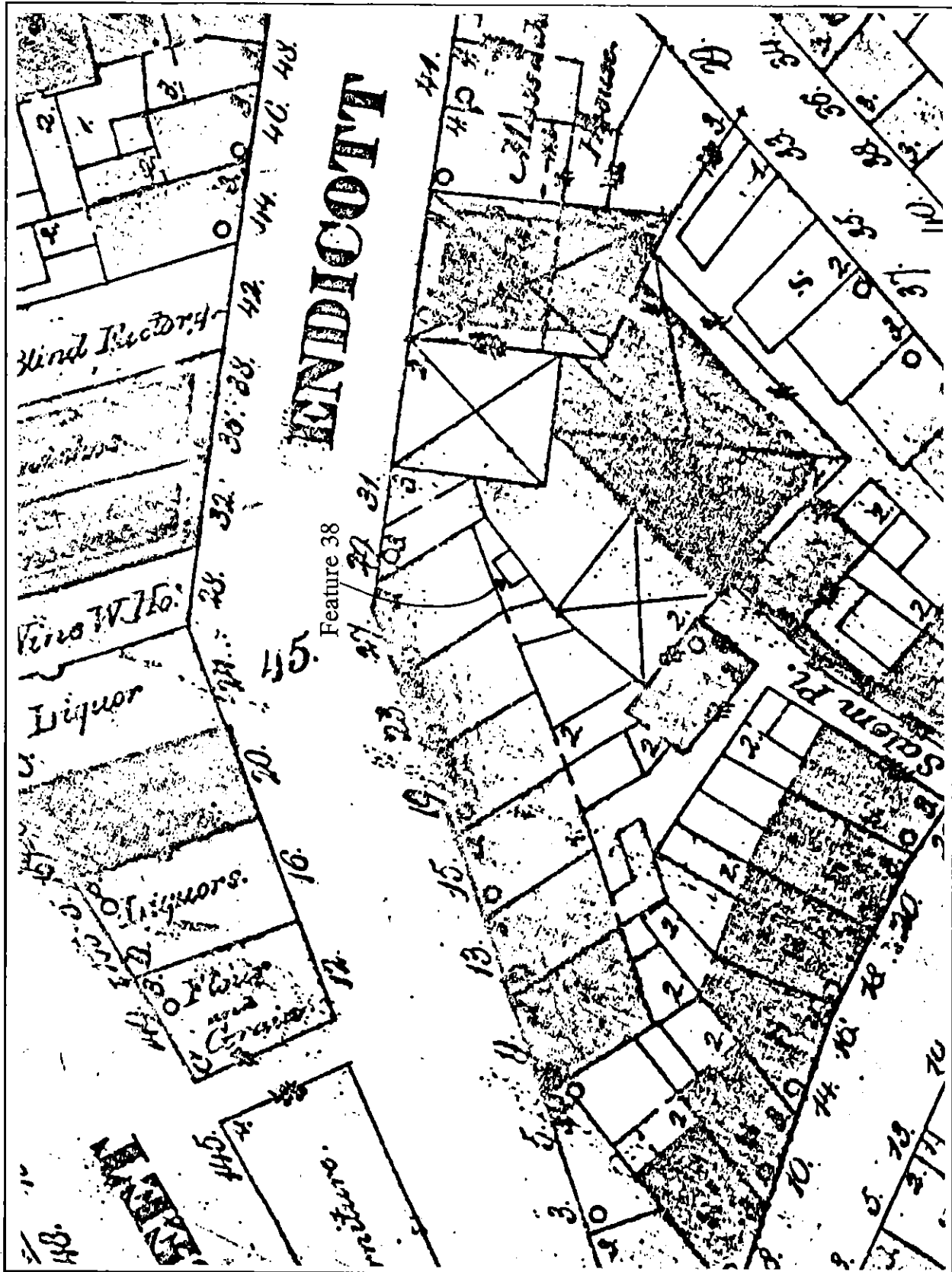


Figure V-36 - Detail of 1867 Sanborn map showing open space and feature 38 (Sanborn 1867).

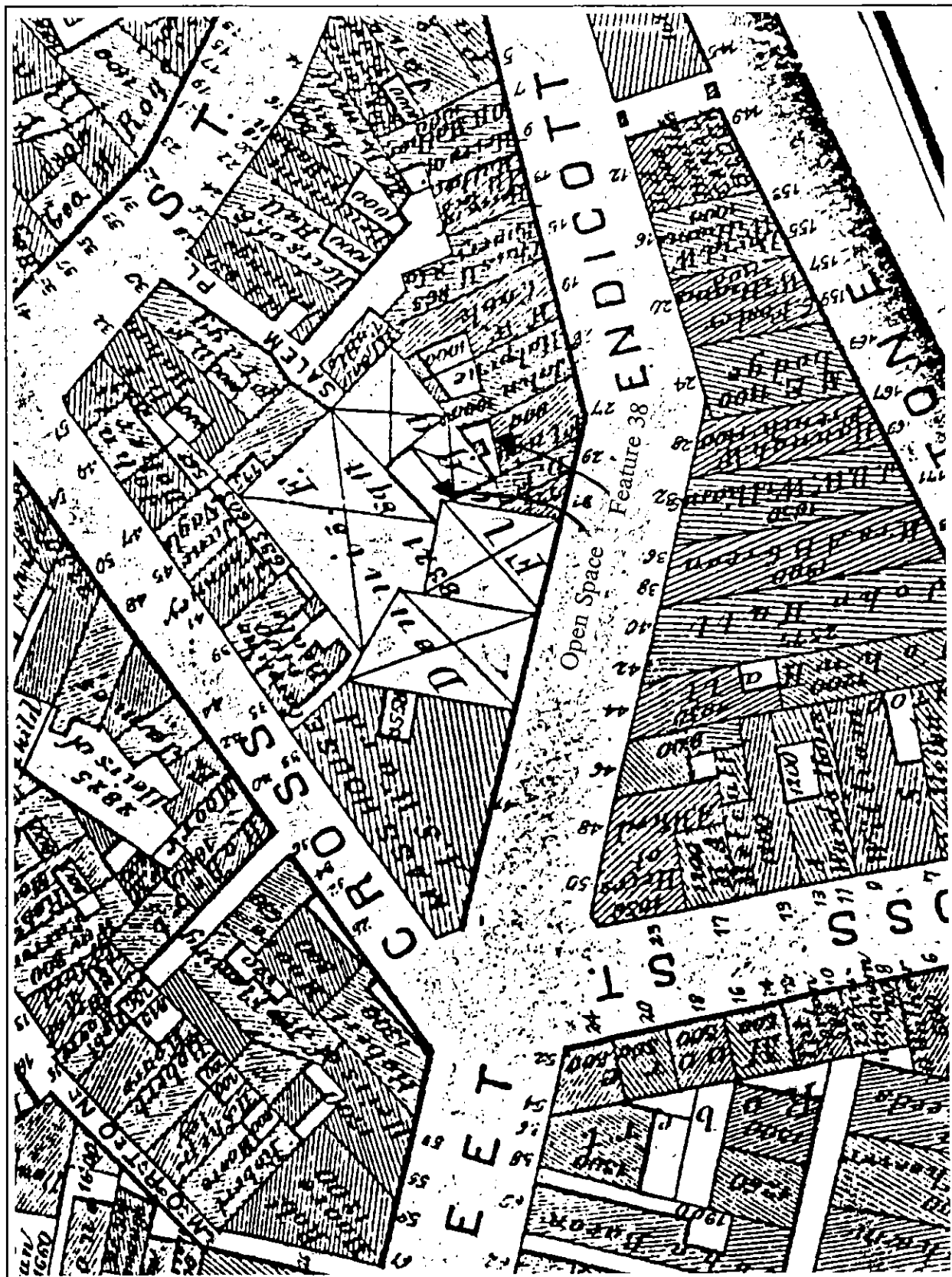


Figure V-37 - Detail of 1874 Hopkins map showing open space and feature 38 (Hopkins 1874).

dimensions of the cobble-paved open space. It is probable that HN 41 did not extend east of Excavation Unit 14 because there would have been a stable building over this portion of the site. To the west, the corner of another building would have lain approximately over Excavation Unit 17. To the east, the cobble paving (HN 41) was identified in Excavation Unit 8, indicating that the paving extended to the south property line. North of Excavation Units 11 and 13 disturbance from Phase X building events had destroyed any evidence of HN 41 at this location. Based on the stratigraphic evidence encountered during the mechanical stripping of this location, no association could be made between the cobble paving and two Phase VIII wells, which were located along the north edge of the open space paved by HN 41. During the nineteenth century, the cobble paving served as an open space for the stables, with the tops of the wells set into the paving.

Artifacts were recovered from the matrix around the cobbles. The MCD for HN 41 was 1801.26. The TPQ was 1842. The pipe stem bore date was congruent with the MCD 1814.52, but was based on only 15 pipe bores. No other time-sensitive artifacts were recovered from this matrix. Presumably, most of the artifacts recovered from the matrix surrounding the cobbles were residual. In effect, the cobble paving of the stable would have sealed the earlier deposits. In addition, artifacts would not have accumulated on the surface of the cobble pavement in large quantities. It is likely that, once this area became a stable and was paved, the surface was easily maintained and refuse was periodically removed. Therefore, the dating information indicated a construction date after the appearance of whiteware. Phase VII probably related to the establishment of the stable in the 1820s and not to the earlier use of the area as a stable by Jackson.

13. Phase VIII: Nineteenth-Century Features

The 1989 site examination did not identify any potentially significant deposits dating to the period after Phase VII (ca. 1820s). However, in the course of the data-recovery excavations, several units of stratification dating to the nineteenth century were encountered. The units of stratification were primarily associated with features. Full excavation and detailed artifact analysis of the nineteenth-century features and their contents was beyond the scope of this project, but units of stratification dating to this phase were recorded using standard procedures that allowed for the placement of these features within the site matrix and provide a descriptive record.

Mechanical stripping uncovered a well adjacent to the north end of the bulkhead (Fig. V-4, V-38 and V-39). The well (Feature 27) was encountered directly beneath the modern bedding material (Phase X). The well cut through the earlier Phase IIIa bulkhead (Fig. V-4). It was unclear how the well was sealed, if at all, since no stone or wood was encountered directly on top of the well. The stratigraphic relationship of the well had been destroyed, presumably by a combination of construction events related to the 1920s parking garage and the elevated highway in the 1950s. Consequently, neither the top elevation for the well nor the relationship of the well to the Phase VII cobble paving could be determined. The well was not filled at the time it was abandoned. Consequently, it was possible to measure the depth of the well, which was 56 ft. (17 m.) over all, with water rising to approximately 15 ft. (4.6 m.) from the top of the well.

This well had been constructed in a different style than the well found during the 1989 site examination of NEO3, Trench B (Elia et al. 1989:30-31). The technique used to construct the well (Figs. V-38, V-39, V-40 and V-41) has been briefly described for other wells in Boston. It was built of vertical wood sheathing held together by bent-wood rings (Kaye 1976). The construction sequence began with the excavation of a shaft down to the water table,

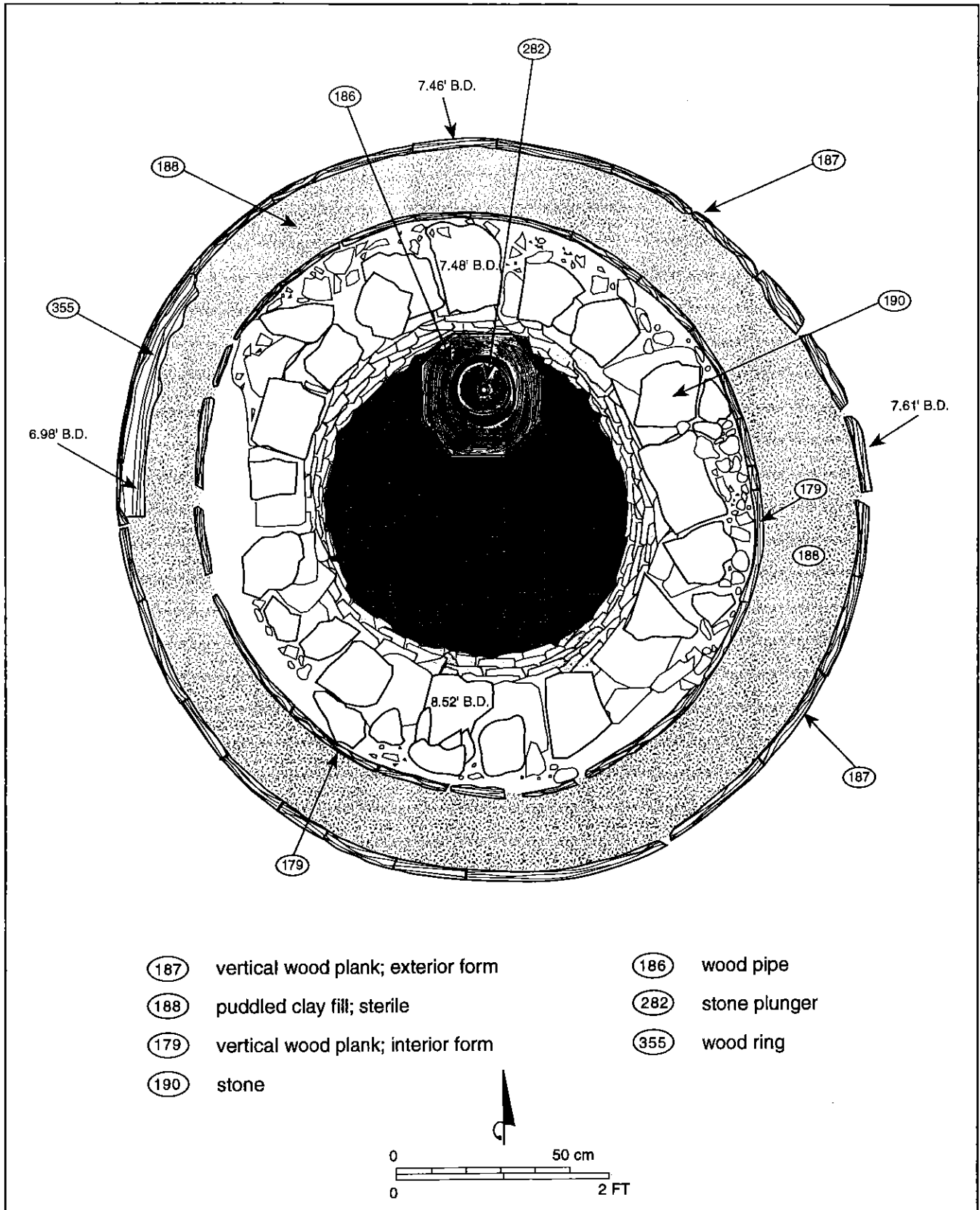


Figure V-38 - Phase VIII well (feature 27), plan view.

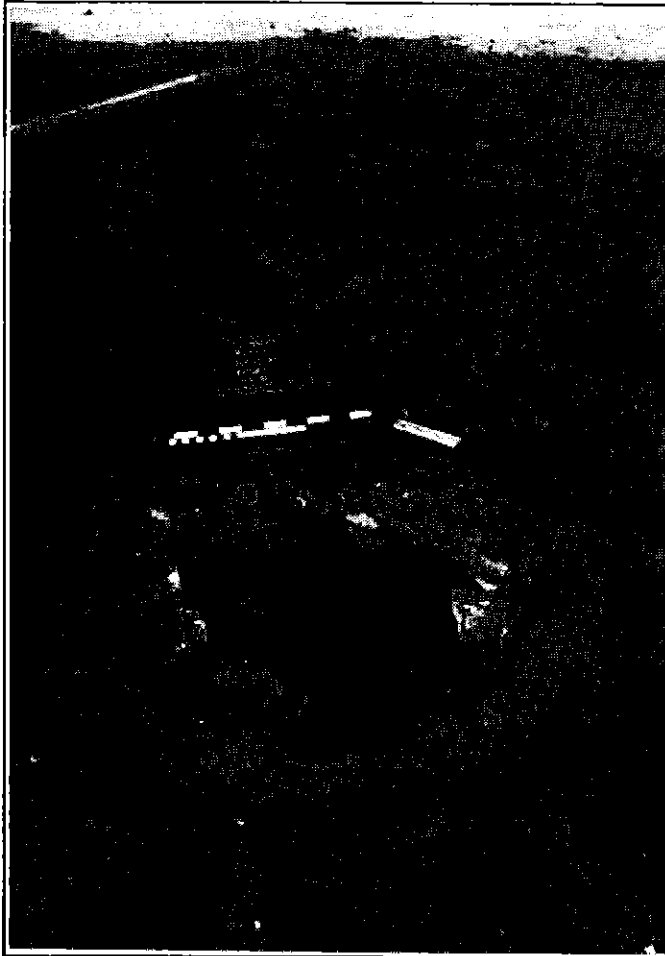


Figure V-39 - Plan view of well (feature 27), facing north.

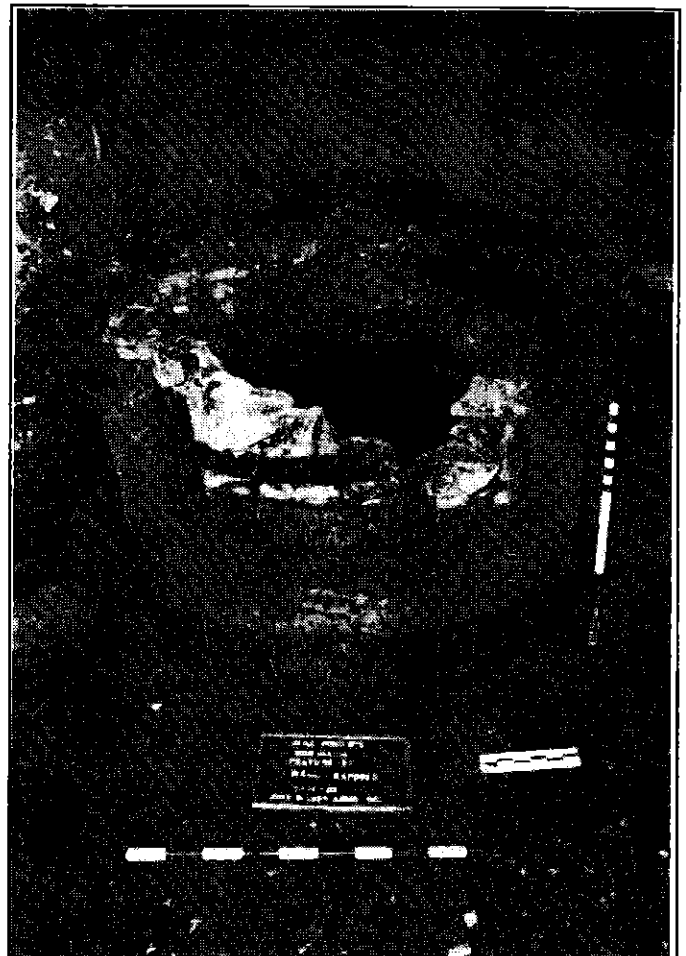


Figure V-40 - Phase VIII well (feature 27) showing interior construction elements, facing east.

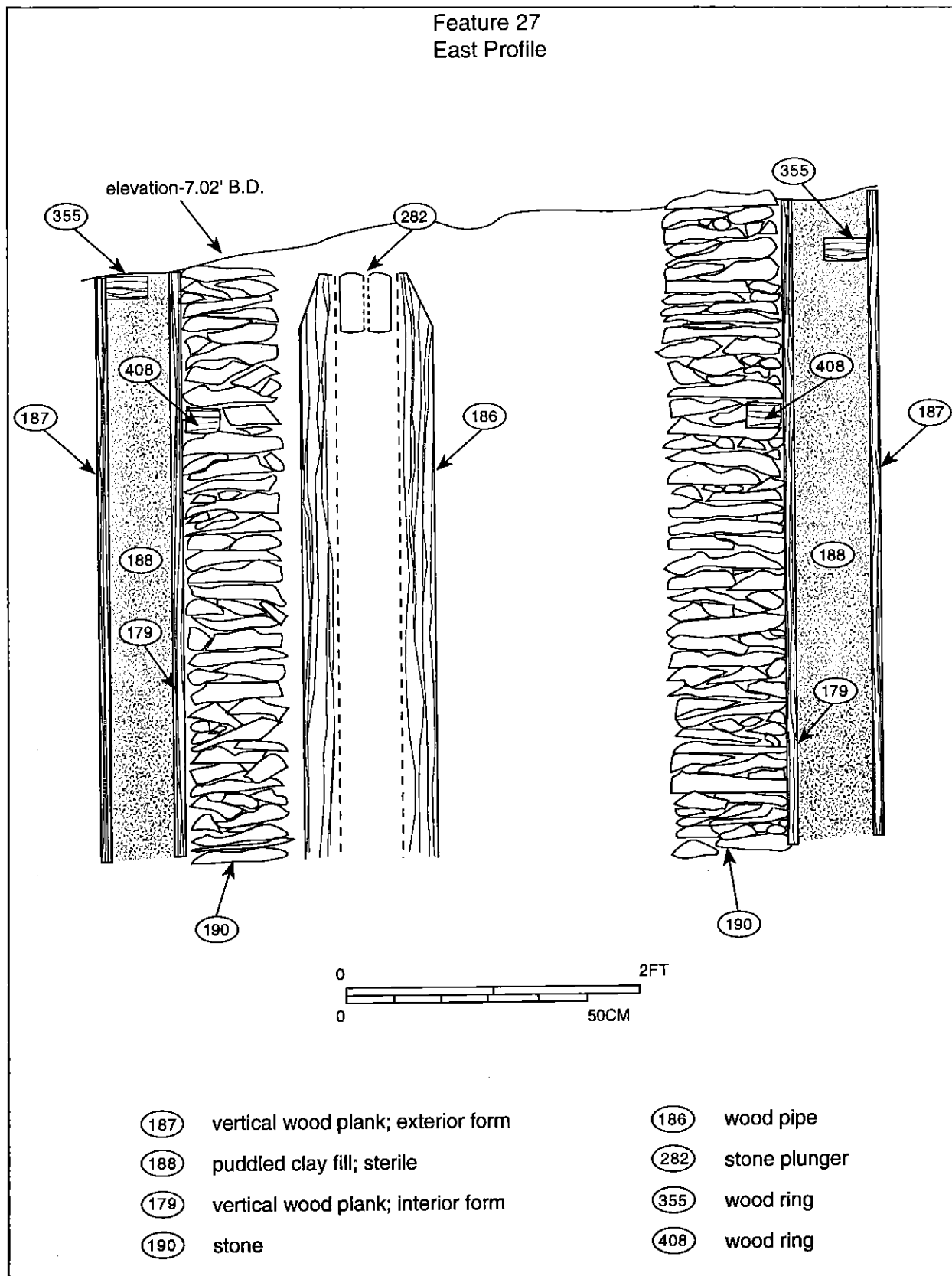


Figure V-41 - Well (feature 27), east profile.

after which came the fabrication of the wood form, constructed of two wood plank walls, one exterior (HN 187), one interior (HN 179), connected by bent-wood rings (HNs 355 and 408). Each wall consisted of vertical boards from 0.5 to 1 ft. (15 to 30 cm.) wide but of undetermined length. Their side edges met but were not formally join or overlap; instead, they were simply nailed to one another and to the wood rings. The limited excavations could not address whether this form was created within the well or in sections and lowered into the well hole. The builder's trench, was very narrow, at least at the top, suggesting that the form had been constructed in place within the well hole. The bent-wood rings acted as braces and prevented the walls from buckling. The vertical spacing between the braces was not determined.

Once the wood form was constructed, the form was filled with clay (HN 188). Puddled, wet clay was poured into the cavity and then compacted, creating an impervious lining for the well. It is assumed that this process would have been undertaken after the interior form had been constructed, but it could have been done in steps. The creation of an impervious well lining was necessary because the well would have to attain a depth at which the water was not brackish, as well water tended to be in this section of Boston, so near sea level (Kaye 1976).

The final element to the well was the construction of a dry-laid stone well shaft against the interior of the wood form. It is likely that the stone shaft extended deeper than the wood form structure in order to allow potable water to enter the well, but excavators did not ascertain the downward extent of either the wood or the stone lining.

In order to draw water from the well, a wooden pipe was installed into the shaft. The wood pipe was 1 ft. (30 cm.) in diameter, octagonal in shape, and had been constructed in sections. The section of pipe removed from the well was 10 ft. (3 m.) long and modified at both ends to allow it to be joined to other sections. Its interior bore diameter was 0.55 ft. (18 cm.). A similar wood pipe was encountered during archaeological monitoring at 75 State Street (Roberts 1989:130-132). At the Mill Pond site, evidence for a water-drawing mechanism was recovered in the form of a soapstone plunger or weight (HN 282) lodged at the top of the pipe.

Approximately 15 ft. (4.6 m.) to the east of Feature 27, the remains of a larger, unfinished well (Feature 39) were encountered by mechanical stripping. The stratigraphic relationship between the two features, if any, could not be determined because of several large intrusions created by twentieth century features (Fig. V-4). The construction techniques used were similar to those used for the other well (Feature 27). However, the dimensions of Feature 39 were larger, the outside diameter of the wooden form structure being 10 ft. (3 m.). Evidence for a builder's trench (HN 390) was identified, indicating that the well structure was either built in or assembled within the well shaft. The builder's trench was filled with clay (HN 389), while the wooden form consisted of two vertically set board walls (HNs 231 and 238) (Fig. V-42 and V-43). The cavity between the walls was filled with puddled clay (HN 237). No evidence for bracing or for a dry-laid stone well shaft was encountered. The interior well shaft created by the wooden form structure was filled with puddled clay (HN 239). This indicated that the well had been intentionally filled, but the reason for its abandonment is not known. The well was excavated to a depth of 20 ft. (6 m.) without a change in stratigraphy. Excavations were terminated at this point.

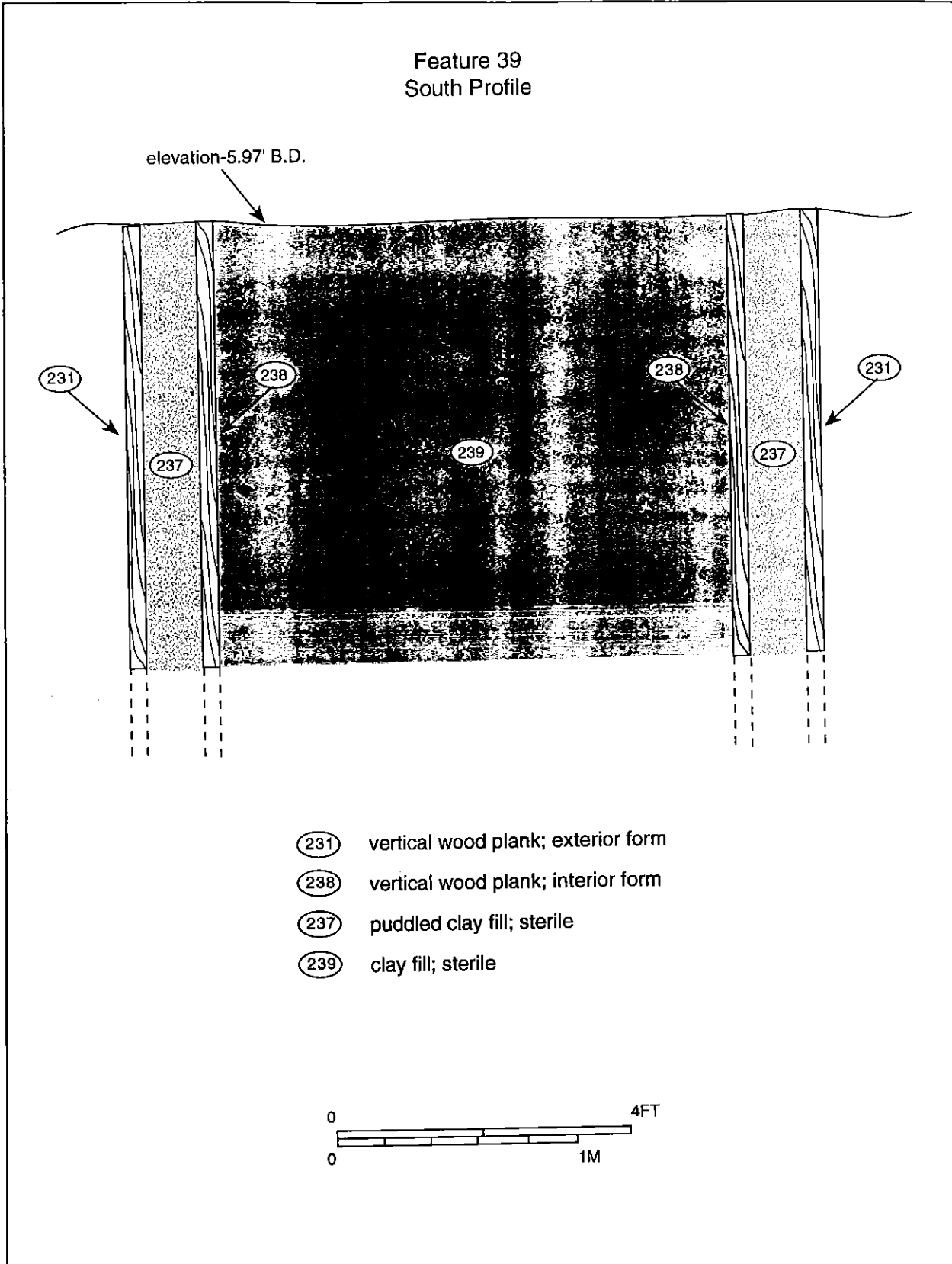


Figure V-42 - Well (feature 39), south profile.

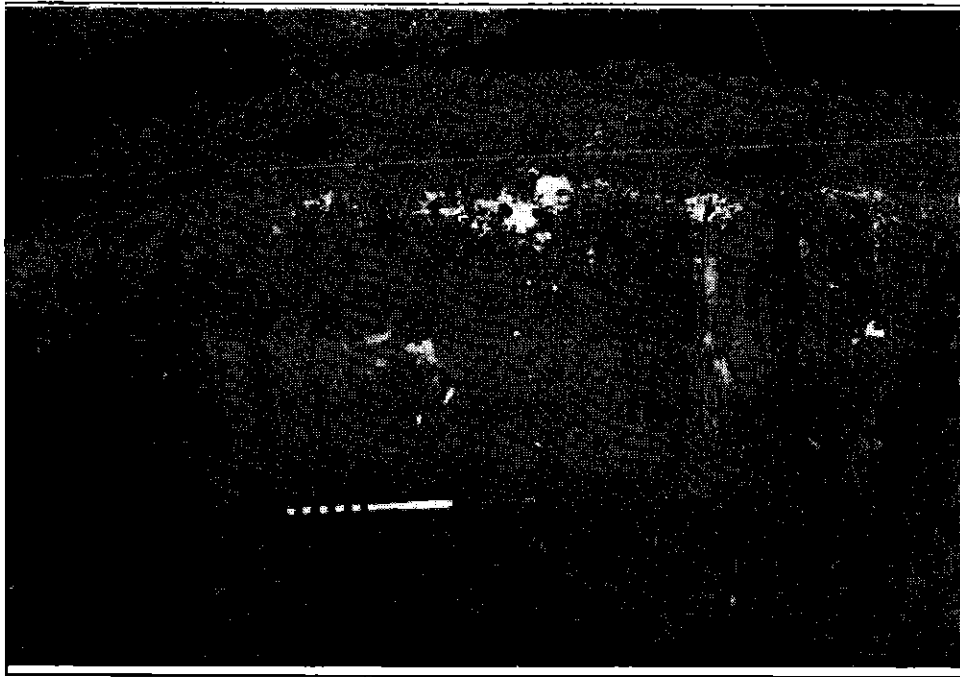


Figure V-43 - Phase VIII well (feature 39), facing south.

If this feature represents an abandoned attempt at constructing a well, it is not clear why this well was never completed after such a considerable investment of effort. If the feature was abandoned during construction, perhaps no water was encountered or the well began drawing contaminated water from another source. The well to the west was a functioning well, however, suggesting it is unlikely that reaching the water table was a problem for the well-diggers. Possibly the shift to city water occurred as this well was being constructed, causing its abandonment. In 1848, a municipal water supply system was begun in Boston (Kaye 1976). Additional research, beyond the scope of this investigation, would clarify these matters of interpretation. The finished well (Feature 27) probably continued to provide water for the stable for an extended period into the late nineteenth century.

Mechanical stripping on the south side of the site encountered several units of stratification dating to the nineteenth century (Fig. V-4). These units of stratification related to the rear areas of the properties that fronted on Endicott Street. Several wall foundations (Features 42 and 43) were identified, thus allowing for more accurate placement of the excavations on nineteenth-century maps (Fig. V-4). Feature 42 (HN 403) was a dry-laid cobble foundation that was probably associated with the rear boundary of 29 Endicott Street. Feature 43 (HN 75) was a brick foundation wall, built on a timber sleeper (HN 70) (Fig. 26). It abutted Feature 42, to the west, and Feature 38, to the east. Together, Features 43 and 38 formed the rear boundary of 27 Endicott Street.

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In the nineteenth century, a circular wooden cistern was constructed at the rear of 27 Endicott Street. Mechanical excavations uncovered the remnant of this cistern (Feature 37) (Figs. V-4 and V-44). The cistern was constructed of wood boards (HN 418) set vertically on a 5 ft.- (1.5 m.-) diameter board base (HN 420). The vertical boards were held together by metal straps (HN 419). The fill (HN 229) within the cistern contained mid-to-late nineteenth-century artifacts and architectural debris. The majority of the cistern, except for the lower portion and base, had been destroyed by activities associated with the construction of a large granite foundation (HNs 21 and 404) and by a modern utility (HNs 412 and 110).

14. Phase IX: Privy at Rear of 27 and 29 Endicott Street, ca. 1867

Mechanical stripping on the south side of the excavated area resulted in the identification of a brick privy (Feature 38) that dated to ca. 1860-1870. The privy was excavated using the methods employed on all other features, except that all excavated privy fill was water-screened through quarter-in. (64-cm.) mesh. Standing water within Trench 1 was recycled through a pump to wash the sediments, facilitating recovery of artifacts. Bulk soil samples and pollen cores were collected. Because the feature was not included within the permit application, the artifacts were not processed under the current contract. The physical description of the units of stratification and preliminary historical association are presented here briefly. A detailed analysis of the privy will be undertaken as part of the requirements of a Ph.D. dissertation by Martin Dudek, a doctoral student at Brandeis University.

The privy was located at the rear of 27 Endicott Street (Figs. V-36 and V-37). The north wall of the privy was exposed during the 1989 site examination and associated with 31 Endicott Street (Elia et al. 1989:23, 25, 27, and Figure 4.10). The increased horizontal coverage afforded by stripping during the data recovery identified the structure as a privy and allowed for the accurate placement of the feature on historic maps, since the privy is depicted on both the 1867 Sanborn and 1874 Hopkins maps (Figs. V-36 and V-37). Historic maps indicate that by 1885 the privy had been abandoned, since it is not depicted on the 1885 Sanborn.

No evidence of the privy superstructure was identified and it is assumed that it was removed when the privy was abandoned. As the privy was encountered directly beneath modern matrices, the method of abandonment was not preserved.

The privy contained two chambers within a 4.5 x 8.5 ft. (1.37 x 2.59 m.) brick privy vault (Fig. V-

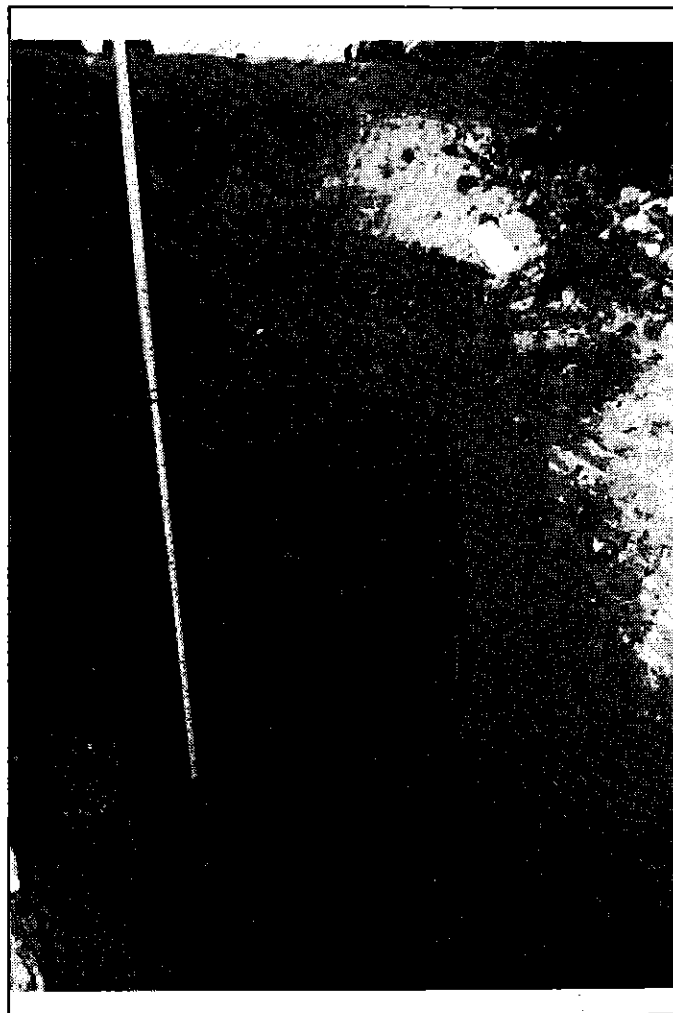


Figure V-44 - Phase VIII wood cistern (feature 37), facing south.

45). The floor of the privy vault was brick. The brick walls were two courses thick and the surviving portion was 4 ft. (1.2 m.) deep (Fig. V-46). Each chamber was approximately 3 ft. sq. (1 m. sq.) and vented by a pipe that was located at the exterior south corner of each chamber. The vent stopped at the top of the brick vault.

Excavation resulted in the identification of five units of stratification within the privy chambers: HNs 230 and 233 in the west, and HNs 232/236, 234, and 235 in the east (Fig. V-46). No attempt was made to correlate stratigraphy between the separate chambers. A variety of artifacts was recovered, including ceramics, glass tablewares, glass bottles, ceramic bottles, cutlery, a Bennington spittoon, syringes, a gold ring, thread spools, and bone. Preliminary observations on the datable artifacts suggested that the privy deposits correlate with the privy depicted on the historic maps.

Historic research indicates that during the 1860s and 1870s the property was owned by a doctor and the property contained the doctor's office (Osgood 1994). The recovery of syringes from the privy fill suggested that the privy deposits date to this occupation of the property. A privy dating to the approximate date range of Feature 38 was investigated at the Paul Revere House (Elia 1991).

15. Phase X: Twentieth-Century Occupation

The construction of a parking garage in the 1920s included installation of several interior foundation elements that intruded and destroyed evidence of earlier occupations. The interior floors of the garage were supported by columns that rested on granite-block piers. Five of these granite piers were encountered by the data-recovery investigations (Fig. V-4). To the extent possible, these piers and associated builder's trenches were avoided. No pattern could be observed in the placement of these structural elements, which consisted in general of large, squared granite blocks set on top of one another within a builder's trench (e.g. Feature 9)(Figs. V-4, V-13, V-26, and V-29).

The builder's trench fill for one of the granite piers (Feature 40) that were associated with the 1920s parking garage was the source of the volatile organics encountered during the excavations of Units 17 and 18. The contaminants had moved laterally through the stratigraphic profile, indicating that twentieth-century hazardous materials can be encountered beneath uncontaminated nineteenth-century units of stratification.

Excavation Units 1-4, 6, 7, and 19 were positioned beneath a concrete-slab floor, HN 11 (Figs. V-4, V-12, and V-13). The floor was 10 x 20 ft. (3 x 6 m.) and 0.5 ft. (30 cm.) thick. It and its associated fill intruded into some of the earlier deposits. It was not clear whether the floor was associated with the 1920s garage or some other occupation. The dimensions of the floor were recorded and it was then removed. In addition, the floor cut into another modern disturbance (HN 18).

Directly beneath HN 11, evidence of an earlier Phase X building event, in the form of granite-block rubble, twisted-wire cable and associated soil matrix (HN 3), was encountered. The debris, HN 3, and HN 18 are probably associated, with HN 18, representing fill in the builder's trench for the granite. Once it was determined that these units of stratification were intrusive modern deposits they were avoided.

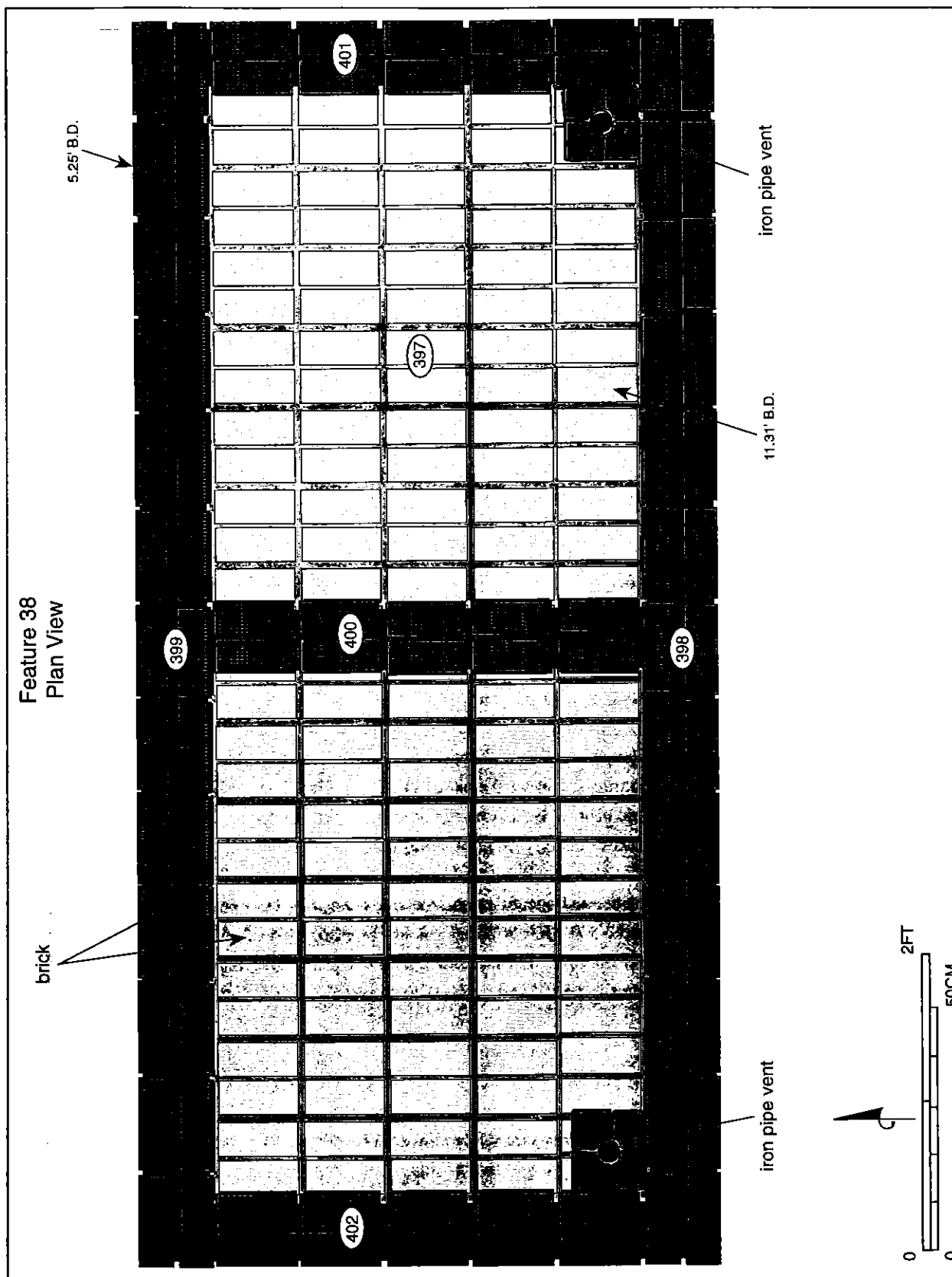


Figure V-45 - Plan view ca. 1860s privy (feature 38).

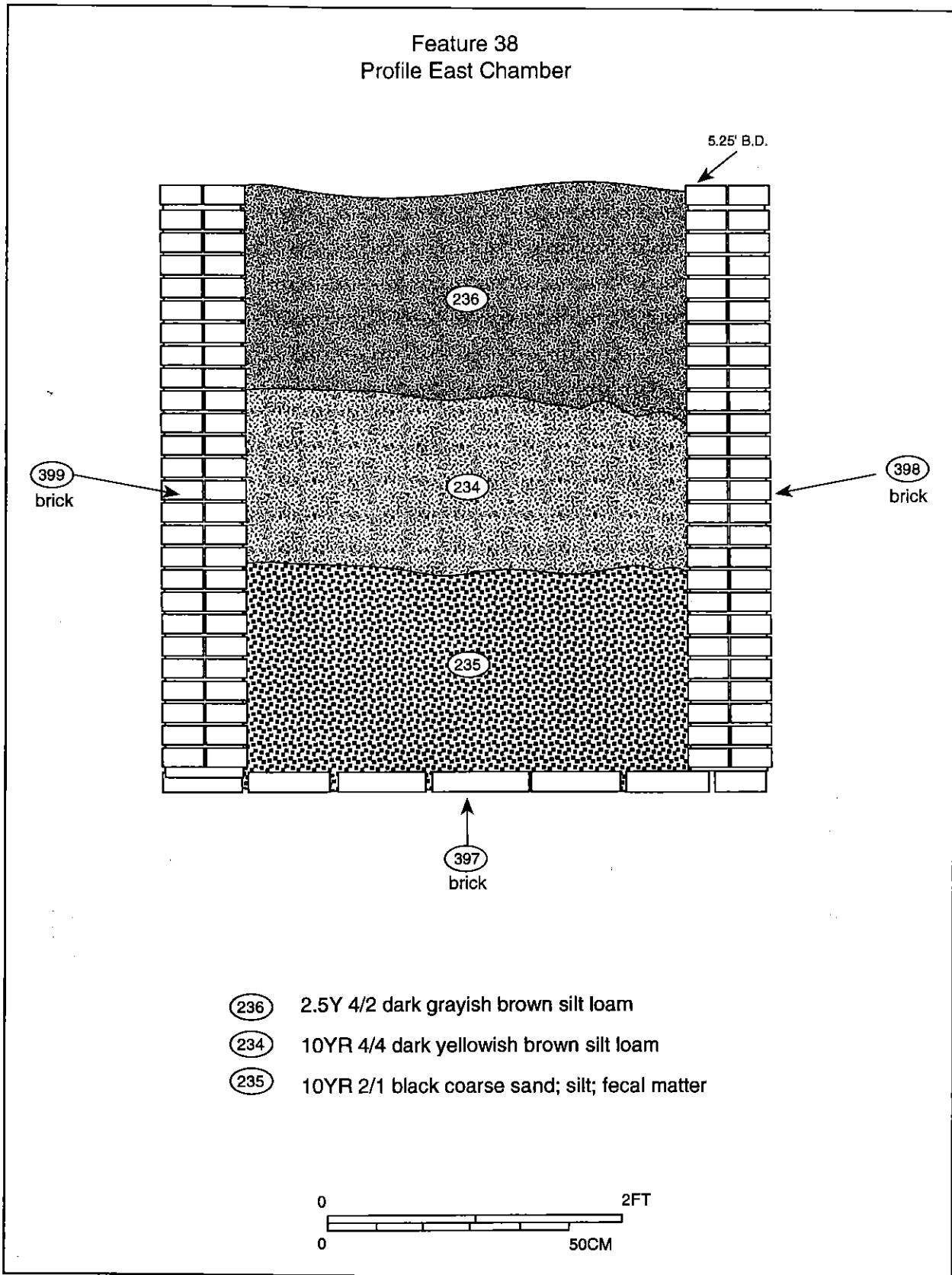


Figure V-46 - Profile of east chamber of ca. 1860s privy (feature 38).

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Construction activities associated with the construction of the elevated highway in the 1950s had destroyed all evidence of earlier occupations, starting with the pier on the west side of the site (Fig. V-4). Two concrete support bents, a spread footer, and associated builder's trench mark the end of the significant deposits to the west. Units of stratification associated with the installation of modern utilities formed the north, east, and south boundaries of the significant deposits. A modern sewer line (Feature 1) formed the north and east boundaries (Figs. V-4 and V-12). The south boundary was a modern concrete utility box (Feature 11) (Figs. V-4 and V-29). These strata extended from the modern surface to subsoil.

Units of stratification, asphalt (HN 1), and underlying bedding material (HN 2) associated with the working parking lot rounded out the site matrix. These matrices extended over the entire site area (Figs. V-12, V-13, V-23, and V-29). At several locations, HNs 1 and 2 were removed prior to excavation and thus have not been included in the profile (Fig. V-14).

C. Summary: Stratigraphic Development of the Mill Pond Site

The stratigraphic analysis of the Mill Pond site identified several discrete occupations and events. Within these were numerous units of stratification representing a variety of deposit types. Deposits dating to the Plantation Period (1620-1675) were present within Phase I. The bulk of the units of stratification dated to the Colonial Period (1675-1775). Colonial Period deposits included Phases I, IIa, IIb, II, and II/III. One Phase, V, represented an occupation that extended from the Colonial period into the Early Republic period (1775-1830). Early Republic Period deposits were grouped into six phases (IIIb, IIIa, III, IV, VI, and VII). Units of stratification that either dated to or extended into the Early Industrial Period (1830-1870) were present across the site in the form of features (Phases VI, VIII and IX) and a surface associated with a stable (Phase VII). Although not the focus of the data recovery, deposits dating from or extending into the Early Industrial (Phase VI and VIII), Late Industrial (1870-1915), Early Modern (1915-1940), and Modern (1940-present) periods were also present (Phases VI, VIII, IX, and X). The units of stratification from the later periods were recorded as time allowed. In several instances, limited excavation of nineteenth-century features was undertaken in order to ascertain the date of the feature and to record relevant information on feature construction.

The stratigraphic sequence for the site is a complex multilinear record of the activities occurring over the approximately three-hundred-year span of urban occupation at the site. The development of the Mill Pond stratigraphic sequence reflects both site-specific factors governing the deposition process and the overall development of Boston. As such, the units of stratification and phases reflect changes in the use of this section of the property over time. These changes were either the result of different property occupants or changes in use. In a large sense, the deposits from the Mill Pond site reflect the changes affecting early Boston in general. The use of the Mill Pond and its subsequent reclamation is an example of this. Changes to the site's waterfront reflected the changing context of the Mill Pond within the city. Consequently, the data generated through the analysis can provide insight into the make-up, use and context of the Mill Pond through the Colonial Period. In addition, the construction methods used to create the wharf and bulkhead provide insight into the orientation of merchants (businessmen) who wanted to avoid Boston's main wharves and wharf fees thus realizing higher profits.

The stratigraphic sequence for the site provides several insights into the character of the Mill Pond. Apparently, the shoreline of the Mill Pond covered by the site did not contain a marsh transition. Rather, there must have been a small beach. The proximity to Mill Creek indicates that at least this portion of the pond contained relatively swift-

moving water when the flood gates were operating to let water in or out of the pond. The depth of the Mill Pond can be inferred from the stratigraphic sequence. Evidence for water-deposited strata was encountered in Phases I and IIb, as well as in strata interpreted as Mill Pond bottom. The interface of several strata is interpreted as evidence of the foreshore (Figs. V-8 and V-13). Throughout its history, the pond was relatively shallow opposite Lot 21, approximately 2.5 to 3 ft. (76 to 92 cm.). The top of the water-deposited sediments encountered within the bulkhead (Phase IIb) from the late eighteenth century is approximately the same as the initial (Phase IIb) wharf surface from ca. 1708. This suggests that the level of the Mill Pond did not change through the eighteenth century. Examination of the profile section showing the pond bottom during the late eighteenth-century (Phases IIb, IIIa, III, and IV) suggests that the pond bottom adjacent to the bulkhead had been dredged. Whether the dredging had been periodic or a one-time event is unknown.

The Plantation Period and first 30 years of the Colonial Period use of this portion of Lot 21 did not result in the intensive development of different units of stratification nor in the deposition of large numbers of artifacts. The one feature within this phase, the water drain, was related to activities in another section of the site. Even though the Mill Pond was created in the 1640s and a dock is mentioned on the property in the 1650s, there is no stratigraphic evidence that the waterfront section of Lot 21 was used for commercial or residential activities. Instead, the uniform unit of stratification that represents the earliest land surface suggests that little to no intensive activity occurred within the site area at this time period.

Within the Colonial Period, specifically between ca. 1707 and 1775, this portion of Lot 21 underwent transformations associated with commercial activities, principally modifications to the water's edge. Although families occupied the front portion of Lot 21, the waterfront section probably was used primarily for commercial activities, based on the occupations of the owners. Although units of stratification included domestic artifacts as a result of secondary refuse deposition, household activities were probably not the main focus of activities within this portion of the property. Stratigraphic, artifactual, and documentary research indicated that a wharf was constructed on the waterfront between 1707 and 1709, just prior to the selling of the property. It was suggested that the construction of the wharf added value to the property and the seller (SPGI) received a higher price for the property as a result.

Phases I, IIa, IIb, II, II/III, and V contained deposits that reflected the Colonial Period use of the property. These deposits related to several events from the construction of the wharf and rear yard (Phase IIa), use of the wharf (Phases IIb, II, and V) and what is likely to be wharf maintenance (Phase II/III).

The construction of the wharf was vernacular and simple and did not follow patterns of wharf construction that had prevailed from the middle ages through the early nineteenth century. The wharf was constructed by stacking timbers and adding fill to create a stable, usable surface. A distinction was made between the wharf and the fast-land in the first half of the eighteenth century, but as the wharf area was used, additional fill was added to the surface, raising it to the approximate elevation of the fast-land, and, by 1779, the distinction had been lost. The fact that Lot 21 was not subdivided indicates that the property was more valuable whole than in part. This further indicates that the commercial value of the property was greater than the subdivision and creation of smaller residential lots. The subdivision of waterfront property into smaller lots was a process occurring across the Charles River in Charlestown (Pendery 1987). The occupants of the property were braziers and truckmen, two trades that would have benefitted from access to water. The movement of goods through Lot 21 by way of the Mill Pond

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would have potentially increased profits because it provided a central location and may have allowed the owners to avoid wharf fees, thereby increasing their ability to survive as businessmen.

The units of stratification within Phases IIb, II, and V reflected the use of the wharf. As such, these phases contained activity surfaces, as well as fill deposited, presumably, to maintain the wharf surface. One Phase (II/III) also contained activity surfaces, but the majority of the deposits reflected what has been interpreted as maintenance or repair of the wharf's waterside edge.

Three Early Republic phases reflected bulkhead construction and use of the waterfront and the Mill Pond ca. 1795. Stratigraphic and artifactual analysis indicated that ca. 1795 the waterfront portion of the wharf was rebuilt. At this time a bulkhead and pier (Phase IIIb) were constructed with a wood platform over the bulkhead (Phase IIIa). Interpretations of the stratigraphy provided insight into the depth of the Mill Pond and information that the pond still functioned as part of the transportation network until the time it was filled.

The construction of Pond Street most probably ended the waterfront use of the property. However, the area of the Mill Pond directly adjacent to Lot 21's waterfront was not filled until ca. 1811, when the Mill Pond Corporation had begun filling the entire pond. Evidence for the filling of the waterfront was recorded within the units of stratification associated with Phase IV. In addition, several strata (Phase III) were deposited on land which dated to after Phase IIIb and IIIa construction and may be associated Phase IV.

Additional Early Republic occupation of the site included the installation of drains (Phase VI). These drains crossed the site and presumably drained the buildings on Salem Court, Salem Street, and Cross Street. The terminus of the drains is not known, but is presumed to be in the vicinity of Pond (Endicott) Street. All drains were constructed in a similar fashion and had been repaired. The drains predated the stable but repairs occurred after the cobble surface of the stable had been installed. The stable was built on the remaining open portions of Lot 21 in the late 1820s and continued in use though the Early and Late Industrial periods into the Early Modern Period, when it was replaced by a parking garage.

Several features dating to the Early and Late Industrial Periods were encountered during the course of the investigations. Within Phase VIII, two well features were identified. These features must have been associated with the use of the stable. One of the wells was completed, the other may have been only partially constructed and then abandoned. The construction methods for each well displayed an interesting combination of wood planks, puddled clay and stone, although only the working well had stone. It is suggested that the puddled clay formed a water-tight barrier that prevented brackish surface water from entering into the well and thus contaminating the water source.

Subdivision of the section of land facing Endicott Street resulted in the construction of several nineteenth-century buildings. The associated rear and side property divisions were seen archaeologically in the form of wall foundations and outbuilding remains. In the rear of 27 and 29 Endicott Street, a privy dating to ca. 1867 was identified and excavated. Preliminary historic research indicated that the privy can be associated with the occupation of the property by a doctor. The privy was designated Phase IX.

Although construction associated with the elevated highway destroyed much of the nineteenth- through twentieth-century occupations on the site, numerous features were encountered that dated to this time period. The features related primarily to the Early Modern period and represented architectural elements of buildings constructed during

this period. Several granite-block piers associated with the 1920s garage were encountered during the course of the excavation. These features were mapped accordingly and the limits of associated disturbances noted. A concrete floor was encountered, the construction of which had impacted earlier phases but in turn protected them from construction activities associated with the garage and the elevated highway.

The Mill Pond site's stratigraphic profile continued to expand as modern activities added to the stratigraphic sequence. The main modern depositional activities on the site have been associated with the transportation and utility infrastructures. The construction of the elevated highway destroyed several matrices and impacted several others. The installation of modern utilities likewise impacted earlier deposits.

In conclusion, the stratigraphic analysis of the Mill Pond site has provided insight into the use of the site throughout an approximately 350-year time span. The deposits document the intensive use of the site by Bostonians from the Colonial through Early Republic periods. However, the stratigraphic sequence also provides insight into the use of the site and neighborhood in several other periods. Activities focused on the site's waterfront throughout most of the Colonial period, but also reflected the domestic occupation. The excavation of waterfront features allowed for the examination of construction methods and provided insight into the configuration of the Mill Pond. A stratigraphic analysis based on the Harris system provides for the integration of artifact and historical data into the discussion of the site matrix, which allows for the development of analytical units. These analytical units can then be used for comparative analysis.

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VI. COMPARATIVE ANALYSIS

A. Introduction

The phases defined above contained assemblages that were deposited under different conditions and by different kinds of social units. Before undertaking detailed analysis of the assemblages in relation to the research questions, it is necessary to identify appropriate analytical units that can realistically be compared to each other and to assemblages from other sites.

The assemblages from Phases Ia, IIIb, VI, VIII, IX, and X were not included in some or all of the comparative analysis for various reasons: Phase Ia was a very small collection from a probably disturbed context; Phase IIIb was much smaller than the other assemblages although it had over 100 artifacts; Phase VI included the mixed materials that collected during the early- to mid-nineteenth century installation of the drains which were cut down into the site through various phases; Phase VIII included features from the Early Industrial Period; Phase IX contained a feature from the late industrial period; Phase X was features and disturbances dating to the twentieth century. The materials from Phases Ia, VIII, IX, and X were not considered at all, since they were outside of the period of significance, or had been seriously compromised by disturbance. However, Phases IIIb and VI were included in some analyses.

Deposit types and their sources will be addressed first here. The social characteristics of the people that created the deposits will be considered next, and this section concludes with a presentation of the analytical units that will be used to address the research questions.

B. Definition of Analytical Units

1. Deposit Types

Table VI-1 divides the phases into either occupation surfaces or fill deposits by time period. The deposit type into which a phase was classified was derived from the manner in which the sediments were laid down as determined through a combination of historic and stratigraphic information.

Three occupation surfaces from the Colonial Period have been identified: Phase I, IIb, and V. The sediments from I and V were deposited on surfaces that contained other features and that were probably not fills, judging from stratigraphic evidence. Phase IIb deposits were interpreted from stratigraphic evidence as being the surface of the wharf and therefore the first occupation surface associated with the wharf. However, most deposits with artifacts were restricted to the area overlying the original land surface, stratified above Phase I or Phase IIa and under Phase V. One artifact-bearing unit lay under Phase II deposits.

One definite occupation surface from the Early Republic Period was also identified: Phase V, which (artifacts indicate) continued to be occupied into this period.

The Colonial Period included only one fill deposit: Phase IIa. This deposit was laid down in order to create the made land.

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The Early Republic Period was represented by three fill deposits: IIIa, IIIb, and IV. The historical documents provided information identifying Phase IV deposits as fill and stratigraphic data indicated that Phases IIIa and IIIb were fill laid down during construction of the bulkhead. Phase VI was a mixed deposit; it included the material recovered from the builder's trenches for the early nineteenth century drains which cut primarily through the strata of Phases III and V, but also through II/III and II.

The stratigraphic interpretation of the deposits from Phases II and II/III, both from the Colonial Period, and Phases III and VII, from the Early Republic Period, was more problematical. The Colonial period phases seemed, like Phase IIa, to have functioned to raise the level of the land surface, especially over the surface of the wharf. However, both may also have served as a surface on which artifacts were deposited and then incorporated into the surface. Thus, these were classified as mixed deposits.

Phase VII was the occupation surface associated with the nineteenth-century stable; however, it was the matrix into which the cobblestones for the stable courtyard were placed and therefore may represent either fill or the yard surface before the stable was constructed. Phase III lay over Phase V and under Phase VII. It seemed to have been another fill layer, perhaps post-dating the filling of Mill Pond and connected with leveling the lot for future development.

Table VI-1. Deposit types at the Mill Pond site.

DATE	Deposit Type		
	Occupation Surface	Mixed	Fill
Plantation Period Late 1600s	I		
Colonial Period Late 1600s-Early 1700s Mid 1700s	I, IIb V	II, II/III	IIa
Early Republic Period Late 1700s Early 1800s	V	III, VII	IIIa, IIIb IV, VI

Although some assemblages functioned as fill, to judge from historic and stratigraphic data, they may have been derived from specific kinds of deposits rather than from a mixture of sources. Three kinds of sources have been identified: household, activity, and unknown (Table VI-2). The household source type was primarily associated with the occupation surfaces. Three assemblages were almost certainly derived from sheet refuse and/or middens associated with households: Phases I, IIb, and V. Phase III may also be from this source. The Phase IIIa assemblage, as will be seen below, was very anomalous compared to the rest of the assemblages. However, the high frequency of kitchen-group artifacts and bone, the low frequency of architectural elements, and the coherence of the ceramic types suggested that this assemblage came from household refuse which was deposited in one dump load.

The Phase II and Phase II/III deposits, although classified as a mix of occupations surfaces and fills, were located near the edge of the property next to the water, and may have reflected some kind of activity, different in kind from that which produced the assemblages from the other occupation surfaces. If they were not fill, they might be classified as reflecting commercial or other-than-domestic activities and their source was therefore listed as Activity.

The unknown source type was fill (Phases IIa, and IIIb, IV, VII), which may have come from a variety of sources. Such deposits can be considered as derived from the city as a whole or from the neighborhood. Based on its physical characteristics, Phase IIIb may have come from dredged material. Phase VII deposits derived from the matrix into which the cobble floor of the stable yard was set and, as such, may have been primarily from the domestic yard occupation preceding the stable, from off-site fill, or from a mixture of the two. Although some of the artifacts in Phase VI were derived from an occupation surface, others may not have been; therefore this phase was classified as unknown.

Table VI-2. Preliminary classification of deposit sources at Mill Pond.

DATE	Deposit Source		
	Household	Activity	Unknown
Plantation Period Late 1600s	I		
Colonial Period Late 1600s-Early 1700s Mid 1700s	I, IIb V	II, II/III	IIa
Early Republic Period Late 1700s Early 1800s	V, IIIa (?) III (?)		IIIb IV, VI, VII

Combining the two classifications results in a matrix of assemblage types (Table VI-3) that illustrates the five kinds of assemblage types: occupation surfaces from households; occupation surfaces whose artifacts were derived from unknown sources; mixed deposits that may reflect non-household activities; fill deposits derived from household refuse; and fill deposits derived from unknown sources. The assemblage types within each cell of the matrix are analytical units that can be compared to each other and to assemblages from other cells in the matrix.

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Table VI-3. Matrix of assemblage types based on deposit type and source.

SOURCE	Type		
	Occupation Surface	Mixed	Fill
Household	I, IIb V, III (?)		IIIa (?)
Activity		II II/III	
Unknown (city)		VI	IIa, IIIb IV, VII

2. Household Types

Earlier sections of this report assigned the known historical individuals associated with the property to the different phases. These conclusions will be summarized here. Dating from the Plantation and Colonial Periods, Phase I appeared to contain artifacts from a series of households including Waters, tenants of Rawson, and the tenants of the SPGI. Since the historical and dating evidence suggested that the made land was created between 1707 and 1709 before the SPGI sold the land, Phase IIa could be assigned to the ownership period of SPGI although the origin of the fill was uncertain. The artifact deposits on the eastern portion of the site dating to Phase IIb seemed to be primarily assignable to the occupation of the Eustis household and any of the Eustises' tenants. Phase II, II/III, and V occurred during the early, middle, and late stages in the development of the Maycock household. However, II and II/III may not have been derived primarily from the Maycock household if they were composed primarily of fill and furthermore may reflect waterfront activity rather than household activity. Artifact analysis, however, discussed later, suggested that they did derive at least partially from the Maycock household. Phase V seemed to have accumulated primarily after the introduction of creamware and extended past the introduction of pearlware. Thus, Phase V was assignable primarily to the Maycock/Jackson household, but also extended into the beginning of the Early Republic Period and may have include material from the Vose occupation or from the occupants between the heirs of Jackson and Vose's ownership, as well.

There were few representatives of ceramic types from the period 1720 to 1760 in V and also few mid-century ceramic types from this period in IIb which was stratified under V. This disconformity suggested that perhaps the refuse from the 1720 to 1760 period was disposed of elsewhere. Since Phases II and II/III dated from this intervening period, one could suggest that the periodic repair or raising of the wharf surface was accomplished by redistributing the upper levels of the landward side of the lot.

In the Early Republic Period, the materials were from deposits classified as fill (Phases III, IIIa, IIIb, IV, VI, VII). However, the Phase IIIa deposits may also have derived from household refuse, probably dating to a very brief period, around 1795. If this assessment is correct, then this deposit may be from the Vose household. If Phase III is an occupation surface, it too would be from the Vose occupation.

The social characteristics of the different sources of the deposits, along with the correlations among the owners, phases, and deposit types are presented in Table V-4. The table simplifies the relationship among the different columns. For example, some of the artifacts from Phases V, III, IIIa, IIIb, and IV may have been used contemporaneously with each other rather than being exclusively derived from actions that took place in their assigned time periods.

Phase I was derived primarily from tenant occupants. During the occupation span of Phase I, the property had three different owners; but, as a rough estimate, owners resided on the property for only 15 years, while tenant occupation lasted over 50 years. Furthermore, the first owner-occupant, Waters, had tenants in the other half of his house. The size and composition of both the Waters and the tenant households is unknown. It is probable, but not certain, that these tenants had families.

The occupations of the head(s) of the tenant households are also unknown. Furthermore, the relative economic position of owners and tenants is undefined for Boston in this period. Some renters may have been families in the early stages of their life cycle before they had saved sufficient funds to buy housing. Others may have been in jobs that did not pay enough to support home purchase. No study of the relative economic position of renters and owners in Boston has been done and there is some feeling that the records were not adequate for substantive study of wealth distribution and inequality in Boston (Warden 1976b:102). However, it is likely that owners did have generally a better economic position than did tenants although some owners may have been "land poor" and had less disposable income than tenants for that reason.

The composition of the deposits in Phase I may also have been affected by activities that took place on the edge of the Mill Pond. The documents suggest that there was a dock at the edge of Mill Pond before the landfill was created. If this dock was used for some kind of commercial activity, that activity may have affected the composition of the assemblage.

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Table VI-4. Correlation of owners, phases, deposits and household types at Mill Pond.

Date	Owner	Phase	Assemblage Type	Household Type
1650	Waters	I	Surface, household	Owner and tenant households
1660				
1670	Rawson?			Tenant households, probably 2
1680				
1690	SPGI	IIa	Fill, unknown	2 tenant households
1700				Unknown: possibly 2 tenant households, possibly neighborhood
1710	Eustis	IIb	Surface, household	Owner and possibly tenant households
1720	Maycock	II	Mixed, activity	Owner-tenant households, possibly neighborhood
1730				
1740		II/III		
1750				
1760	Jackson	V	Surface, household	Owner and son-in-law household, possibly slaves
1770				Owner household and slaves
1780	Vose	IIIb IIIa	Fill, unknown Fill, household ?	Unknown; owner-tenant household with slaves; or neighborhood or greater Boston
1790				
1800		III	Surface, household	Owner and tenant household and probably slaves
1810				
1820	Mill Pond Corp.	IV	Fill, unknown	Unknown: possibly neighborhood, probably greater Boston
1830	Stable	VII	Surface, unknown	Unknown; possibly Vose and stable

The source of the Phase IIa deposits was unknown. They may have come at least partially from the lot. If so, they reflect the tenant occupants for SPGI and therefore would be similar to those of Phase I.

Phase IIb deposits that contained artifacts came primarily from the portion of the site overlying the landfill, suggesting that it was an occupation surface. The date of the deposits and their location suggested that they derived from the Eustis household. The Eustis family seems to have been late in its life cycle, since John Eustis was 50 years old when he bought the property. However, since Eustis was widowed twice during his tenancy and married a third time (possibly begetting a son by this third wife) he may still have been in a child-rearing phase despite his age. However, it is likely that the majority of the artifacts reflect a household in the late part of its life cycle. How many successive tenants lived on the property, and what their family structure may have been, is unknown.

Phase II and Phase II/III deposits were primarily found to overlie the wharf portion of the site and were somewhat later than Phase IIb deposits. While Phase II may have dated at least partially to the Eustis period, the primary occupation of both phases seemed to have been during the Maycock occupation. More important, they may reflect activities that took place on the edge of the Mill Pond adjacent to the wharf.

If Phases II and II/III are derived from the refuse of the Maycock household and that of their tenants, they represent the first 40 years of the Maycock household, from the early 1720s to the early 1760s. Again, the composition of the tenants' households and their occupations is unknown. Maycock would have been in his early thirties when he purchased the property, and his household during these phases would have included himself, his wife, and their seven children. The occupation of only one of the tenants on the property has been identified; he was a artisan, specifically, a block maker. Maycock himself was a brazier at the beginning of his occupancy and a truckman at the end of it. It is not known whether he owned slaves to help in the brass business or had servants, whether black or white. It seems likely that some of the artifacts, especially in Phase II/III, would have been derived from the Jackson household as well. It is not known when Jackson married Maycock's daughter and moved onto the property. Jackson's probate inventory mentions six slaves; they may have lived on the property and worked in his truckman's business and/or as house servants.

Phase V deposits seem to represent the end of the Maycock/Jackson occupancy, the early part of the Vose occupancy, and the transition between the two when perhaps only tenants lived on the property. Thus, the deposits would be those of the mature Jackson/Maycock families, the beginning of the wealthy Vose household, tenants, and possibly slaves.

The Phase IIIb deposits were collected from inside the timbers of the bulkhead. They may be fill from a variety of sources or dredged material from Mill Pond.

Phase IIIa deposit comprised dense concentrations of artifacts found under a platform on the edge of made land; the standard deviation of the mean ceramic date was the least dispersed of any assemblage and the number of early ceramic types was small, implying a deposit from a restricted time period with little mixing. It was interpreted as a household deposit that had been used in the construction of the bulkhead. It may have derived from the Vose lot, and thus would have included material from his household, his tenant's household, and from any servants or slaves. However, it may have come from elsewhere in the neighborhood or the city.

Phase III deposits were from the Early Republic period and may have been either fill or yard deposits from the Vose occupation. Vose had children and possibly slaves, although none of the latter appear on his inventory. A tenant also lived on the property during this time.

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Phase IV deposits were in the portion of the site created during the filling of Mill Pond and as such were from made land. The source of the deposits was unknown but could have come from a number of locations within Boston. The fact that the MCD of this deposit was earlier by eight years than that of Phase IIIa indicates that Phase IV incorporates more ceramics from earlier periods than does Phase IIIa.

Phase VI deposits represented several time periods. They included material from both the Vose and Maycock, and Maycock/Jackson occupation. Their MCD was earlier by one year than that of Phase IV and later than Phase IIIa, which it overlay. However, the artifacts also include material from after 1820, when the drains were installed.

Phase VII was associated with the use of the lot by a commercial stable. It is known that part of the lot had a stable on it during the Maycock/Jackson and Vose occupation. However, the material from VII contained both whiteware and ironstone, suggesting that the cobbles were laid down in the 1820s at the earliest. The artifacts in Phase VII were derived from the fill into which the cobbles were set and could have included refuse from the Vose occupation as well as other fill. The assemblage reflected the construction of the stable courtyard and not the actual stable occupation.

In summary, as is typical of urban archaeological deposits that were recovered from sheet refuse rather than from features, none of the occupations from the Mill Pond site can be tied directly to individual households. In the analysis of historic households, the term "houseful" is used to refer to the diverse members of a household that may include members of the nuclear family, the extended family, other relatives, servants, slaves, and non-related persons such as boarders or renters. The Mill Pond archaeological material could, by analogy, be said to have derived from a "lotful" of households. These lotfuls can also be considered a cluster of households. In every phase that had household deposits, the artifacts represented activities of both owner and tenant families. In a sense, the household occupation deposits were similar in derivation to the landfill deposits in that both were derived from multiple households.

Some of the phases, Phase IIb (Eustis), Phase II and II/III (Maycock) (assuming they derived from the lot), Phase IIIa (Vose), and Phase III (Vose), dated to relatively short periods of time and may be associated with a specific cluster of households that occupied the lot at that time. These assemblages typically included at least one owner household and one tenant household and, for IIIa and III, possibly slaves and/or servants. All the owner occupants can be considered to be better off economically than the tenants. Maycock and Vose seem to have been wealthier than the majority of Boston's population, considering their probate inventories.

The assemblages from Phases I and V were more complex. Phase I represented occupation primarily by a succession of tenants over approximately 70 years and may include evidence of shoreline activities. Phase V was deposited by two unrelated household clusters: Maycock/Jackson and Vose, their tenants and slaves and/or servants. However, the Phase V remains were similar in that they reflected the residences of relatively wealthy individuals who were involved in merchant activity and were identified as truckmen.

On the basis of this interpretation of the historic and archaeological data, three kinds of household-cluster types can be defined for comparison purposes: predominately tenant (Phase I); relatively wealthy artisan and tenant (Phases IIb, II, II/III); and wealthier truckman, tenant, and slave/servant clusters (Phase V, IIIa, III). Each household-cluster type is also associated with a particular time period: late seventeenth and early nineteenth century; early and middle eighteenth century; and late eighteenth, early nineteenth century. Thus, the potential differences among the assemblages may be due to social-cultural processes acting over time, as well as to processes reflecting socioeconomic or other cultural factors.

Three deposits have been identified as successive surfaces of the made land: Phases IIb, II, and II/III. Few artifacts were recovered from the Phase IIb surface overlying the made land, so that only Phases II and II/III were assigned to this classification. As discussed above, the dates of the phases associated them with the Maycock occupation and their deposits may contain refuse from the Maycock household and associated with the use of the wharf, since they were located as far from the rear of the house as was possible on the lot.

The Phases IIa and IV deposits were landfill according to the formal definition of the term: fill for the creation of land. Phases IIIa and IIIb seemed to be associated with the construction of the bulkhead and were construction fills. They were assigned to two different time periods: the Colonial Period (Phase IIa) and the Early Republic Period (Phases III, IIIa, IIIb, and IV). Phases IIIb and VI were not considered to represent any particular household(s). The former was probably dredged material and the later included multiple phases.

3. Analytical Units

Table VI-5 presents the results of the preceding analysis of factors that resulted in deposit formation. Eight analytical units were defined for comparison purposes. Some assemblages were assigned to more than one analytical unit because of the ambiguities of their source and composition. Furthermore, the periods to which the phases belong were not considered on this table and there were several analytical units in which earlier and later assemblages could be compared.

Table VI-5. Analytical units for analysis of the Mill Pond deposits.

Assemblage type	Tenant	Artisan & tenant	Wealthy owner & tenant	Activity	Landfill	Construction
Household, occupation	I	IIb, II, II/III	V, III(?)			
Household, fill		II, II/III	IIIa			
Activity, mixed				II, II/III		
Fill, unknown					IIa, IV	IIIb, VII
Mixed, unknown						VI

C. Chronological and Site-Formation Effects

Before proceeding with analysis focused on the specific research questions, it was necessary to consider the effect of two ubiquitous variables on the composition of the assemblages. These were chronology and site-formation processes. Chronology in itself is not a cause, but changes over time, which are due to a variety of social and economic variables, reveal themselves as secular variations (changes over time) that must be identified before additional analysis can proceed. As a simplified example, if artifacts in the kitchen group vary unpredictably over time, then other variables such as ethnic group or household composition can be used to explain differences between assemblages in different time periods. If these artifacts do change in a regular fashion over time, increasing or decreasing in frequency, then broader causal factors need to be examined. However, in assemblages with similar periods of occupation, more specific variables relating to household composition, or the occupation of the head of the household, may be used to explain the differences.

Site-formation processes may also have an effect on the composition of an assemblage. Different sources may affect the composition of the deposit. Assemblages derived from a burned or demolished house may contain more architecture-related artifacts than assemblages from a commercial site or household midden. Although it has generally been assumed that structural portions of a site (versus the non-structural portions of a site) will also result in higher artifact counts from the architectural groups, a recent study of slave sites in Georgia and South Carolina has indicated that, at least for this kind of site, such factors did not have an effect on the composition of the artifact categories (Joseph 1994). The analysis of the site-formation processes at the Mill Pond Site will focus on whether the artifacts from the occupation surfaces differ from those of the fill deposits, with consideration being given to the effects of artifact change over time.

1. Chronological Changes

Recent analysis of archaeological assemblages from various urban sites in the Middle Atlantic region suggests that certain artifact groups increase or decrease their frequency over time. This research indicates that the percentage of both the kitchen group and the ceramics of the kitchen group tended to be time sensitive in the nineteenth century (LeeDecker et al. 1990; Cheek et al. 1994). In Washington, D.C. (Garrow 1982; Cheek et al. 1983, 1991), Wilmington, Delaware (LeeDecker et al. 1990), and Cumberland, Maryland (Cheek et al. 1994), the kitchen group declines from highs of 70 to 90% in the early nineteenth century to lows of 50 to 60% in the late nineteenth century and kitchen ceramics from 70 to 80% to 20 to 30%. The activities group also tends to increase over time, although affected by the kind of site. Personal- and clothing-related artifacts in domestic sites also increase over time. Within time periods, other causes of differences in South functional groups were more important, such as household type, ethnicity and neighborhood type (Cheek and Seifert 1994).

The cause of the decrease in the kitchen group and kitchen ceramics and the increase in personal- and clothing-related artifacts as well as the increase in activity-related artifacts, is hypothesized to be related to the increase in the availability of consumer goods with time (Cheek et al. 1991:40; Cheek et al. 1994:104). The increase in consumer goods in other functional categories led to a decline in the relative percentage of kitchen ceramics and the kitchen group as a whole. Similar trends may exist in the seventeenth and eighteenth centuries, and these also may be related to the increasing availability of consumer goods. For this analysis, all deposits except Ia, VIII, IX, and X were used to include the most assemblages with useful chronological data.

Table VI-6 illustrates a number of chronological trends. The kitchen group is below 50% for the four earliest phases, and between 50 and 60% for the next two phases. The kitchen group rises to around 80% in Phases IIIa and

IIIb and remains above 60% except for Phase VII, in which it drops back to the level of Phase V. Note that Phases VI and VII were previously interpreted as mixed with earlier deposits, which may account for their lower relative percentage of the kitchen group. Thus, the kitchen group percentages start relatively low and rise into the 70s and 80s in the late eighteenth and early nineteenth centuries. These percentages match the percentages for this period in the Middle Atlantic cities. Since the ceramic class makes up between 68 and 95% of the kitchen group, it mirrors the frequency of the kitchen group and displays the same trend over time (Fig. VI-1).

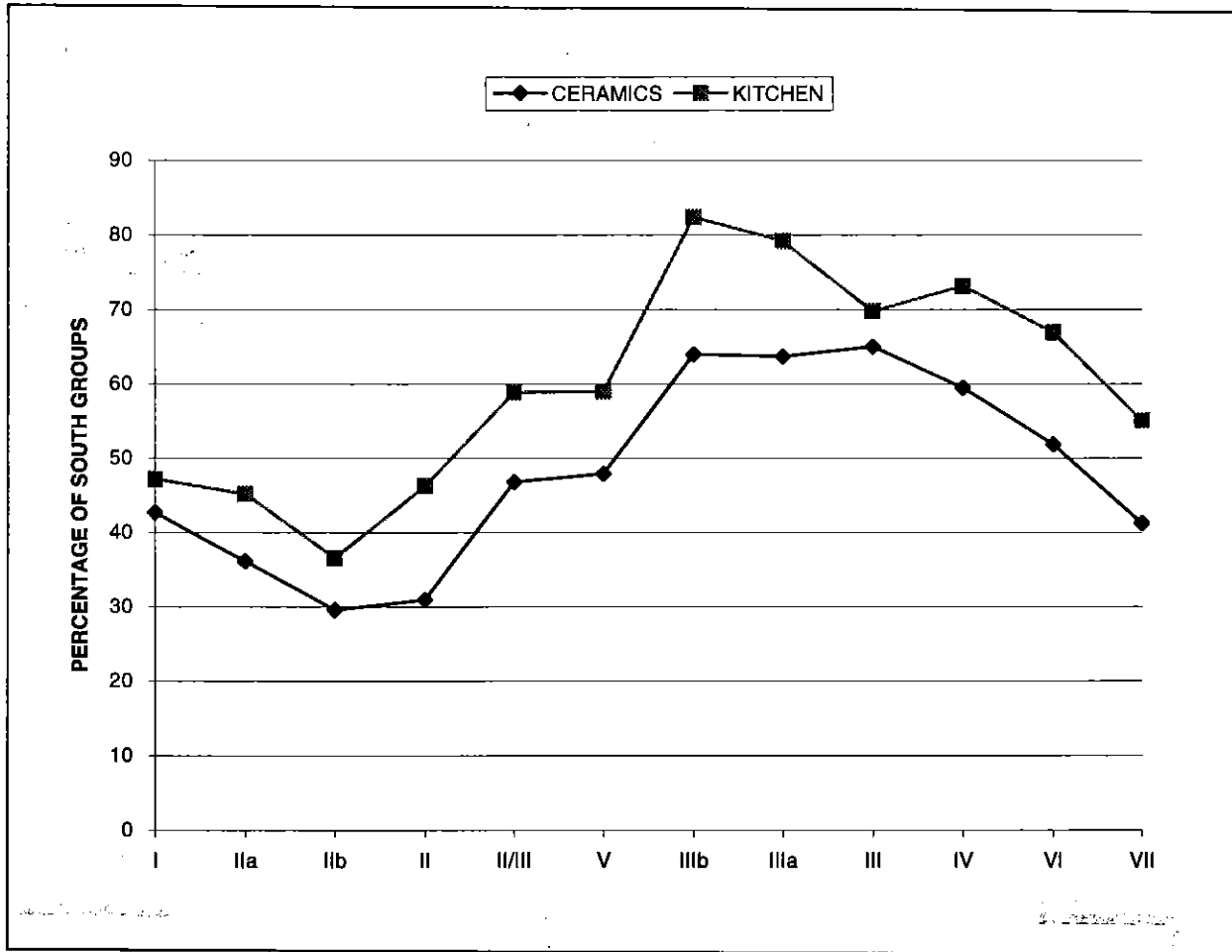


Figure VI-1 - Percentages of kitchen group and ceramic class over time.

Table VI-6. Percentages of South functional groups over time.

Function	Mill Pond Phases											
	I	IIa	IIb	II	II/III	V	IIIb	IIIa	III	IV	VI	VII
Architecture	25.23	27.19	34.61	33.42	29.31	28.41	4.8	11.72	26.58	11.75	24.36	36.82
Clothing	-	0.69	0.33	0.44	0.35	-	6.4	1.98	-	3.79	0.23	-
Furniture	-	-	-	-	-	-	-	-	-	-	-	-
Kitchen	47.21	45.22	36.57	46.24	58.87	59.02	82.4	79.21	69.76	73.15	66.91	55.07
Personal	0.15	0.10	0.33	0.44	-	0.5	-	-	0.18	1.12	0.14	-
Arms	-	0.10	-	0.15	0.12	0.16	-	-	-	-	-	0.68
Tobacco	27.09	25.62	27.73	19.07	10.99	11.28	4.8	1.82	2.68	6.15	7.95	5.41
Activities	0.15	1.08	0.44	-	.35	0.63	1.6	5.28	0.8	4.04	0.41	2.03
N	646	1015	916	2035	846	3192	1121	606	125	1609	2200	296

As commonly occurs, the architecture group mirrors the rise and fall of the kitchen group being almost equal to the kitchen group in only one phase, IIb (Fig. VI-2). However, except for three fill phases (IIIa, IIIb, and IV), the architecture frequency has relatively little variation, being between 24 and 37% with no obvious temporal trends. With the inclusion of the three fill phases, however, the overall trend is downward as a counterpart to the overall upward trend of the kitchen group.

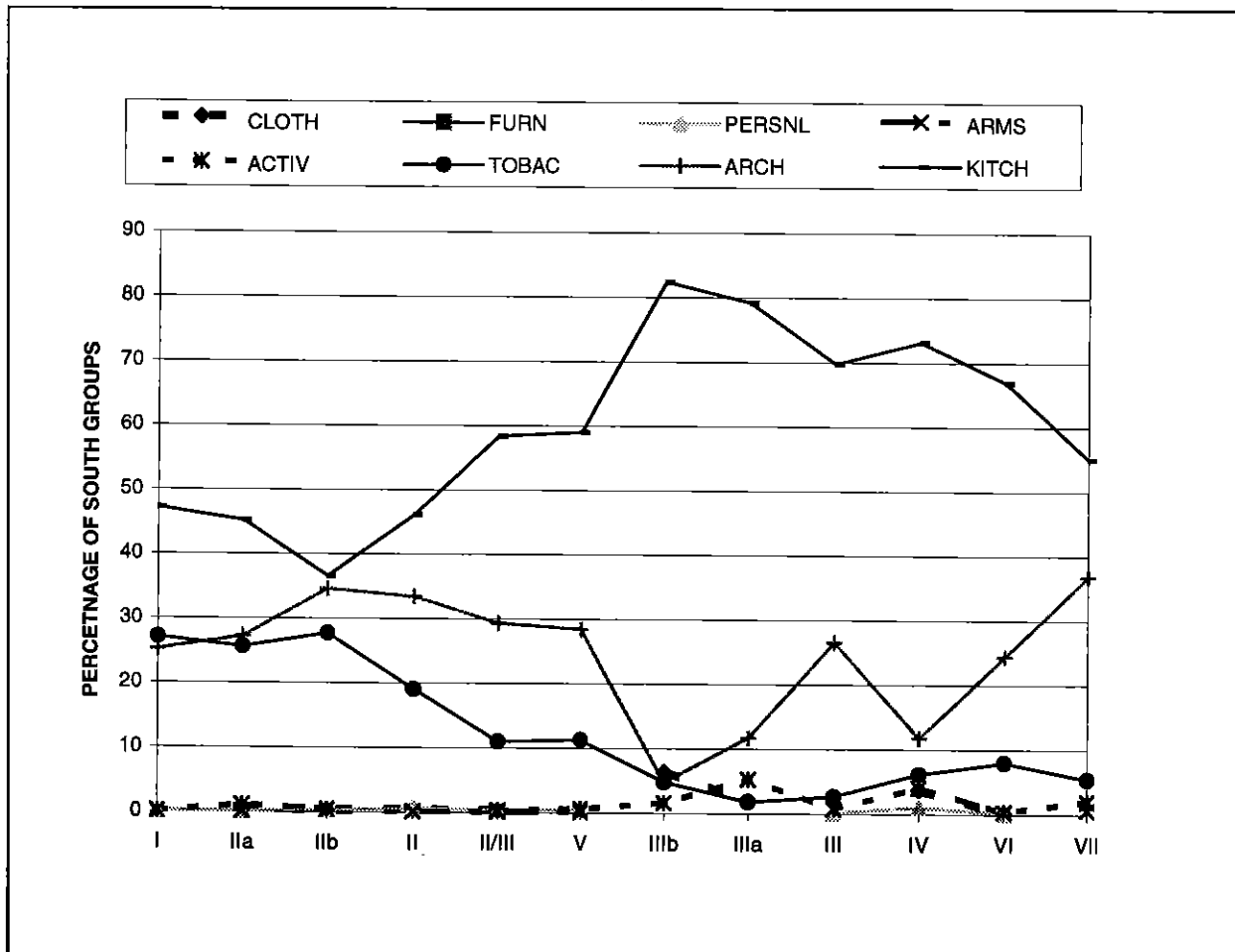


Figure VI-2 - Percentage of South functional groups by phase.

The tobacco group artifacts have a strong temporal trend also. The first three phases, which date to approximately the same period, have values in the high 20% range; the next three were in the teens; and thereafter the percentages range from around 2 to 8%.

Representation of the other groups is, as usual, very low, and there are no obvious trends. Both the clothing and activity groups are distorted by the presence of shoes and leather fragments, respectively, in the late eighteenth and early nineteenth century fill deposits. Even when these are removed, there is no obvious linear trend.

In summary, the four early phases which date from the end of the seventeenth century to approximately 1720, are very similar to each other, with low kitchen group percentages, below 50%, and percentages for the high tobacco group. Phases II/III and V, which date from 1720 to the 1790s, still have relatively high tobacco-related artifacts but the kitchen frequencies were higher, in the 50% range. The later phases, which were primarily fill, have kitchen group percentages from the mid-60s to the low eighties and low frequencies of tobacco pipes. The latest phase,

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Phase VII, shows a decrease in the kitchen group that may be related to the derivation of the assemblage from the construction of the stables.

The Mill Pond Site material has only one deposit from the middle of the eighteenth century, Phase II/III. The material from Paddy's Alley, not analyzed to date, does have deposits from this period and it will be interesting to see if those deposits fit the general trend defined here. Other sites in the Boston area also date to the middle of the eighteenth century. Table VI-7 illustrates the percentages of the South groups for five features from Charlestown (Pendery 1987) and the Faneuil Hall (Alterman and Affleck 1993) deposits. The MCDs associated with these deposits represent their approximate time of deposition or accumulation. One assemblage (Feature 43) dates from before the earliest Mill Pond assemblages, and five deposits date from the middle of the eighteenth century, a period not well represented at Mill Pond. The Charlestown data are from features rather than occupation surfaces and so may contain a different range of artifacts than would be found in a yard midden. The Faneuil Hall material comes from a landfill context and the numbers presented herein represent the South profiles from the all the excavation units combined.

Table VI-7. Percentages of functional groups from Charlestown and Faneuil Hall excavations.

MCD	Charlestown Features					Faneuil Hall
	43	32	20	6	34	
	1666	1731	1737.8	1742.34	1747	1728-32*
Function						
Architecture	46.8	35.8	40.2	11.7	38.5	11.7
Clothing	0.66	0.69	0.08	0.4	0.4	2.4
Furniture	--	0.04	--	--	--	1.06
Kitchen	46.9	57.8	51.0	81.6	54.9	36.9
Personal	0.25	--	--	--	0.06	0.77
Arms	0.05	--	0.1	--	0.06	0.27
Tobacco	5.0	5.2	3.4	6.2	5.0	16.7
Activities	0.03	0.4	4.8	--	0.4	37.2
N	1,957	2,161	936	1,025	1,534	11,363

*Estimated date of landfill

The deposits are basically similar to each other with the exception of Charlestown Feature 6 and the Faneuil Hall fill. These two deposits are more similar to the pattern of the late eighteenth century fill deposits at the Mill Pond Site, although in different ways. Feature 6 has high kitchen group and low architecture like Phase IV and IIIb and IIIa and a similar tobacco-group percentage. However, there is little similarity in the other artifact categories. The Faneuil Hall assemblage is extremely varied from the individual excavation units. The Faneuil Hall assemblage has low architecture percentages as well as lower-than-normal kitchen occurrence of artifacts as a result of the very high percentages for the activities category, which includes large amounts of leather scraps.

The other Charlestown features are found to be intermediate between the early eighteenth- and the middle nineteenth-century deposits at the Mill Pond site. The kitchen-group percentages are in the 40 to 50% range while the tobacco-group percentages are less than those for this time at Mill Pond, between 3 and 5%. The architecture group, however, was in the 30 to 40% range like the majority of the Mill Pond Site deposits. The clothing, personal, arms, and activities groups generally could fit within the ranges of these groups at the Mill Pond site, although there are some exceptions, especially the deposits at Faneuil Hall.

Combining these data with those from Mill Pond tends to confirm the observation made on the Mill Pond data that the kitchen group frequency increases over time (Fig. VI-3). The MCDs have been used to locate the assemblages on the chronological axis. There seems to be relatively little secular change in the frequency of the kitchen group before 1750. After that time, the frequency increases.

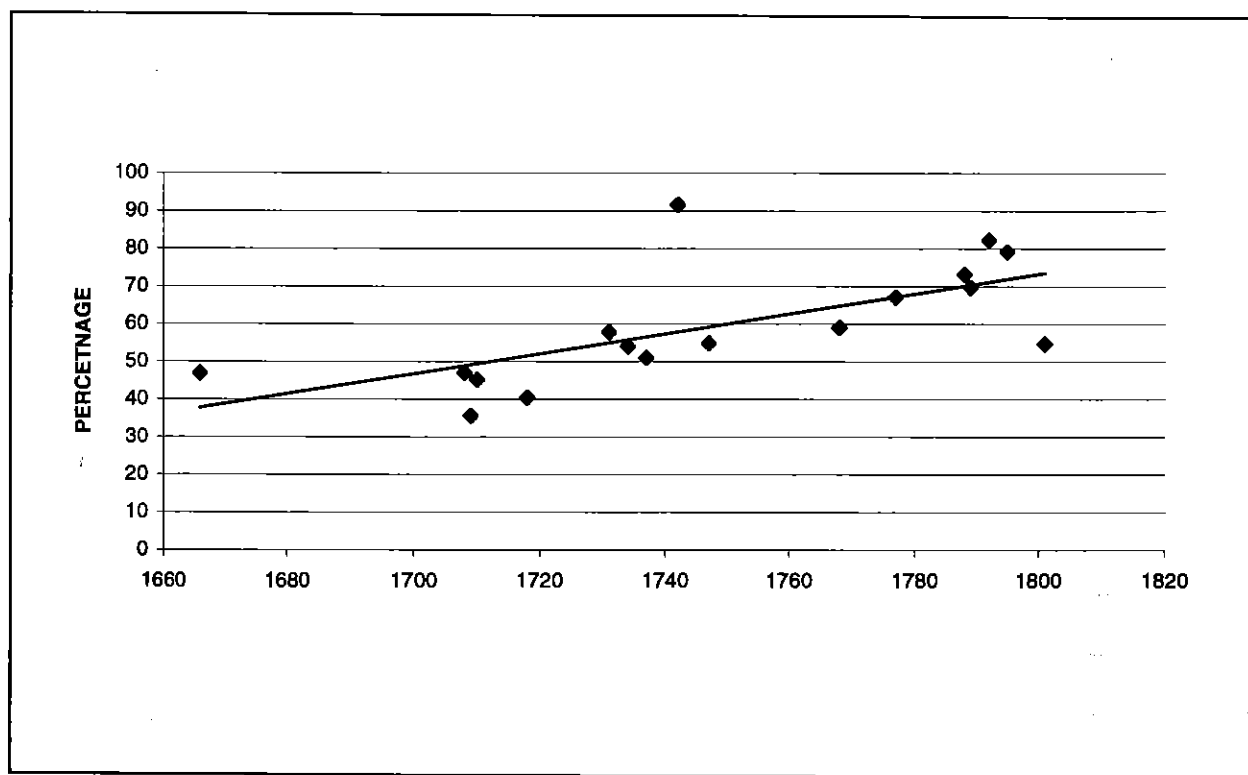


Figure VI-3 - Percentage trend of kitchen-group artifacts from Mill Pond phases and Charlestown features over time.

Artifacts that are not normally included in the South system include bone, shell, leather as a separate group, and ballast. These are not normally involved in stylistic changes, which are often translated into change over time. However, they may reflect changes related to "fashions" in trash disposal. Furthermore, as seen from the Faneuil Hall assemblage, some of these artifact classes, such as leather, are often more prevalent in landfill situations. These non-South-system artifacts were examined to determine if they changed over time, so that temporal change could be ruled out when comparing fill and non-fill deposits.

As may be seen from Figure VI-4, these artifacts also clearly change over time; however, Phase IIIa is an exception. Bone, shell, and ballast decline overall (Table VI-8). Bone and shell display a major increase in Phase IIIa, a single period fill deposit. Leather does not have a consistent pattern except that it appears in the later fill deposits (Phase IIIb and IV) in relatively high percentages, although not nearly as high as at Faneuil Hall. Ballast is particularly interesting because it was highest on the two earliest occupation surfaces and can be interpreted as having had its

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origin in the early landscape or ground preparation of this section of Boston. It becomes less common later -- presumably, as discussed in Section V, because new ballast was no longer being introduced. Its presence in VI and VII is probably due to the inclusion of residual ballast in these construction-related fills.

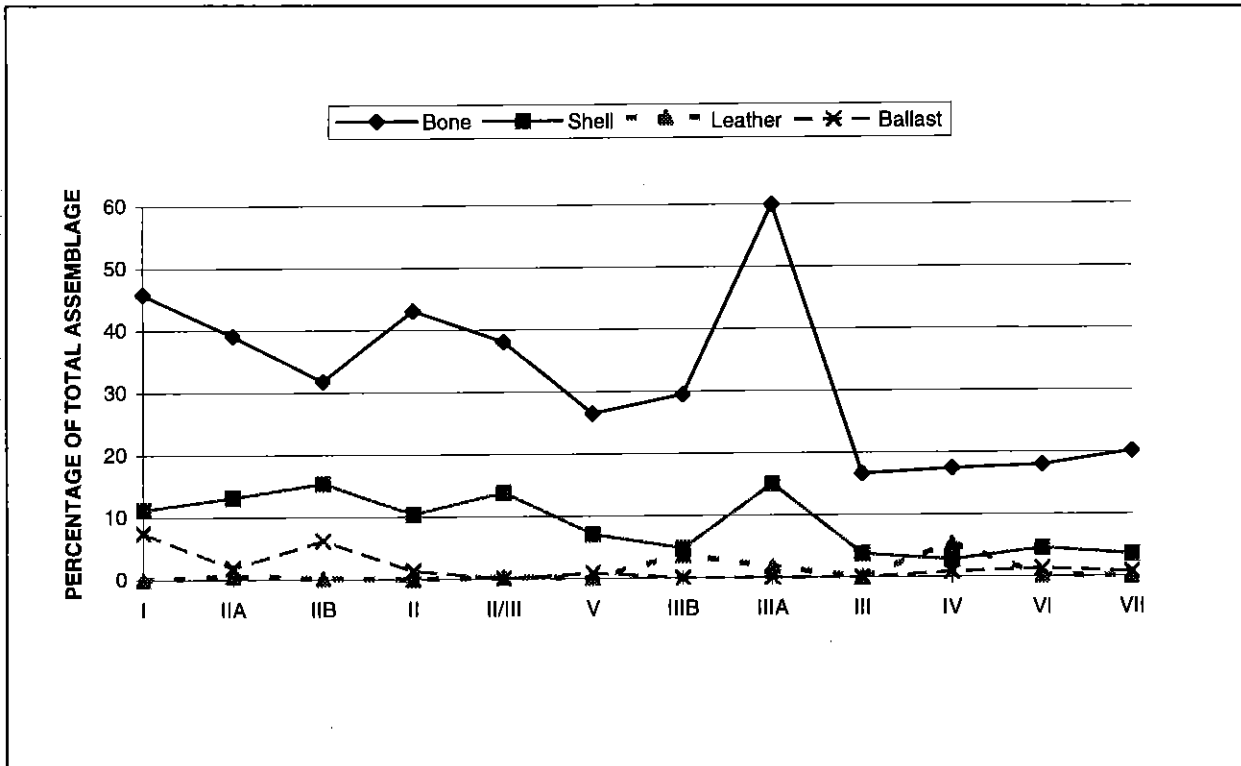


Figure VI-4 - Non-South artifact groups by phase.

Table VI-8. Percentages of non-South group artifacts of total assemblage by phase.

PHASES	Artifact Types			
	Ballast	Bone	Shell	Leather
VII	0.8	20.2	3.6	--
VI	1.3	18.0	4.6	--
IV	--	17.6	2.8	5.5
III	--	16.6	3.8	--
IIIa	--	59.7	15.1	1.7
IIIb	--	29.6	4.8	3.7
V	0.9	26.5	7.1	0.1
II/III	0.1	38.1	13.9	0.3
II	1.4	43.1	10.4	--
IIb	6.2	31.8	15.4	0.2
IIa	1.9	39.1	13.2	0.6
I	7.4	45.8	11.2	

The kitchen and architecture groups were examined to determine whether the artifact classes that composed them were characterized by secular trends also. In this analysis, the percentages of the classes as a percent of both the South group and of the complete assemblage were plotted against the MCD and a regression line was fitted to the data points. Although the MCD may not be the best indicator of the midpoint of the historic occupation dates represented by a phase, it was at least a good relative measure of the relationship of assemblages and was the most direct measure of temporal position. The trends are similar for both analyses and only that for the South Groups is discussed here.

The only artifact class in either group to show strong secular trends is kitchen ceramics, which increased and window glass which decreased over time. The kitchen ceramics do have a strong linear trend, as would have been expected since they are the major component of the kitchen group and the kitchen group is temporally sensitive. The window glass trend is not as strong.

2. Site-Formation Effects

Site-formation processes distort the archaeological record in regular ways that can be measured and identified and that can, at least to some extent, eliminate the distortions created by natural and cultural formation processes (Schiffer 1976:42). Although the study of site-formation process was not part of the research design for this project, two effects of natural and cultural processes have been taken into account in order to gain a better understanding of the structure of the data. The first of these topics is whether the origin of a stratigraphic unit, whether fill or midden, would affect the contents of a deposit sufficiently to make the artifact contents similar. On a gross level, one might expect that deposits would be similar, other things being equal, if they were deposited by the same process. For example, as will be discussed later, there have been some studies of the material that comprises landfills and discussions of the regularities in that fill. At Mill Pond there are at least three kinds of depositional contexts, categorized on the basis of the way they were formed: occupation surfaces composed of sheet midden and features; mixed deposits from activities and fills; and fill. The fill can be divided into three types. The first is landfill, composing Phases IIa and IV; the second is landscape fills, composing probably Phase III, and possibly II and II/III; and the third is construction fills, composing IIIa, IIIb, and probably VII. In addition, there are some contexts, like the Phase VI deposits from the drainage trenches, that are clearly mixtures of several phases and at least two deposit types, landscape fill and occupation surfaces. We differentiate between landscape fill and landfill because their origins may be different. Landfill deposits seem to be very varied from location to location within a landfill, yet have some typical components over all that are not common in urban yard landscaping or are not preserved in fast-land situations. It is suggested that sediments used to landscape a lot may be moved in from other locations on the lot itself or from the nearest neighboring source, which could be refuse from other house lots.

The second issue addressed is the numbers of residual and possibly intrusive artifacts in the different phases. This may provide additional information on the length of time during which particular phases accumulated (and therefore who probably contributed to the deposits) as well as whether the ceramics come from one period or many.

In the first analysis, phases are grouped on the basis of a similarity matrix to ascertain whether there are any similarities among the assemblages that can be allocated to site-formation processes. A Brainerd-Robinson matrix (Brainerd 1951, Robinson 1951) has been prepared, using the combined South and non-South artifact groups; the leather group is excluded from the non-South group since it was counted under clothing or activities within the South groups. This type of matrix is commonly used for seriation, arranging a series of assemblages in chronological order. However, since this matrix is a similarity matrix, it can be used to group assemblages on the basis of their overall degree of resemblance. Instead of assuming that similarities are due to temporal factors alone,

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other causes can be examined. This approach has been previously used in urban archaeology with some success (Cheek et al. 1983).

Table VI-9. Brainerd-Robinson similarity matrix for Mill Pond, total phase assemblages.

	I	IIa	IIb	II	II/III	V	IIIb	IIIa	III	IV	VI	I
I	--											
IIa	175.2	--										
IIb	169.4	177.2	--									
II	178.7	186.1	169.5	--								
II/III	160.8	180.4	165.0	178.1	--							
V	135.8	151.2	151.0	156.3	163.0	--						
IIIb	115.0	124.0	116.0	123.3	138.2	153.4	--					
IIIa	154.6	52.2	135.4	153.7	150.8	114.4	117.8	--				
III	97.0	112.6	112.0	117.3	130.0	160.8	161.0	88.4	--			
IV	103.6	113.4	105.6	112.9	126.0	149.2	169.6	90.2	174.0	--		
VI	112.6	128.2	128.0	133.3	142.0	175.4	159.8	93.2	184.0	172.4	--	
VII	105.0	120.8	120.0	125.5	137.0	168.8	143.4	99.6	171.4	1150. 8	170.6	--

A clustering method called double-link (Renfrew and Sterud 1969) was used to provide a rapid clustering by hand of the similarity matrix. Although this was primarily developed as a method of identifying linear, chronological relationships among assemblages, it has the benefit, in practice, of identifying clusters of assemblages as well as identifying outliers that are represented as branches rather than as linear clusters.

In this method, the two highest similarity coefficients one assemblage, picked arbitrarily as the starting point, are identified and connected to the initial assemblage by arrows showing the direction of the link. The next step is to link the one of the units not yet linked by two bonds and follow the same procedure. This is done for each assemblage. Bonds or links in two directions, that is assemblages most closely linked to each other, are represented with double arrows. When the clustering procedure results in separate clusters unconnected by the initial application of the double-link method, each cluster is treated a separate assemblage and the two highest links connecting one group to the other are found. This supernumerary bond is represented by a broken line.

Figure VI-5 shows that there are two main clusters of closely related assemblages which are clustered by time period. The late cluster has one occupation surface (Phase V) and several fill assemblages (Phases III, VI, VII, and IIIb. Phase VI, which cut through V, as well as lower deposits, is clustered with Phase V and the deposit above it, Phase VII.

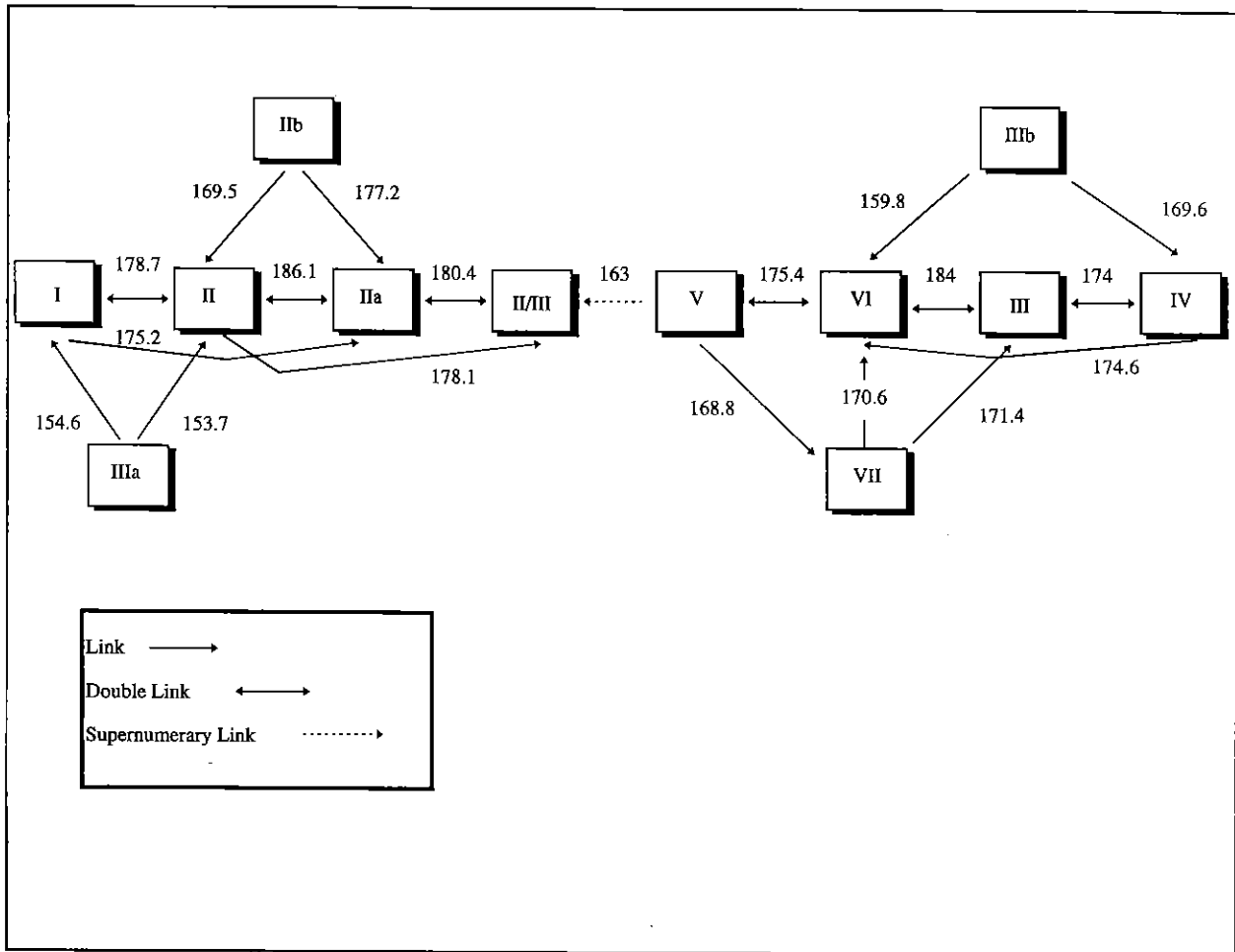


Figure VI-5 - Double-link analysis of Brainerd-Robinson matrix of total assemblage.

In the early cluster, Phases II, IIa, and II/III, all interpreted as fill, are closely related. The two occupation surfaces I and IIb are at the either end of this cluster. The two clusters are linked by both chronologically intermediate assemblages, which are composed of a phase of dubious ancestry, Phase II/III, and the occupation surface V. The closest link between the two temporal clusters is the third highest link between V and II/III. The one exception to the temporal clustering is the similarity, although weak, among IIIa, a late fill assemblage from a household, and Phase I, the earliest occupation surface at the site, and Phase IIa, the earliest fill at the site. The cause of this seems to be the high frequency of bone and the low frequency of ceramics and architecture-group artifacts.

A correlation matrix of total assemblage was also generated using the program provided with Microsoft's Excel spreadsheet program. Further, a correlation matrix was generated and clustered for the data from the South groups alone. The cluster of the correlation matrix for the total assemblage revealed essentially the same pattern as that of the Brainerd-Robinson matrix. Phases V and II/III connected the two clusters at a low level of correlation, although II/III was not as closely correlated with the early cluster as with the other matrix. Phases V, VI, VII, and III were clustered together on both, and IV and IIIb were on the end of each cluster although IV was more closely tied to III in the Brainerd-Robinson matrix and to VI in the correlation coefficient matrix. If VII and III are landscape fills, their clustering with V may indicate that they did come from domestic house lot deposits. Phase VI may be joined with the others because it includes both landscape and occupation surface material from domestic house lots. The positioning of Phases IV and IIIb on the end of this group may reflect IV's derivation from domestic deposits its mixture with other kinds of fill, and IIIb's distinctiveness as a result of its being derived from dredge deposits.

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The correlation coefficient matrix for the South/How group reaffirmed the two major clusters. However, in this case, a weak link between II and III/II joined the two. Phases II/III, III, V and VII were clustered and IIIa, VI, IV and IIIB were also clustered. While this is essentially the same result as that of the other matrices, Phase II is seen as more similar to V than it is in the matrix based on the total assemblage. Furthermore, VI was separated from III, V and VII and clustered with IV and IIIB, possibly reflecting its mixed nature. Phase IIIa was shifted to the later cluster, probably due to its general similarity as a result of the secular trends.

Thus, the cause of the major two clusters is the secular trends observed earlier in this section. This should not be a surprise, since the most abundant artifact groups, the ones whose similarities and differences contribute the most to the similarity coefficient (the kitchen group, the bone, the shell, and the tobacco-related artifacts), all exhibit secular trends. A visual examination of a three-dimensional bar chart of the artifacts groups arranged chronologically reveals this pattern (Fig. VI-6). Although the bone bars obscure somewhat the kitchen-group bars, it is clear that when one is high the other is low and that the shell, tobacco, and ballast groups vary more or less together, creating two groups. Phases II/III, V, and IIIB or IIIa are transitional, depending on the artifact group. However, subgroupings with the early and the late clusters may reflect the type of deposit or the source of the artifacts. Of particular interest is the clustering of Phases III and VII, which may indicate they are derived from domestic deposits.

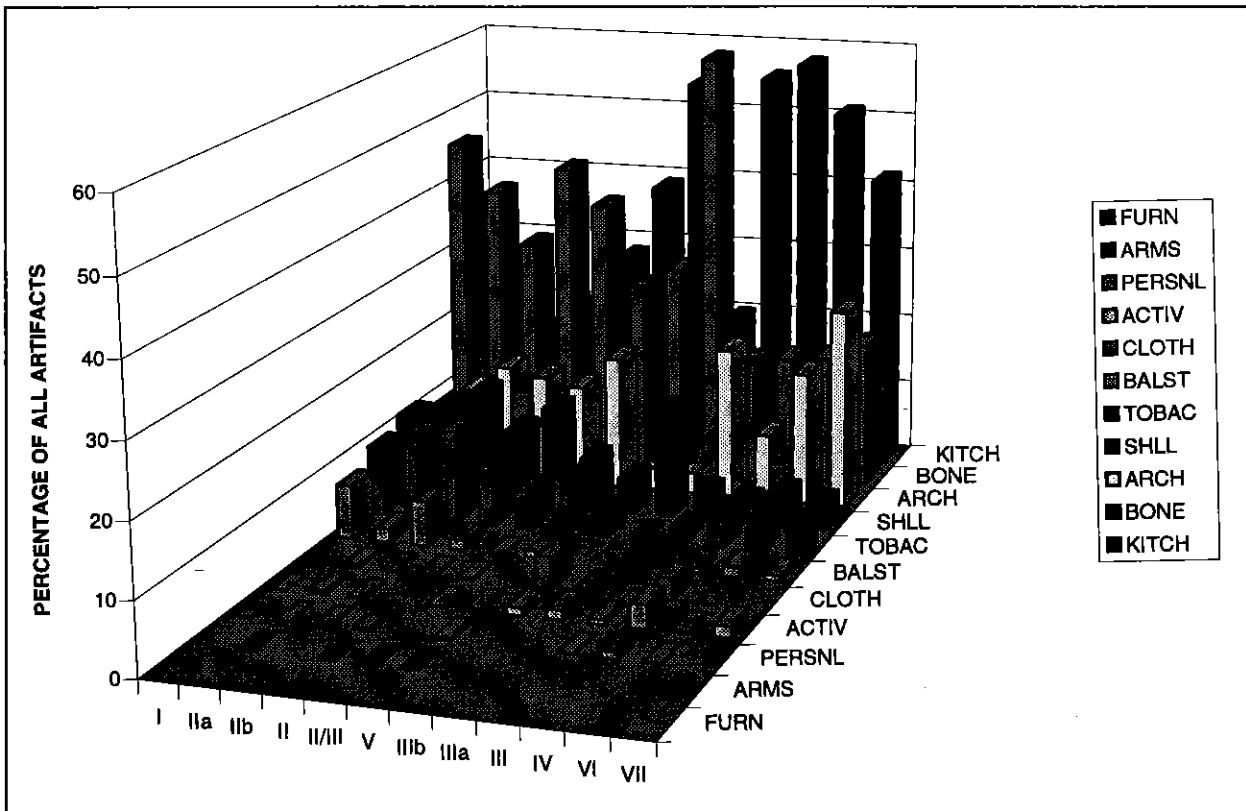


Figure VI-6 - Percentages of all artifact groups by phase.

Since there were few secular trends among the artifact classes within the kitchen and architecture groups, the classes were examined to see if they grouped the phases in patterns related to deposit type. However, when the artifact frequencies (calculated as a percentage of the South group) were organized according to deposit type, no obvious clustering by deposit type was apparent in tables of frequencies arranged by deposit type (Table VI-10).

Table VI-10. Artifact class frequencies within kitchen and architecture groups by deposit type.

Deposit type	Phase	Ceramics	Bottle glass	Table glass	Utensils	Iron pots	
Kitchen Group							
Surface	I	15.21	1.32	0.28	--	--	
	IIb	13.79	3.41	0.56	--	--	
	V	31.48	6.74	0.66	0.02	--	
Landscape	II	13.97	6.41	0.38	0.11	--	
	IIIa	15.90	1.03	2.72	0.04	0.04	
	II/III	22.49	5.00	0.68	--	0.11	
	VII	31.12	9.44	0.51	--	--	
	VI	39.49	9.97	1.49	--	--	
	IIIb	42.11	8.42	3.16	--	--	
Landfill	III	51.78	3.20	0.43	0.07	0.07	
	IIa	13.79	3.57	0.54	0.05	--	
	IV	46.98	8.49	2.26	--	--	
Deposit type	Phase	Bldg. debris	Bldg. hdw.	Other fastener	Misc	Window glass	Nails
Architectural Group							
Surface	I	0.62	--	--	0.31	6.35	17.96
	IIb	1.86	0.11	1.09	0.11	22.93	8.52
	V	0.69	0.31	0.28	0.03	7.32	19.74
Landscape	II	0.69	0.39	1.28	0.15	10.57	20.34
	IIIa	--	--	0.33	0.17	2.48	19.91
	II/III	0.47	--	1.30	--	4.61	22.93
	VII	2.36	--	1.69	--	8.78	23.99
	III	4.01	0.09	0.09	--	3.48	18.91
	VI	0.45	0.14	0.18	0.05	11.09	12.32
Landfill	IIIb	--	--	0.80	0.80	--	3.20
	IIa	0.20	--	1.08	--	17.44	8.67
	IV	0.68	0.12	0.06	--	5.28	5.53

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Correlation matrices were calculated and clustered using the same methods described above. No groupings were defined which clustered according to the deposit types.

In summary, although there may be subgroupings within the two main phase clusters that do reflect deposit types, the main cause of similarity among the phases is chronological factors rather than site-formation factors. There are several possible explanations for this result, all of which are probably significant. The first is that the deposit types defined do not reflect the reality of deposit formation conditions and therefore the attempt to correlate patterns with the defined deposit types was fruitless. The second is that the types are correct but that the measurements of the clustering, the percentages of South functional groups, were not appropriate. For example, soil particle size or artifact size and weight, might have been more appropriate. The third, related to the second, is that the chronological trends overwhelmed any strong clusters due to other factors. Alternatively, the hints of possible assemblage groupings related to deposit type suggest this avenue of investigation is worth continued exploration.

The second issue to be examined under site-formation effects is the amount of "disturbance" in the assemblages that is due to residual or intrusive artifacts. A measure was devised that focused on the replacement of the major ceramic groups that were used for general food service rather than for preparation of exclusively drinking vessels; except for white salt-glazed stonewares, these are usually refined earthenwares. These groups generally replaced one another as fashions in ceramic wares changed. The speed of this replacement varied from one group to another but seems, in general, to have been relatively rapid in most cases. The groups are, in chronological order: tin-glazed and slipped wares; Whieldon ware and white salt-glazed stoneware; creamware and pearlware; and whiteware and ironstone. Porcelain is also included because of its food-service function. However, it is not, as a general ware, particularly time sensitive. The totals of these ceramic groups were used as the N for each phase (Table VI-11). The three earliest phases were not included because their temporal position is clear.

Table VI-11. Percentages of service ware groups by phase.

Ware groups	II	II/III	VI	V	IV	III	IIIa	VII
Slip/tin Glaze	76.5	50	31.8	20.7	10	2.6	.6	5.8
Whieldon/ white salt-glazed	12.2	16.6	13	4.3	2	.8	.6	1
Creamware/Pearlware	5.8	22.2	43.3	68.3	78.4	91.5	97.6	68
Whiteware/ironstone	--	--	9.1	1	--	.5	--	13.6
Porcelain	5.5	10.9	11.6	5.6	8.9	4.5	1.2	11.7

On the basis of the extensive amount that is known about the history of these groups one, should expect Whieldon ware and white salt-glazed stoneware to begin replacing slipped and tin-glazed wares and for creamware and pearlware to replace both early groups before being replaced in its turn by the whiteware and ironstone group. The table is seriated in this general order.

In comparing the results with the stratigraphic order, several reversals are seen that, given what is known about the phase deposits, provide information on their degree of admixture. As expected, Phase VI has a larger amount of slipped and tin-glazed wares than would be expected simply from its temporal position because of its excavation into earlier layers. In addition, it has a high frequency of whiteware and ironstone, reflecting the 1820s date of its intrusion into the deposits. Phase V is seen to reflect its position as a land surface dating to the transition from the early ceramic group to the introduction of creamware and pearlware. Phase IV was deposited in Mill Pond later than

Phases III and IIIa but it has more slipped and tin-glazed wares and Whieldon and white salt-glazed stoneware than III and IIIa, indicating that it was derived from deposits with ceramics from the early and later complexes. Phases III and IIIa both reflect relative short time periods, after the earlier complexes had been replaced and before whiteware and ironstone had begun. Phase IIIa has the least residual or intrusive ceramics with only 1.2% other than creamware and pearlware; even the percentage of porcelain is low. Phase VII is indicative of an early nineteenth-century deposit, since the whiteware/ironstone group is at 13.6% and creamware/pearlware has begun to decline. It does, however, have some residual material, although less than the Phase IV deposits. The presence of ballast, also considered residual, in conjunction with the residual ceramic wares in Phases VI and VII, may be correlated with the derivation of part of these deposits from earlier land surfaces.

This ceramic analysis has indicated that there are several factors involved in understanding the site-formation process and the degree to which a deposit reflects a particular time period. Phase VI, in accordance with its stratigraphic interpretation, shows the most residual artifacts. Phase IV, deposited in Mill Pond later than Phases IIIa and III, has more earlier ceramics and this indicates that it was derived from a deposit accumulated over a longer period of time or from different deposits accumulated for different periods of time but mixed during the filling of the Mill Pond. Phases III, IIIa, and VII, although they are defined as fills, seem to have the smallest number of residual artifacts among the late deposits and will continue to be included in additional analyses.

In summary, the result of the analysis of site-formation processes has been to show that chronological trends are most visible in the archaeological record of the phases. The implication for further analysis is that it will be difficult or impossible to compare the social and economic positions of the occupants of the earlier and later phases because any differences may well be due to general processes rather than to specific decisions made by the occupants in adapting to their social and cultural milieu.

The analysis also provides some clarification of the nature of specific phase assemblages. Phase VI is clearly mixed and will not be used in further analysis. Phase IIIa is not mixed but is distinctive in a number of ways and will continue to be used. Phase IIIb, while clustered with Phase IV, seems to be basically different from the other assemblages, perhaps because it is derived from dredged material. While Phase IIIa seems to be basically a domestic deposit, Phase IIIb does not, and therefore will not be considered further in most of the analyses that follow.

The analysis also suggests that the materials in Phases III and VII are derived from domestic deposits since both cluster with V in all scenarios. They can be considered as representing the neighborhood or the city but probably were not derived from lot 21 itself.

VII. THE PHYSICAL ENVIRONMENT

This section has two parts. The first deals with the physical environment of Boston and the site as reflected by the pollen analysis (presented in full in Appendix D). The second part deals with rats as element of the environment that might affect the health of the resident population.

A. The Physical Environment

The original environment of the site was the foreshore of a cove on the Charles River. With the founding of Boston, the site began to change in irreversible ways. Pollen samples were taken to identify, if possible, the pre-settlement state of the site and how the historical landscape changed with increasing development.

Seven pollen profiles and nine cores were collected at the site and two profiles and two cores were selected for analysis. In addition, two samples taken from the bottom of the pond during Phase II (G. Kelso 1989) at the MP01 trench near Causeway Street further out in Mill Pond were compared to those collected at the Mill Pond Site. The two profiles selected reflected the most complete sequences at the site, representative of its landward and wharf portions. Profile 1 was taken from Trench 1 over the edge of the original land surface. Profile 5 was taken from Unit 11 near the end of the original wharf. Core 8 was an extension of profile 5, but located a little closer to the edge of the wharf in order to go below the wharf and collect pollen samples from the original pond bottom. Core 7 was taken inside the bulkhead from sediments that looked as if they had been deposited in still water while the bulkhead and dock were in use.

Each core was divided into a continuous sequence of samples measuring 1/20th of a foot (1.524 cm.). Since the number of samples taken for the two profiles and two cores exceeded the number of samples budgeted for analysis, contiguous samples could not be analyzed. Therefore, a sampling procedure was designed to recover the maximum data from the profiles and the cores.

Although the best sequences were selected for pollen sampling, neither profile represented a complete stratigraphic sequence for the site. Profile 1 lacked sediments from Phases II and II/III as well as all phases of interest after Phase V. Profile 5 lacked subsoil and Phases I, Iib, V, IIIa, IIIb, and III. No samples were taken from Phase IV, since it obviously came from a variety of locations and pollen formation conditions. However, Phases III and IIIa may in fact have been sampled but either not included in the analyzed samples or subjected to changed interpretation of the profile since the pollen samples were taken. This is currently under investigation and any changes to the interpretation put forward here or in the report by G. Kelso will be adjusted in the final draft. Furthermore, since there was not sufficient time to discuss the results in detail with the consultant, the final interpretations may be significantly different.

1. Regional Information

The best regional information comes from the Profile 1 sequence from subsoil through Phase Iib. No pre-European occupation information was recovered, since the subsoil contained European pollen. Thus the early end of the pollen sequence may date as early as 1630 or 1650 and extends to 1720. The pollen reflects the expected regional changes, especially as typical of the Boston area. The real but modest decline in arboreal pollen from the bottom of Phase I (HN 17) to the top of Phase Iib (HN 12) reflects land clearance from the region as a whole. The Boston area

was cleared before the end of Phase I. There is a slight but real increase in opportunistic species such as birch, alder, and black locust types in Phases IIa and IIb, suggesting that some reforestation of abandoned fields was occurring. The overall picture of a relatively steady decline in oak and pine with declining hickory, hemlock and hazel and rising birch and alder is judged somewhat unusual in most of the northeast. However, this pattern is repeated during this same period in the pollen sequence of Scottow's Dock a few hundred feet to the east (G. Kelso and Beaudry 1990).

Data from the core below the wharf were expected to provide regional or extra-local data also. However, these samples contained pollens of the European cereal, corn, and red-clover type, plus a large quantity of grass pollen -- a contrast to the samples from the bottom muck of the MP01 sample. The contrast indicates that the Core 8 samples reflected the local environment and pollen from the post-European period (G. Kelso 1994:21). The high pollen concentrations at the top of the core in the sediments in which the highest level of logs was situated suggested to Kelso that this might have been a buried surface "and may reflect the inter-tidal zone before the wharf was built over this particular spot" (G. Kelso 1994:16). If so, then the wharf logs were either excavated or pushed down into these sediments. While this may well be true, it is also possible that the surface of the wharf was exposed for some time before it was covered with Phase IIa fill.

2. Local Site Conditions and Use

The relative dominance of arboreal pollen during Phases IIa, IIb, and V from Profile 1 suggests that the site was relatively bare of vegetation, with little groundcover to mask the regional pollen spectrum (G. Kelso 1994:6). The relative frequency of arboreal and non-arboreal pollen and the low concentrations of pollen may suggest the same site conditions in Phase II and II/III from Profile 5.

However, the non-arboreal pollen does change in ways that suggest changing land use at the site. For the early history of the site, this is clearest in Profile 1. A ragweed-type, goldenrod-type, goosefoot family/amaranth-type profile at the bottom gives way to a grass, dandelion-type, carrot family, and mustard family assemblage in the middle of the profile. This assemblage is succeeded by a grass-dominated spectrum with significant sorrel-type and red clover-type and expanded European cereal and dock-type pollens.

The blue clay subsoil (HN 10) has a typical Historic period pollen spectrum and suggests a sequence of the invasion of native pioneer species on culturally disturbed ground followed by weedy European taxa such as the mustard, carrot, and nightshade families, plantain, and other European taxa. The presence of red clover-type pollen reflects the introduction of European species to replace the relatively poor fodder provided by the native grasses. Red clover first appeared in the pollen record at Scottow's Dock in a feature dating to the 1680s (G. Kelso 1994:9).

The historic pollen may have entered the native blue clay through a number of mechanisms. Kelso says that the upper surface of the clay may have been turned at least once, perhaps in association with landscaping activities associated with drying the land. This interpretation receives some support from the pollen, since the pollen suggests a change from brackish wetland to a less wet environment (G. Kelso 1994:10). The wooden drain next to Profile 1 suggests the means by which a drier environment was created.

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It is also possible that the surface of the soil was churned through the use of the foreshore as a landing place. The first evidence of a wharf in the documents is in the 1650s, well before the construction of the archaeological wharf around 1710. In addition, the pollen from below the wharf in Core 8 suggests the use of this area for the transport of fodder and grains before the construction of the archaeological wharf (G. Kelso 1994:16). The movement of such material over the ground before the deposition of the artifact-bearing HN 17 in Phase I may represent a commercial use of the lot before it was used for residential purposes.

The use of the area for landing fodder or as a stable is reflected in the remainder of the pollen sequence from Profiles 1 and 5 and Core 7 from the bulkhead. There is a buried surface or A horizon at the top of Phase IIb (HN 12) in Profile 1. Immediately below this are indicators of a fairly active surface with a decrease in soil fertility. The surface of HN 12 and the bottom of Phase V (HN 7) have high pollen concentrations comprised of cereal, dock-type, sorrel-type, and red clover-type pollens. All these taxa indicate a connection with fodder for livestock. Since European grains are self-pollinating, little of the pollen escapes until it is threshed. However, cereal pollen does stick to the grain itself and has been recovered from straw and threshing spoil, as well as from livestock manure. Dock and sorrel are often found in pastures and red clover is planted for fodder. The abrupt increase in grass pollen associated with these other pollen types strongly suggests that they represent a complex of plants fed as fodder to livestock (G. Kelso 1994:13). This interpretation corresponds with the historic documentation of the presence of a stable on the rear of lot 21 by at least the 1720s. Such a fodder-complex is found in Phase IIa, on the early surface of the wharf, at the top of Phase II (G. Kelso 1994: 18) and probably at the top of Phase II/III as well (see G. Kelso 1994:Fig. 12, sample 55) on the portion of the wharf that extended over the water.

The fodder-complex is also found at the bottom and top of Phase V (HN 7). Kelso suggests that the top, middle and bottom of this matrix may derive from separate events. The top two matrix events would have come from two separate fill episodes. The bottom event relates to the use of the land surface. The bottom and top have high pollen concentrations and the fodder complex. The sediments of the middle event have low pollen concentrations but can be interpreted as having the fodder complex also. However, the top matrix displays its highest pollen frequencies at the bottom of the top matrix, and these decline toward the top, suggesting that this matrix had been turned over (G. Kelso 1994:14). There is no indication of a surface at the top of HN 7. This is not surprising, since it was probably truncated by Phase X activity dating to the early/middle twentieth century.

The fodder-complex continues into the pollen from Core 7, which was taken inside the bulkhead in silt deposited in still-water conditions. The date of this deposit is from 1795 to 1809, or from the time when the wharf was built to the closing off of the wharf from the water with the construction of Pond Street. All samples reflect the fodder pollen spectrum. The upper portions of the deposit, which were high in organic content, may indicate an increased use of the wharf for the movement of fodder in the later years (G. Kelso 1994:19) or that manure or decayed animal-bedding material was thrown into the Mill Pond.

The fodder complex also continues, if anything more strongly, into the fill of the drains in Phase VI and into the matrix into which the cobblestones of the floor of the nineteenth-century stable were laid (Phase VII) (G. Kelso 1994:18). The rubble-laden, sandy matrices of these periods would not have been suitable for growing the grass and fodder plants whose pollens appear in the sequence. The fact that the fodder pollen spectrum and the pollen concentration are high in the drain trenches reinforces the stratigraphic interpretation that the trenches were cut through an active stable yard. However, since the stable was apparently in operation throughout much of the eighteenth century and the early nineteenth century, this information does not clarify the question of whether the

drains were excavated after or before the cobbles were laid down. The fodder pollen could have come from the pollen in the Phase VII matrix (HN 41) (G. Kelso 1994:18).

B. Health Issues

Since no privies or other locations that might be good environments for the preservation of parasite samples were found, the discussion of health in the urban environment is limited. However, it may be worthwhile to look at the relative frequency of rats, both as an indirect indicator of the health of the population and a component of the environment.

The comparative data base is small but provides a starting point for analysis. Three sites had accessible information and provided information on the frequency of rats in features and in yard middens. The first site, dating to the Early Republic Period site, the Narbonne House in Salem, Massachusetts (Moran et al. 1982). The other two were late nineteenth-century sites. The second site was a residence in Georgetown in Washington, D.C. that became a restaurant in the late nineteenth century (Able et al. 1993); the third site, the Mechanic Street site in Cumberland, Maryland, was occupied throughout the nineteenth century and may have had a restaurant on it in the late nineteenth century (Cheek et al. 1994).

The frequency of rat remains was taken as an indication of the relative frequency of these animals in the house lots. The number of rat bone pieces was divided by the number of vertebrate mammal bone pieces. Rat-bone frequencies at the Mechanic Street site varied from zero to 1.4% for the yard deposits and from zero to 6.7% in feature deposits where they would have been more sheltered from natural dispersion and destructive forces (Cheek et al. 1994:184, 195). The yard deposits at the Georgetown site had frequencies of 0.5% and from a protected environment under the house the percentages ranged from 1.5 to 5.7% (see Able et al. 1993:Appendix II). At the Narbonne House, both the 1790 and 1805 trash pits contained only 0.5 percent rat bone (Moran 1982: Tables E-2; E-14). The higher percentages of rats in features at the sites in Georgetown and Maryland could relate to the presence of a restaurant on the premises. The low percentages at the Narbonne House were similar to those of the less protected yard deposits at the Georgetown site but fewer than the yard deposits at the Mechanic Street site. However, given the presence of a stable and grain at the Mill Pond Site, it was considered likely that rats would have been more common in the deposits after the stable was established than before the stable and more common than the numbers found in the Narbonne house.

This assumption was found to be at least partially supported. No rat bones were found in Phase I deposits before the stable. Two rat bones, or 0.6%, were found in the Phase V deposits when the stable was in operation. This was marginally more than the 0.5 percent found in features at the Narbonne House. However, the Narbonne House deposits were features where the rat bones were probably protected from destruction, rather than open surfaces. Thus, the presence of marginally more bones in Phase V suggests that there were indeed more rats around the stable than around the Narbonne House, although not as many as around the late nineteenth-century restaurant sites.

The implications for site health issues is not obvious since this portion of the site is not adjacent to the houses on the lot. However, the frequency of rats is certainly not beyond the range of expectations, based on the limited sample of sites for which these data have been examined.

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C. Summary

The excavated portion of lot 21, the Mill Pond Wharf Site, seems to have been an active yard surface which limited the growth of non-arboreal plants. The historic record and the pollen data reinforce each other in suggesting that an important use of this portion of the lot was as a stable, from at least the 1720s. The documents report that it was used for horses and, during the Vose occupation, for a milk cow, as stated in Vose's probate inventory.

The pollen evidence, however, can also be interpreted to suggest that the foreshore area and the seventeenth century wharf may have been used to deliver fodder to the town of Boston. On the other hand, there may have been a stable in this area earlier than the land transactions records suggest. Evidence for the extra-local and regional pollen sequence confirms that identified for Scottow's Dock.

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VIII. LAND USE AND SPATIAL ORGANIZATION

A. Introduction

The goal of this section is to integrate the archaeological and historic information so as attempt to identify different areas of yard use. The analysis will not be able to use archaeological information to address spatial organization in any depth because the major blocks of excavated deposits are derived from different sources. The block of units on the east edge of the excavation area is interpreted as composed of successive land surfaces and the block on the edge of the wharf as primarily successive fills. However, this section will relate the archaeological data to the historic documentation of the land use.

B. Historical Data

Various nineteenth-century maps (see Figs. V-32 and V-33) including the Slatter and Callan map of 1852, shows an open yard that corresponds to the distribution of the cobblestone paving at the top of Phase VII. This stable was under construction by 1831 when Mrs. Spurr, Josiah Vose's daughter, finally disposed of the property to Elias Haskett Derby. A brick stable was being built on the east edge of lot B (Fig. V-5) next to lot J. This may place the foundations of this stable inside the project area. The stable building on the 1852 map does project into the project area, as far as can be determined, and its west wall lies between Excavation Unit 14 and the eastern block of excavated units. As discussed above, no cobbles were found to the west of this line. Since the Phases III and VII deposits were destroyed by the Phase X activities in this area, there may have been no indication of a stable wall in this unexcavated area.

The deed of 1831 also mentions stables on the north and west edges of lot B. One of these may be the building that appeared on Hales 1814 map, near the water edge of the property, or a successor building. At least one stable is mentioned in Vose's probate of 1818 and his direct tax of 1798. Jackson's probate inventory of 1773 implies a stable for his horses, wheels, and carts. Maycock's inventory, two years earlier, mentions only outbuildings and no horses. Maycock does mention in his will that a portion of his land on the north side (about where the Phase II/III deposits were found as well as the IIIa deposits) had been improved for his wood pile. The 1722 deed to Maycock from Eustis also mentions a stable. The 1722 Bonner map and its successors place a building in this same general area. It is depicted as a dwelling but may have been the stable (Fig. IV-6). The only other mention of a function for what is probably the rear portion of the lot was in 1660 when William Waters was directed to open the highway through his garden to the mill ward. If the garden was situated in back of the house, it would have been close to the east edge of the excavated area. Since no evidence of a garden was found, it probably did not extend into the site area.

As demonstrated archaeologically, a wharf was built in the early 1700s and continued into the early 1800s. The wharf is mentioned in the land transactions of 1709 and 1715, not mentioned in 1723, mentioned in 1727, and never referred to again. A dock is mentioned in 1651 and a pier is known to have been built out from the wharf in the late 1700s or early 1800s. The reconstruction of the bulkhead of the wharf and the construction of the pier both imply that the wharf was considered functional enough to be worth the expense of repair and reuse, ostensibly for commercial purposes. Another and less likely reason is that it was done for aesthetic reasons as part of a landscaping event. However, with the stables on the back of the lot, this seems less likely.

It also seems unlikely that there were any dwellings in the excavated area of the lot. The late historic documents indicate that the "mansion house," which in section IV.A is interpreted as the original house built by William Waters by 1668, was on the southeast portion of the lot on Back Street. A tenant house of brick appears as early as Jackson's 1773 inventory and is still in existence on the northeast portion of the property on Back Street when sold to Derby in 1831. The 1709 land transfer to John Eustis, Sr. is the first mention of two dwellings in the form of "a messuage or tenement" and "tenements" on the property. It is probable that, like the wharf, the new dwelling was built between 1707, the date of the Antram plat (Fig. IV-2), and the 1709 sale to Eustis. This is confirmed by the description on the SPGI property in the early 1700s as having one dwelling house and additional land (Kellaway 1961:226).

The occupations of the residents of the lot may also contribute information on the kinds of activities that took place there. Information on the occupations of the inhabitants is scanty until Eustis's purchase of the property in 1709. Before then, the only information is that Waters was a mariner. John Eustis the elder was a mariner and his son was a brazier, as was Maycock during the early part of his career [quote information about multiple occupations and the sale of a variety of products by general merchants]. Maycock, Joseph Jackson and Isaiah Vose were all truckman in the last quarter of the eighteenth century. As mentioned earlier, the term truckman has defied easy definition. It is not simply a cartman; the famous cartmen of New York were definitely analogous to teamsters and were not of the same economic class as these truckman of Boston (). The best interpretation of this term is that it is a general merchant who facilitates the exchange of goods.

In summary, the historic information about the use of this portion of the lot is most detailed for the late eighteenth century and early nineteenth century when the area was used consistently as a stable. Documentary evidence of a stable, which may have been built by the Eustis family, occurs as early as 1721. The area also probably functioned as a wharf at which goods were loaded or unloaded. The excavated area is on the edge of the wharf and on or over the edge of the original fast land. It is also in the center of the lot from north to south, although most of it lies south of the line of the alley that became Salem Place (see Figs. V-5 and V-??), placing it more toward the rear of the "mansion" than the brick dwelling north of the alley.

This plot of land underwent two, possibly three, significant developments in the early 1700s: the construction of a wharf and an additional dwelling by SPGI, and the Eustis family's construction of a stable by 1721. The next development, the reconstruction of the bulkhead and pier is archaeologically documented. The third development is the filling of the Mill Pond, together with the later subdivision of the lot and its transformation into a commercial rather than a domestic property.

C. Archaeological Data

Since the pollen data are not yet available, the examination of the possibility of gardens in the excavated site is postponed. However, no archaeological features related to gardens were found and their presence within the project area is unlikely.

Of the occupations listed in the historic records, only the brazier and perhaps the truckman might leave artifactual evidence of on-site activities relating to their occupations, and these might be restricted to certain portions of the property. If the truckman needed horses and wagons, as Jackson's inventory indicates, then there might be evidence of horse gear; the same as would be expected of a stable in general. A brass-making operation may have left

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evidence of the artifacts associated with the smelting of metals, such as crucibles, slag, and possibly pieces of kiln brick. The identification of the wharf's commercial activities on the basis of artifactual evidence is difficult. Ideally, boxes or barrels of goods would be transferred between ship and shore at the wharf, but not opened in the process of transfer. Some evidence of activity may be found on wharf surfaces or in the water at the side of the wharf, but this is relatively unlikely.

Artifacts related to horses were found in Phase IIa (Unit 21), IIb (Unit 9), V (Unit 20), III (Unit 13) and IV (Units 17 and 18). Phases V and IIb have been interpreted as surfaces and contained a fragment of a horseshoe in Phase V and a fragment of a spur in Phase IIb. Three fill phases contained another spur (Phase III), another horseshoe (Phase IIa) and an almost complete horse collar (Phase IV). No horse-related items were found in Phases I and IIa, which predate the known stable.

Although only one horse-related item was found on each occupation-surface deposit, it is instructive that no items of horse tack were found in the five Charlestown features (Pendery 1987) that generally overlapped the time range of the Mill Pond deposits but were primarily residential lots. This indicates that the presence or absence of such gear is unusual in urban lots of this time. However, since the yard middens were not analyzed, the lack in the Charlestown sites could be due to the different contexts analyzed.

In a broader comparison, horse tack was also not found in the excavation of the Narbonne House, Salem, Massachusetts, which was more or less equivalent to the Phase V deposits at Mill Pond, (Moran et al. 1982), or at the Paul Revere house, which contained deposits from the seventeenth through twentieth centuries (Eliu 1991).

There is evidence for a brazier's activities in both the fill deposits and the occupation deposits. Fifteen fragments of at least nine crucibles were identified. One fragment was from Phase IIb (Unit 9) and two from Phase V (Units 15 and 16). However, most came from Phase III (six fragments) and IV (five fragments). Phases IIIa and VI also yielded one fragment each.

Slag similar to that found adhering to the crucibles was also recovered, but since this material was sampled rather than collected in its entirety, its occurrence was recorded in terms of the number of stratigraphic units in which it appeared. In Phase I, there was slag in Unit 5. Slag also appeared in Units 9, 15 and 14 in Phase IIb, twice in Units 9 and 15, and once each in Units 10, 13, and 20 in Phase V. It is clear that there was a concentration of brazier-related material in Units 9 and 15 during Phase V with some in Phase IIb as well. The data suggest that this area may have been a dumping area for broken crucibles and expended fuel during Maycock's occupation in Phase V. This observation is strengthened when the slag from Phase VI, the fill of the drain trenches, is also considered. There were seven contextual units associated with the drains containing slag in Units 9, 15, and 16. The presence of a crucible fragment and slag in contextual Unit 9.5 in Phase IIb suggests that this area was used for disposal from the very beginning of Maycock's ownership and that perhaps the Phase IIb surface was exposed during the initial period of his occupation.

A substantial number of crucible fragments appeared in Phase III (6) and Phase IV (5); however, there was no slag in these phases. There were two pieces of brick that may be parts of kiln brick in Unit 10 in Phase III. Other pieces of possible kiln brick were found in Phase V and VI in the same unit. On the other hand, there was a wide distribution of slag in Phases II and II/III, especially in Units 10, 11, 12, and 13; and one crucible associated with slag in Phase IIIa. Since slag is undoubtedly a more common byproduct of brazier activity than broken crucible

fragments, we suggest that it is a better marker for brazier-related activity, especially when it occurs frequently. Thus, the deposits from Phases II, II/III, and IIIa may include industrial and household refuse from the Maycock occupation. The crucible fragments from Phases III and IV, since they postdate the Maycock occupation and are not found with slag, should be considered to derive from off-site deposits.

Primary trade items that entered Boston were consumer goods from England and raw materials from the interior or northern coastal areas. There was no unusual concentration of goods that could be considered to reflect commercial deposits. Excavations in the pond bottom beneath the wharf did not recover any artifacts at all and therefore give no indication of activities. A cowrie shell was found in Phase IIb, overlying the wharf. Since cowries are not native to the north Atlantic, this shell may indicate some marine-related activity.

A weight from Phase II could represent commercial activities that took place on the wharf. It was found in HN 33 one of the Phase II strata that were interpreted as fill. However, the large number of artifacts in the HN could have come from on-site activity and the weight could thus reflect on-site commercial activities.

Maritime-related activities are indicated by the recovery of copper nails, generally used in the construction of boats. All the cut copper nails were found in phases dating to either the filling of the Mill Pond or after (Phases IV and VII). Copper wire nails were found in Phases VI and IIa. The one in the Phase VI deposit was from Unit 17 and probably derived from the Phase IV or later fills. The one in Phase IIa was from the top layer in Unit 7, in HN 19, which was in contact with a twentieth-century disturbance. Therefore, none of these copper nails can be securely related to on-site activities.

D. Summary

The primary use of the lot was for domestic purposes. The first major change in land use occurred in the early eighteenth century when the wharf and a stable were built. In addition, another house was constructed on the lot. The second major change in land use occurred with the sale and subdivision of the property when the portion in the project area became a commercial stable. This latter change had been in process for a number of years, since the Mill Pond was filled. In fact, a commercial stable may have been in operation for 15 to 20 years before the property was finally sold.

At least two and probably three nondomestic activities took place on the site. The historic documents suggest that stabling, whether for private or commercial purposes, and metal working occurred on the property. Artifacts provide confirmation of these two activities. The wharf and pier suggest the lot also was the scene of commercial maritime activity, but neither the documents or the archaeology suggest any specific maritime-related commercial activity, of which only a small brass weight provides an inkling.

Because of the limitations on the excavated portions of the site, no real examination of the spatial patterning of activities on the site was feasible. However, it seems likely that one of the identified areas may have served as a dump for metal-working debris.

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IX. WATERFRONT DEVELOPMENT AT THE MILL POND SITE

A. Introduction

Waterfronts, to borrow a term applied to landfills (Sapan 1985:170), can be considered mega-artifacts. They generally cover blocks and are composed of landfills and various docking facilities. Their development is connected directly to the economic well-being of a city that depended on commercial shipping for its wealth. Throughout the seventeenth, eighteenth, and at least part of the nineteenth century, Boston was such a city. In fact, until 1735, it had the greatest flow of trade of all the North American Colonial cities (Bridenbaugh 1960:330).

The goal of this section will be to compare the archaeological remains of the Mill Pond wharf to others of similar time period and to place the construction of the wharf in its social and cultural context. In addition, the contents of the landfill will be examined and compared to landfill recovered from Boston and other urban sites on the east coast.

B. The Mill Pond Wharf

1. Introduction

Wharves are structures that extend along or project out into a body of water, modifying the shoreline by creating made land and allowing access to navigable water. Wharves constructed along the shore rather than extending out into the water like a pier are termed marginal wharves or quays (Norman 1987:7). The creation of land through the construction of wharves is nearly universal to seaports (Huey 1984:32). Usually, the main impetus for creating the made land was to provide a facility at which materials or people could be moved from land to vessels or vice versa. The transformation of natural shorelines, through wharf construction, allowed for easier disembarkation of people and materials to and from vessels. Thus wharves had an integral role in the transportation infrastructures of port cities. The planned modifications to natural shorelines created a link between land and sea transportation routes, thereby increasing a port's efficiency. Wharves stabilized the shoreline and allowed access to deeper water. In turn this created a reliable place where larger vessels could dock. Throughout the history of eastern seaboard ports, and Boston specifically, wharves and the made land that resulted played an important role in the urbanization process.

Wharf construction methods along the eastern seaboard primarily employed four common construction types: crib, solid-filled, cobb, and grillage/raft (Morin 1991; Morin et al. 1991:VI-2). Morin (1991; Morin et al. 1991) has presented the most complete and comprehensive synthesis of archaeological wharf sites on the eastern seaboard. The examination of 32 wharf sites from ten cities was undertaken to develop an overview of wharf construction technology and initiate comparison among eastern-seaboard wharf sites. The construction dates of the wharf sites compared ranged from the seventeenth through nineteenth century. In general, crib, solid-filled, and cobb wharves were variations on a common construction theme: a box frame structure was constructed and then filled. Local factors (i.e., water conditions, bottom conditions, and financial conditions) rather than time of construction were more important in terms of which method of construction was chosen (Morin et al. 1991:VI-34). Wharf construction methods were similar along the entire eastern seaboard and through time, except for solid-fill wharves which displayed a restricted distribution to Massachusetts and Philadelphia, Pennsylvania (Morin et al. 1991:IV-32).

The vernacular architectural construction methods employed along the eastern seaboard developed during the medieval period in Europe and continued along the United States eastern seaboard into the nineteenth century

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(Gallagher [1991]:137; Roberts 1989:133). It should be noted that wharf construction methods in England appear to have undergone a transition during the seventeenth and eighteenth centuries. The scarcity of wood possibly caused English wharf builders to rely increasingly on stone for wharf construction. However, in the Colonies, wood was plentiful and presumably inexpensive. Consequently, although newer wharf construction methods may have been developing in England, these methods may not have been used in along the eastern seaboard because traditional wood construction methods were still appropriate.

A crib wharf was created by first constructing a timber box frame (crib) of sufficient depth that when sunk a pre-determined portion of frame remained above the water. The timber box frame was often constructed at a different location and floated to the job site (Norman 1987). Once floated to the job site or, if constructed in place, after reaching a desired height above the water, the interior of the frame box was filled. The material used to fill the interior varied, probably whatever was cheap and readily available was used. Materials reported as fill in crib wharf construction included: stone, gravel, coral, and wood (Morin 1991:VI-2). Crib wharves have been found at several locations including the Cheapside dock site, Baltimore, Maryland (Norman 1987) and the Long Wharf, Boston, Massachusetts (Bower et al. 1984).

Solid-filled wharves were similar to crib wharves, except the timber box frame was constructed to hold finer materials, such as mud and sand. Timbers were tightly joined in order that chinks and other spaces be kept at a minimum, thus reducing erosion of the contents. In addition, solid-filled wharves were constructed using retaining walls and bulkheads. The distribution of solid-filled wharves appears to be restricted to Massachusetts and Philadelphia (Morin et al. 1991:IV-32-36). Sites with solid-fill wharves include Derby wharf, Salem, Massachusetts (Wilson and Moran 1980; Morin 1991), and the Meadows site, Philadelphia (Morin et al. 1991).

Cobb wharves are essentially similar to crib and solid-fill wharves. However, cobb wharves were designed to retain coarse fills, such as cobblestones (Morin 1991; Norman 1987:12-17). In addition to cobblestones, cobb-type wharves filled with ballast, brush, and tree stumps have been investigated. The cobb wharf's timber box frame had larger openings between courses; finer fills would have eroded through the chinks. The term cobb wharf refers to the open construction of the box frame rather to a specific type of fill. Morin (1991) indicates that confusion exists within the literature as to the correct use of the term cobb wharf. It has been used to describe the cobblestone fill of a wharf and alternatively, and correctly, to describe a crib with large open spaces between courses. Norman (1987:12) indicates that in New England there may not have been a distinction between the terms cobb wharf and crib wharf. Sites with cobb wharves include the Bostonian Hotel site, Boston, (Bradley et al. 1983), Barclay's Bank site, New York, (Morin 1991), and the Follett site, Portsmouth, New Hampshire (Heintzelman 1985; Morin 1991).

The grillage/raft type wharf construction method involved the construction of a timber raft, which was then floated to the job site and weighed down by stones. Successive rafts were constructed, floated into position and then sunk to form the wharf (Morin et al. 1991; Geismar 1983; Norman 1987:26-27). Grillage/raft wharves were first identified in New York City at the 175 Water Street site (Geismar 1983). The grillage/raft wharf construction method does not appear to have been as widely used as the other methods.

The treatment of the timbers and the joints used within the four construction types varied from minimally worked to square-hewn. A minimally worked timber was a log that had only its branches removed, retaining its bark. Minimally worked timbers required a low level of effort compared to square-hewn timbers, which had branches and bark removed and were then shaped. Likewise, the types of joints employed during construction varied and

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included various notching techniques, cross-lap joints, mortise-and-tenon joints, miter joints, etc. (Morin et al. 1991:IV-27 and IV-28).

A bulkhead is a retaining wall that functions to hold back earth, water, etc. which provided a stable transition between land and water. In general, bulkheads formed the exposed waterfront edge of a wharf. Typically, bulkheads were made of either squared horizontal timbers that were notched together; pilings driven into the bottom with horizontal planks affixed on the landward side of the pilings; or piled stones (Norman 1987:13). Bulkheads constructed using horizontal timbers have been encountered in Charlestown, Massachusetts (Gallagher [1991]), Alexandria, Virginia (Engineering Science 1993), and in Baltimore, Maryland (Norman 1987). A dry-laid, cut-granite bulkhead was partially identified as lining a portion of Town Dock in Charlestown (Gallagher [1991]:9).

2. The Wharf at the Mill Pond Site

The archaeological investigations at the Mill Pond site resulted in the identification and excavation of waterfront features from the Colonial and Early Republic periods. These features included a wharf (Phase IIa) constructed between 1707 and 1709 and a bulkhead and associated pier (Phase IIIb) constructed ca. 1795. The earlier (Phase IIa) wharf displayed methods of construction unlike those found for construction of wharves at other sites along Boston Harbor and at other eastern seaports in that they differed from the vernacular architectural construction methods that had developed during the medieval period in Europe and which have been found to persist along the United States eastern seaboard into the nineteenth century (Gallagher [1991]:137; Roberts 1989:133). This section presents a comparative study of the Mill Pond wharf, other Boston wharf sites, and other eastern-seaboard wharf sites (Morin (1991), Morin et al. (1991); Norman (1987); and Heintzelman (1985)).

a. Comparative Sites

Wharf features from the Boston area and wharf sites that date to the early eighteenth century are emphasized in this discussion. These projects included investigations of several wharves dating from the mid seventeenth through mid nineteenth century. Along the Boston waterfront, features have been investigated at the 75 State Street site (Roberts 1989), Bostonian Hotel site (Bradley et al. 1983), Long Wharf site (Bower et al. 1984), and the Town Dock and Parker-Harris sites in Charlestown (Gallagher [1991]). In Salem, Massachusetts, the National Park service has investigated wharf features within the Salem Maritime National Historic Site (Wilson and Moran 1980).

Archaeological investigations in New London, Connecticut (Artemel et al. 1984), New York City (Geismar 1983; 1987; and Huey 1984), Alexandria, Virginia (Engineering Science 1993), Philadelphia, Pennsylvania (Morin et al. 1991), and Baltimore, Maryland (Norman 1987), have encountered waterfront features. Although there have been several other investigations that have encountered waterfront features, either these investigations were not appropriate for comparison or the reports of the investigations could not be located. Information on several sites, for which the report of the investigations could not be located, was summarized by Morin (1991).

Archaeological investigations at 75 State Street, Boston, were conducted by Timelines, Inc., in 1988 (Roberts 1989). The 1.37-acre project area fronted on State and Kilby Streets. Although the project area had been the focus of human activities from the Contact period through modern times, nineteenth- through twentieth-century construction activities had destroyed much of the earlier deposits. A Colonial-period wharf was encountered and identified as Oliver's Dock. The wharf was interpreted as being of an open-cell crib construction, with larger timbers and granite

blocks used as fill. The form and characteristics of Oliver's Dock were likened to those of Town Dock in Charlestown and the Cheapside Dock in Baltimore.

Archaeological investigations at the Bostonian Hotel site, Boston, were conducted by the MHC in 1981 (Bradley et al. 1983). The site was located at the corner of Blackstone and North streets. Prior to filling, ca. 1800, the site location was an inlet on the southeast end of Mill Creek. The natural topography was that of a marshy shore. Modifications of the waterfront portion of the property between 1650 and 1676 included the dredging of the peat bottom, construction of a cribbed wharf, and creation of made land. (Bradley et al. 1983:77). The waterfront was gradually filled through the eighteenth century and finally ceased to function as a dock in the 1790s. Archaeological investigations included site monitoring and the recording of exposed wharf features while construction of the hotel foundation hole was under way. Investigations identified the remains of a wharf dating to ca. 1650 to 1676. The wharf was of cobb construction with stone and log fill. There were also vertical wood plank supports, which had been driven into the bottom. These planks functioned to hold the wharf cribbing in place. The surviving portion of the wharf cribbing was 4 ft. (1.22 m.) deep, while the box frame was constructed with axe-trimmed, debarked white pine logs, stabilized by vertical timbers (Bradley et al. 1983:46-47; [Figure 16]). Exposure of the wharf feature was limited due to the constraints of the field investigations.

Archaeological investigations were conducted by the Museum of Afro American History in 1984 at the Long Wharf site, Boston (Bower et al. 1984). Long Wharf was a large projecting wharf that was the focal point of the eighteenth-century Boston waterfront. The wharf projected from the foot of King Street and construction of the wharf began in 1711 (Bower et al. 1984:7,19). The archaeological investigations included borings and test trenching. Long Wharf was a crib wharf whose hewn timbers were of Atlantic white cedar. The investigations were limited to trenches, consequently the exposure of the wharf was limited.

Archaeological investigations were conducted by the Public Archaeology Laboratory, Inc., in 1986 at the Town Dock Wharves/Dry Dock site in Charlestown, Massachusetts (Gallagher [1991]). The project area included a location which had formerly been Charlestown's main dock during the late eighteenth through early nineteenth centuries (Gallagher [1991]:48). The excavations exposed a solid-fill, crib-type wharf, the surviving portion of which was 12 ft. (3.71 m.) in depth with the interior filled with silty sand (Gallagher [1991]:89-116). The wharf included a series of cruciform tie-backs, similar in form and function to those of a London wharf site (Gallagher [1991]:107).

Archaeological investigations in Portsmouth, New Hampshire, identified a cobb-type wharf dating to ca. 1720 (Morin 1991; Heintzelman 1985:91-100). The crib box frame was constructed out of debarked white pine and hemlock timbers. Vertical timbers (pilings) secured the crib in place, a system much like that encountered at the Bostonian hotel site. The primary fill was ship ballast and large cobbles, although finer materials were present on the floor of the crib and had also been used to prepare the surface of the wharf for a road. Wood joints encountered on the crib included notching and mortise-and-tenon joints.

Archaeological investigations at Barclay's Bank site in New York City identified a late seventeenth-century wharf (Morin 1991; Morin et al. 1991). The wharf was of cobb construction and consisted of 5 ft. sq. timber cribs filled with rock and coral, with vertical pilings holding the cribs in place.

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Archaeological investigations at the 175 Water Street block in New York City identified a wharf, with an initial construction date in the mid eighteenth century. The wharf was a grillage/raft wharf which consisted, at a minimum, of ten layers of timbers (Geismar 1983). The rafts were constructed from timbers notched together, which were positioned and then loaded with stones to sink them.

It is of note that the three wharves with dates of construction in the late seventeenth through early eighteenth centuries were similar in construction elements used. For example, the cribs at all three sites were held in place by vertical pilings. The sharing of common construction elements between sites in Portsmouth, Boston, and New York City suggests that there was some type of standardization of wharf construction methods at this time. Several factors could account for the uniformity in construction, including a restricted pool of wharf builders that migrated to jobs. Investigations at other eastern-seaboard wharf sites indicate that by the late seventeenth century individuals specialized in wharf construction and advertised their services in different port cities (Engineering Science 1993:34). It is not clear when this craft specialization would have begun but, given the links between port cities, it is likely that workers and/or information were easily exchanged. Alternatively, the techniques used to construct wharves may have been widely known to waterfront workers (such as shipwrights) and the unstated vernacular methods of wharf construction remained similar across the eastern seaboard, not because of a restricted pool of specialists, but because these techniques provided the best results.

b. Mill Pond Waterfront Features

The data-recovery investigations at the Mill Pond site encountered a wharf constructed between 1707 and 1709 (Phase IIa) and a bulkhead constructed ca. 1795 (Phase IIIb). Section V of this report discusses these features in detail and places them within the context of the site.

Between 1707 and 1709, at the end of the SPGI tenure on the property, a wharf was built at the rear of lot 21. Construction of the Phase IIa wharf involved at least three general activities: modification of the natural shoreline, construction of a timber base, and the placement of fill on top of the wood timbers to create a usable surface. A fourth activity was probably the construction of a bulkhead, but the majority of evidence for the early wharf's waterside edge was destroyed by later site activities. The shoreline modifications included depositing fill on top of the original foreshore and fast land. The modifications to the shoreline did not extend into the Mill Pond for any appreciable distance. Once the shoreline had been modified, the timber portion of the wharf structure was assembled in place. The absence of fills beneath the wharf indicates that, where it was directly adjacent to the shoreline, the Mill Pond bottom was almost level. Construction of the wharf timber structure was simple: a grid of stacked timbers was created, then fill was deposited into the voids. Thus, a stable platform was formed upon which fill was added to create a solid, dry surface. Four layers of wharf timbers were encountered. Except for the timbers at the water's edge of the wharf, the timbers were rough-cut logs with bark from which only the branches had been removed. The lowest two layers served to even the pond bottom and probably served as a solid base for the workers. These timbers were placed parallel to the shoreline and were larger than the timbers above them (Figs. V-15 and V-16). Upon these timbers and perpendicular to the shoreline most of the timbers were laid. Finally, a few timbers were set on top of the main body of timbers, parallel to the shoreline. The diameter of the timbers ranged from a minimum of 0.5 ft. (15 cm.) to a maximum of 1 ft. (30 cm.). Junctions between timbers were examined for evidence of how timbers were joined, but no fasteners (nails, spikes, ropes, etc.) and no cut joints were encountered. The absence of any joining mechanisms supported the interpretation that the wharf was constructed on the spot rather than being constructed at some other location, floated to the site, and then sunk. The last step in the

construction of the wharf was the creation of a usable surface. Fill was deposited upon the timbers, voids were filled, and the wharf surface was raised above the high-water mark.

The form of the timbers suggests a wharf of the grillage type. However, as defined by Morin (1991) and Norman (1987), grillage wharves were rafts floated to their ultimate location and sunk. The Mill Pond wharf cannot, therefore, be a grillage wharf because of the absence of any joining between timbers, such as would create a rigid, floatable structure. In addition, grillage wharves were sunk by placing stones on top of the raft structure and at the Mill Pond site no such weights were found. On the other hand, the architectural term grillage refers to a type of cross-layered load-bearing construction used to build on unstable surfaces (Geismar 1983:684-686; Norman 1987:26). Consequently, while the wharf at the Mill Pond site is not of the grillage type, the basic concept of grillage construction was employed.

The edge of the original wharf is probably indicated by at least two square logs (HNs 286 and 289). Their position suggests they formed the bottom of a bulkhead compound of horizontal logs. However, construction from later phases (II/III and IIIb) included the alteration of the water edge in an unknown manner. In Phase IIIb (see below) a bulkhead was constructed in such a way that it partially destroyed the bulkhead of the original wharf. The wharf would have extended the land into Mill Pond at least 18 ft. (5.5 m.). Whether this was far enough out into the pond to allow access for ships or if a dock or pier feature extended further out into the pond could not be determined by the excavations. If the water was maintained at a constant level throughout the eighteenth century, then the depth of the pond in front of the wharf could not have been more than 2-3 ft. (60-90 cm.) in front of the wharf.

The final modification to the property's waterfront was the construction of a bulkhead that ran the length of the property (Figs. V-4, V-17, V-18, and V-19). In ca. 1795 (Phase IIIb) the waterfront edge of lot 21 was modified by the construction of a bulkhead. Associated with the bulkhead were a wooden pier that extended out into Mill Pond and a wooden platform that capped the landward side of the bulkhead. This bulkhead may be represented on the 1814 Hales map (Figure V-22). The bulkhead at the Mill Pond site was constructed from square-trimmed timbers stacked parallel to the shoreline, in two parallel rows, and then joined together with wooden cross-pieces. The cavity created within the structure was filled by both intentional fill and sediments from the Mill Pond. The bulkhead rested directly on the Mill Pond bottom and was five timbers high or approximately 4.5 ft. (1.4 m.) above the Mill Pond bottom (Figs. V-17, V-19, and V-24). No evidence of tie-backs was found. The exterior water-facing timbers of the bulkhead ran the length of the portion of the bulkhead that was exposed during the excavations. The exposed bulkhead timbers must have extended across the property, but no evidence for additional timbers was encountered. The lowest timbers appear to have been simply stacked rather than joined. The timbers that formed the interior of the bulkhead were similarly stacked. The cross-section through the bulkhead (Fig. V-17) indicates that at some point the bulkhead slumped because most of the timbers were not fastened together. The slump appears to extend the length of the exposed portion of the bulkhead. It is not clear when this slump occurred. The absence of disturbed natural sediments within the bulkhead suggests that the bulkhead slumped during or just after construction. The slumping of bulkhead walls must have been a common problem and has been recorded at least one other site, Cheapside wharf, Baltimore, Maryland (Norman 1987:71-77, [Fig. 17]).

The only evidence for cross-pieces joining the interior and exterior timbers was at the top of the bulkhead and at one location where lower timbers appear to have been joined. The topmost horizontal timbers of each stack were fastened to one another by crosspieces. The uppermost timbers were attached to the crosspieces by wooden pegs. Only one crosspiece was found to join lower timbers. The bottom timber was notched, the crosspiece set in the

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notch, and then the next timber was placed on top of it. It is not known whether this joint was pegged. The crosspieces created a cavity between the top timbers and the timbers directly beneath them. The archaeology indicates that the top of the bulkhead was covered with a wooden platform (Phase IIIa) and presumably this platform would have rested upon the topmost bulkhead timbers.

c. Comparative Summary

Data-recovery investigations at the Mill Pond site encountered two waterfront features that can be compared to the waterfront features excavated at several other archaeological sites in Boston and vicinity, as well as the eastern seaboard. It is clear that the construction methods and, to an extent, the form of the Phase IIa wharf, constructed ca. 1707-1709, vary considerably from wharf features encountered at other archaeological sites. The Mill Pond wharf was not massive, the timbers and the fill on top of the wharf indicating that the original wharf, when first constructed, was only ca. 3 ft. (1 m.) thick. In general, the wharves encountered at other sites were more massive. However, since the water at the rear of lot 21 was not deep and the shoreline was sheltered, the place was not subjected to severe wave action. Therefore, the wharf did not have to be constructed by methods that would have counteracted the mass needed if constructed in deep water, nor did it have to include architectural elements (tie-backs) that would have secured the wharf to the shore.

Comparison to other archaeological wharf sites in the Boston vicinity highlights the differences exhibited by the Mill Pond wharf. All the other Boston vicinity wharves excavated were crib-type wharves with fill varying from fine sediments (solid fill) to cobbles. At the Mill Pond site no evidence of cribbing was found. Furthermore, these wharves appear to have been much more massive than the Mill Pond wharf. Long Wharf, Oliver's Dock, Scottow's Dock and the Charlestown Town Dock were all larger in terms of depth from wharf surface to harbor bottom. The location of these wharves along deeper bodies of water meant that they had to be more massive. Also, these wharves served the commercial activities of a large population, unlike Mill Pond wharf which was private and functioned to serve the commercial and household activities of the occupants of the property. The other wharves would have been accessed by a variety of vessels including oceangoing ships; the Mill Pond wharf would have been able to accommodate shallow draft boats only. The difference in orientation between the larger wharves, which were geared toward maritime commerce, and the Mill Pond wharf which probably functioned on only a limited local level, may explain the differences between this wharf and the other wharves. The builders of the Mill Pond wharf may have constructed a structure that required the minimum in terms of effort and monetary investment but that would serve their perceived needs. In Section V it was suggested that the Mill Pond wharf may have been constructed as an inducement for sale of the property or as a means by which the owners of lot 21 could have avoided wharf fees at the larger wharves.

Two wharf sites outside the Boston vicinity but contemporary to the Mill Pond site have been excavated: the Barclay's Bank site (Morin 1991) and the Follett site (Heintzelman 1985). Both were cobb wharves, which had few similarities with the Mill Pond wharf but were similar to each other and to the earlier Scottow's dock. This suggests that regional similarities in wharf construction methods did exist during the Colonial period but that the Mill Pond wharf did not follow these. The Mill Pond wharf was a local expression of wharf building that did not adhere to the vernacular traditions of wharf building that had developed in medieval England.

Construction methods employed at the Mill Pond site most resemble those of the grillage/raft type. The timbers at the Mill Pond site were intended to create a stable base, in the same way as the grillage/raft wharves encountered in

New York City and in fact all wharf structures (cribs). However, there the similarities end. The grillage/raft wharf identified at the 175 Water Street site was constructed of a series of timber rafts, weighted down by stone and was thus quite massive. The timbers, although fasteners were not used, were notched, butted into one another, and at least ten layers thick (Geismar 1983:203 and 691). The timber element of the Mill Pond wharf was four log courses thick, however the two bottommost and the topmost layers contained few logs and the spacing between the Mill Pond wharf logs was not tight, so that gaps were present between logs. The Mill Pond wharf timbers were simply stacked on top of or next to one another and not formally joined in any way. Finally, the Mill Pond wharf was unlike grillage/raft wharves because there was no indication that the wharf was floated into position and then sunk. The spacing between the wharf timbers indicates that fill could not have been placed on the timber surface in order to sink it, since the fill would have fallen through.

The construction methods employed at the other wharf sites would have required that individuals involved in the construction have a degree of knowledge about wharf structures, as well as carpentry. On the other hand, the skill level needed to construct the early wharf at Mill Pond was not great. The simplicity of the design cannot be understated. Elsewhere, the archaeological excavation of wharves has led researchers to conclude that wharf construction followed set patterns established as early as the Middle Ages (Gallagher [1991]:18-51 and 137; Roberts 1989:133). The wharf builders in Boston, Charlestown, and other eastern-seaboard cities followed these patterns. Either the Mill Pond wharf was not constructed using the generalized pattern of wharf construction because of lot 21's natural setting or the wharf's builders had no knowledge of wharf-building tradition.

On the other hand, construction of the Mill Pond's ca. 1795 bulkhead appears to have followed construction methods like those used for bulkhead construction at other eastern-seaboard sites (Norman 1987; Gallagher [1991]; Engineering Science 1993). The primary difference between the Mill Pond bulkhead and those identified at other sites was the scale. The height of the Mill Pond bulkhead was less than that of other bulkheads. Although the joinery used between the wharf sites may have been different, the basic configurations of the bulkheads were the same. The Mill Pond bulkhead displayed two joinery methods; both methods related to locations where cross-ties were installed. In one method, timbers were joined by a wooden peg; in the other, a horizontal bulkhead timber was notched, allowing the cross-tie to be fitted flush with the top of the horizontal timber (Fig. V-19). It is not clear whether any additional fastening (such as a peg) held the latter joint together.

By the late eighteenth century, wharf construction may have become a specialized trade. It has been suggested that the demand for wharves and the standardization of civil engineering in the United States may factor into why similarities exist between wharves dating to this time (Engineering Science 1993:322-323). In Baltimore, Maryland, during the late eighteenth and early nineteenth centuries, more construction specifications were being required (Norman 1987:103-104). This suggests that wharf construction had become more specialized and civil engineering more standardized.

3. Summary

Data-recovery investigations at the Mill Pond site resulted in the examination of two waterfront features (Phase IIa wharf and Phase IIIb bulkhead) dating to the Colonial period. Placed within a local context, these features belong to a process of waterfront development occurring concurrently with the urbanization of Boston. Several waterfront sites related to the wharfing out of Boston harbor during the seventeenth and eighteenth centuries occur in the vicinity of the site. These include the Bostonian Hotel site, Long Wharf, and the Charlestown Town Dock

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wharves/dry dock site. It is probable that as population increased and the maritime economy evolved, locations away from the main wharves, such as lot 21's waterfront, would have been integrated into the maritime economy.

The wharf at the Mill Pond site does not conform to the patterns of wharf-construction methods found at other seventeenth- and eighteenth-century wharf sites. Rather, the Mill Pond wharf is a local expression of wharf building tradition that did not adhere to the vernacular wharf building of medieval England. It is probable that the variation in construction methods was a result of the natural setting, builders unfamiliar with wharf construction, or a combination of the above. It is not clear why the wealthy merchants who comprised the SPGI did not hire the appropriately skilled workers to construct the wharf.

Unlike the earlier wharf, the ca. 1795 bulkhead is similar in form and construction methods to several other wharf sites with bulkheads. By the beginning of the nineteenth century, wharf construction may have become more specialized and civil engineering more standardized in the United States. The methods used to construct the Mill Pond bulkhead suggest that these processes were occurring on a pan-regional level rather than at a local level. Alternatively, the increased specialization and standardization may merely have been the formalization of the previously unstated vernacular tradition.

Finally, the early wharf at the Mill Pond site represents an undertaking different from those at other sites. The natural setting at the rear of lot 21 was different than the settings for the wharves built into or along river channels and harbors. Although Scottow's dock was similarly constructed off the main waterfront, unlike that at the Mill Pond site, the dock was accessible to larger vessels. Wharves needed to address the local characteristics of the natural setting, and the Mill Pond wharf may be just a manifestation of this. However, the similarities displayed between the ca. 1795 bulkhead and other bulkheads suggest otherwise. The early wharf at the Mill Pond site was probably constructed by individuals who did not have knowledge of the long tradition of wharf construction.

C. Waterfront Development of the Mill Pond Area

1. Social and Economic Context

Much of the social and economic context of the Mill Pond Area has been discussed in section IV, the historical research results section. A brief summary follows which includes a discussion of the development of the neighborhood.

During the Plantation Period, the property was one of a number of similar properties on relatively large lots on the edge of the water. At end of the Plantation and the beginning of the Colonial Period the property was subdivided into two lots, lot 21, and the land between lot 21 and Cross Street. The land between lot 21 and Cross Street was subdivided into four smaller lots at least by the 1730s (Seasholes [1989]:lots 1517-1520) and remained in those parcels until the Mill Pond was filled. The land to the south of lot 21, between it and Mill Creek, was subdivided once during the Plantation Period when Thomas Stevens, a baker, deeded a portion of the land, designated lot 22 by Clough, to an African American woman, Zipporah Potter, in 1670. The rest of this land was maintained as one parcel until the early 1700s when it was subdivided into two lots, Clough's lots 23 and 24, remaining as two lots until the early 1800s. Thus, the major subdivision of the lots occurred in the first three decades of the eighteenth century. Like many other aspects of Boston economy, land subdivision in this area remained stagnant until after the Revolutionary War.

The early 1700s were a period of relative prosperity for Boston and the construction of the wharf can be seen in the context of a number of other public improvement and private ventures of the period. These include the construction of the lighthouse, widening the road on the neck and construction of houses there, and the initiation of Long Wharf in 1711 (Warden 1970:68-69). The construction of the wharf and of a rental house on the property at this time may be a reflection of the public perception of this prosperity. Furthermore, the burgeoning population of Boston made vacant land more valuable. The archaeological research was not able to find the edge of the wharf but no historical documents other than land transfer records for lot 21 referred to the wharf. It is assumed that the wharf was built privately by the SPGI rather than as part of a public project or joint venture.

The property itself was obviously not considered prime residential land for the elite in the early Colonial Period, since it was bought by SPGI and converted to rental properties. Perhaps this was because the lot was not immediately adjacent to the main source of commercial activity on the other side of the Shawmut peninsula, nor to the center of public life around the Town Dock. However, the larger lot made it suitable for artisans who typically had their workshops in either their houses or their yards. It may have also provided a source of additional income from the use of the stable as a commercial enterprise. However, there is no evidence that the stable was other than a private facility until after the Revolution. The lot became a family estate of moderately wealthy artisans and merchants.

Boston underwent a series of economic fluctuations and crises during the period between 1715 and the Revolution and may not have recovered from the loss of population during the 1720 smallpox epidemic until the next century (Warden 1970:18). Economic indicators from the 1720 to 1740 period suggest that some sectors of the economy were doing well while others, especially those relating to the standard of living of those on the lower end of the economic scale, were not (Nash 1979:70-71). Some of these trends, together with Boston's deteriorating position in the carrying and West Indian trade, disruption by frequent wars, and the marginal productivity of its hinterland, led to a gradual decline and stagnation after 1740 (Nash 1979:71-73, 108, 155).

Construction activity on the lot and possibly on the block as a whole remained relatively quiet. Maycock did report an improvement to his property, the area where he stored wood (Suffolk Registry of Probate 14927), but the updates of the Bonner map do not show any construction of new dwellings.

The economic climate improved with the close of the Revolution and it may have been in this period of relative prosperity that the wharf was reconstituted and a new bulkhead was built. However, although it was built with methods similar to those used on larger wharfs, it still did not represent the same investment as wharfs meant to support seafaring trade. It was neither as massive as other wharves nor was it constructed of squared and fitted logs. This may have been due to the location of the wharf on the edge of a low-energy body of water, which obviously required a lesser investment than other, larger wharves.

The movement to fill in the land occurred at the turn of the century and was finally achieved through agreement between the Mill Pond Corporation and the city in 1807. Filling of Mill Pond was partially a result of the need for land for the growing Boston population but also was a result of the generalized demand for internal improvements. Various "innovative and reliable sources of borrowed capital," in the form of securities in public works, banks, and eventually in manufacturing associations, were stimulated by the demand for money to finance internal improvements and commercial development (Rothenberg 1988:135-137). Such projects included two bridges over

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the Charles River, one replacing the ferry, in 1786, and the other the West Boston Bridge, in 1793 (Whitehill 1968:49, 52).

The filling of Mill Pond and the creation of more land west of lot 21 changed its potential for development. Part of the lot was subdivided and remained residential. The remainder was converted completely to a stable that served the increasingly commercial environment.

In a broader view, it is quite clear that Boston was not dependent on the docks and wharfs of the Mill Pond to support its role as the leading port in the Colonies in the early part of the eighteenth century. One need only compare the number of wharfs in the Town Cove on Bonner's 1722 map with the difficulty of identifying any definite wharfs on Mill Pond (Fig. IV-6). The difference in scale between Long Wharf and the wharf at the Mill Pond Site, built within three years of each other, is striking, as to both the size and the technology necessary to build the Long Wharf (although the actual archaeological information on Long Wharf's construction is minimal). The later bulkhead and pier are not much of an improvement.

The nature of use of the Mill Pond for commercial shipping during the Plantation and Colonial Periods remains unclear. Depositions by individuals who worked on Mill Pond during and after the Revolution suggest that only shallow-draft boats or rafts could navigate the pond at that time (see section IV.B). However, no other documentary information was gathered which threw light on this issue. Information from the pollen analysis confirmed that the wharf area was used as a stable (see Appendix D). Fodder could have been brought to the stable by shallow-draft boats. Cereal pollen in water-deposited layers in the bulkhead suggested that horse fodder either passed over the wharf or that debris from the stalls was thrown out on the edge of the pond. The presence of cereal and maize pollen in the sediments under the original wharf suggests that the area may have been used to move foodstuffs or fodder before the wharf was constructed. On the other hand this pollen could have washed in from the mill on Mill Creek.

After the Revolution, there was apparently some belief that the wharf could be used for commercial activity, possibly associated with Vose's business as truckman. At this time, the wharf was refurbished and a pier constructed. It continued to be used as an in-town family estate until Vose died in 1823. Vose also had an estate in Dorchester and apparently, like many wealthy people of the time, split his residency between the country and the city. Given the reported stagnant condition of Mill Pond in the late 1700s, he may have spent the winters in the city and the summers in Dorchester.

In summary, there was relatively little change in the use of the lot over time and relatively little change in the use of the block on which it was situated until after Mill Pond was filled. The Plantation Period estates lasted until the late seventeenth century, when the lot 21 became a rental property. After 1710, it became a family estate that remained as such with some improvements such as the bulkhead and pier, for approximately a hundred years. The filling of the Mill Pond created a different situation and the lot and block became part of a commercial and industrial portion of the city of Boston.

2. The Neighborhood

Part of the social context of the Mill Pond area is the neighborhood, the kind of people that lived there. Boston, like all Colonial cities, has been considered distinctive from later industrial cities. Several urban scholars, represented by Warner (1968, 1972), have suggested that the early Colonial cities were not segregated by function, class, and occupation as were later cities. However, there is evidence from Philadelphia and New York that segregation by

occupation category did occur at least by the end of the Colonial Period, the first period for which adequate records exist to examine this question.

Current historic research indicates that there is no doubt that individuals of different social status lived near each other but some degree of segregation occurred as well. The data from Philadelphia come primarily from the post-Revolutionary period and are based on the 1798 Federal Direct Tax records. Both the occupations and the housing, defined in terms of square feet of floor space, reveal a concentric model of city structure similar to that of the preindustrial city defined by Sjoberg (1960). Following modern usage, Blumin calls these the core, semiperiphery, and periphery (Blumin 1989:46-49). The urban elite is concentrated in the core with the larger houses; lower-status individuals with nonmanual jobs and artisans (what came to be a major part of the middle class) are concentrated in a ring outside the elite in the semiperiphery in moderate-sized houses, and the low-status manual workers are concentrated in the periphery in the smallest houses. Housing size is also correlated with location as well as status, so that manual workers in the core have larger houses than those in the semiperiphery and those in the semiperiphery have larger houses than those in the periphery on average. The same is true of the other occupation classes (Blumin 1989:Table 2.3).

Rothschild (1990:21) has reviewed research on the degree of residential segregation in New York in 1730 (Wilkenfeld 1976); 1760 to 1775 (Abbott 1974), and 1790 to 1840 (Blackmar 1979). These authors report some degree of residential segregation during these times with some degree of segregation by religious and ethnic clustering of occupants in the 1730 period, as was confirmed to some extent by Rothschild's historic map analysis (1990:83-103). However, by 1789 the Dutch were dispersed within the larger English population. Rothschild also found that the residential clustering by occupation was clearest for occupation groups at either end of the economic spectrum, for example, merchants and laborers (1990:130). However, there were some clusters by occupations in 1703 with several types of artisans concentrated in one or another ward. This process was more advanced by 1789, but the segregation seems to have been primarily on the level of the street or sections of a street rather than entire wards (1990:126).

The neighborhood reconstruction of the project area was limited by the kinds of documents available. There were no useful documents throughout much of the eighteenth century and the more detailed data from the late eighteenth century was excluded from the historical analysis since the major period of significance of the site was thought to be the early Colonial Period. When it was discovered that it might be useful in interpreting the context of the reconstruction of the wharf in 1795, it was too late to reinstate that line of research. Therefore, the information on the composition of the neighborhood was restricted to that available from land-transfer records.

A table was prepared from the names of the owners of the properties on the east and west sides of Salem/Back Street for three 50-year periods from 1650 to 1800 (Table IX-1). These data were taken primarily from earlier phases of the project (Seasholes [1989]). Individuals who are known to have had more than one occupation title are listed with their occupations separated by a slash. Individuals who appeared in several transactions were counted only once in each 50-year period. It is likely that some of these people did not actually live in these locations. However, most of the owners on the west side of the street did live on their properties. Exceptions during 1650 and 1750 are the SPGI and Rawson for lot 21, while from 1750 to 1800 Bulfinch owned lot 21 to the south of lot 22 but lived elsewhere. It seems probable that a majority of the owners actually lived on the east side of Salem/Back Streets also.

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Although this information has inherent limitations, in all periods craftsmen not related to marine activities were found to be in the majority. Mariners were found in all periods and were numerically most common between 1650 and 1700. Merchants were most common between 1750 and 1800. The occupations of any tenants were not researched. The correspondence of owner and occupants on the west side of the street is fairly secure. Assuming the same is true for the east side of the street, the information on the neighborhood does not seem to be comparable to the portion of the Charlestown waterfront that has been investigated (Pendery 1987).

In the archaeological excavations at Charlestown, two archaeological districts, Maudlin Street and Wapping Street, both adjacent to the Charlestown waterfront, were excavated. The occupants of these two districts, while including some craftsmen, were primarily in maritime-related occupations such as shipwrights, sailmakers, merchants, or sea captains (Pendery 1987:116, 119). The residents in the neighborhood of lot 21 were characterized instead primarily as artisans, numbering 46 to 54% of the landowners. The implication of this minimal information on the characteristics of the neighborhood is that the block that included the site was not in an area of the city devoted to marine commercial activities, which of course supplements the results of the observations on the historic maps.

Table IX-1. List of occupations of property owners on the east and west sides of Salem/Back Street from 1650 to 1800.

Dates	West Side of Salem/Back Street	East Side of Salem/Back Street
1650-1700	Mariner; shopkeeper; yeoman/planter/husbandman; weaver; baker	Mariner (3); gunsmith; carpenter; tailor; cordwainer
1700-1750	Mariner (2); merchant; shopkeeper; brazier (2); housewright (3); weaver	Ropemaker; mariner; merchant (2); trader; schoolmaster; goldsmith; brazier; distiller; glazier; mason; sawyer; periwig maker
1750-1800	Mariner; merchant; truckman (3); trader/truckman/gentleman; trader; shopkeeper; clockmaker; housewright (3); bricklayer; blacksmith; tailor (2)	Trader; English goods; shipwright; physician (2); tailor (2); housewright; bookbinder; constable; heel_r (?)

D. Analysis of Landfill Deposits

Evidence from landfill sites in Boston and other cities suggests that the composition of landfill can vary considerably from one component of the fill to another. Studies of soil chemistry at the Bostonian Hotel Site (Scottow's Dock) demonstrated this quite strikingly (Bradley et al. 1983). In addition, the artifact composition of the excavation units and strata at Faneuil Hall (Alterman and Affleck 1994) and MP01 (Elia et al. 1989) exhibited major differences from one to the other. Alterman and Affleck (1994:Figs. XI.1-4) illustrate that both the frequency and the density of different artifact material classes also vary widely from one landfill site to another.

The composition of landfill considered as a mega-artifact (Sapan 1985:170) can be taken to reflect the activities of the city as a site. If one assumes that fill was not transported far, then the artifacts should also reflect neighborhood activities. For example at Faneuil Hall, sugar molds and syrup jars (refuse from sugar making) were found in the fill. Such artifacts have not been recognized elsewhere in Boston and sugar houses were typically located close to the wharfs where the sugar was unloaded (Alterman and Affleck 1994:VI-37; XI-13). This may well be the case for

early made-land projects. However, as larger nineteenth-century landfill projects, like the filling of Mill Pond, were implemented, fill had to be brought from farther away.

The contents of the landfill may be viewed as reflecting the city as a site, as a "neighborhood midden" (Alterman and Affleck 1994:XI-13). In these terms, the deposit should reflect not only the general temporal trends discussed above for the Mill Pond deposits, but also aspects of city lifeways and processes including specialization and segregation of activities. This may be represented by the appearance of different by-products of industrial activity used as landfill.

One such urban process was studied in New York. The contents of the fill were examined for how they reflected the implementation and adherence to new health rules. It was noted that most fill in the eighteenth century had a high component of organic material which created noxious smells as it decayed during the multiyear process of landfilling. New health regulations in the early nineteenth century prohibited the use of such organics for fill. The archaeological indications were that initially there may have been at least some adherence to the rule but it became less over time (Geismar 1987).

This issue cannot be directly addressed in Boston since there are only two landfill studies that quantify the amount of organic material in the form of bone and leather scraps: the Mill Pond site and the Faneuil Hall site (Alterman and Affleck 1994). The landfill deposits that were specially intended to create land at the Mill Pond site came from analytical units in Phases IIa and IV. The stratigraphic units in Phases II, II/III, IIIa, IIIb, and III are considered leveling, construction, or landscaping fills. During the Phase II site examination, the fill over the "wharf" was preliminarily identified as originating from the filling of the Mill Pond. However, the data-recovery excavations determined that this material was composed of several strata derived from possible activities on the surface of the landfill and repairs to the wharf edge, as well as deposits of fill for creating the land. None actually derived from the filling of the Mill Pond. Because the Phase II materials were derived from several of the data-recovery analytical units, they are not considered in this discussion of the composition of the landfill. On the other hand, Mill Pond fill was found in trenches A and B in study block MP01 during the Phase II archaeological investigations (Elia et al. 1989:12-18).

The best comparative material on landfill in Boston comes from the excavations at Faneuil Hall (Alterman and Affleck 1994), a National Park Service-sponsored excavation that had similar goals and methods to those used in the current project. The Faneuil Hall project was designed like a data-recovery investigation rather than an evaluation or a salvage operation, such as characterized the majority of the other landfill excavations in Boston.

Other landfill deposits have been identified at Round Pond (Beaudry and Blosser 1981), 75 State Street (Roberts 1989), Scottow's Dock (Bradley et al. 1983), and Long Wharf (Bower et al. 1984). Because of the limited work done at these sites, the comparable data are restricted to some deposits from the Scottow's Dock site and Long Wharf. Although the data were not analyzed into South groups, it is possible at least partially to construct a South functional profile for these two sites. At Long Wharf, the artifacts were recovered from Trench 1, which probably dates to the 1763 expansion of the wharf (Bower et al. 1983:42; Appendix II). The material from Scottow's Dock came from several trenches (A, A', C, and K) that intersected the same deposit dating to the second and possibly third decades of the eighteenth century (Bradley et al. 1983:7-13; 21-23; 41-44; Appendix B). However, the Scottow's Dock report did not include a catalogue, wherefore counts on the number of leather items (including shoes) were missing. Since both leather scraps and shoes were mentioned, plus signs (+) were inserted in the table

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where actual counts were unavailable. In addition, the absence of the rarer artifact categories from all of the minimally excavated sites (Scottow's Dock, Long Wharf, and MP01) suggests that the samples were not large enough to provide the full range of artifacts in these fill deposits. Although this biases the analysis, the groups recovered (kitchen, architecture, tobacco) are the most numerous and the absence of the less numerous artifacts would not affect the percentages of the larger groups in any major way. The only artifact group that would affect the analysis if it were not counted is the activity group that includes leather scrap. If leather scrap was common and uncounted, it would affect the percentages, as is evident in the Faneuil Hall figures (Table IX-2).

Table IX-2. Percentages of South functional groups in fill deposits, Mill Pond.

	Mill Pond IIa	Faneuil Hall	Scottow's Dock*	Long Wharf	Mill Pond IV	MP01
Architecture	27.2	11.7	3.8	22.5	11.75	16.1
Clothing	0.7	2.4	++	--	3.8	2.7
Kitchen	45.2	36.9	66.7	38.8	73.2	63.8
Furniture	--	--	--	--	--	--
Personal	.10	.8	--	--	1.1	--
Arms	.10	.3	--	--	--	--
Tobacco	25.6	16.7	29.5	36.7	6.2	1.56
Activities	1.1	37.2	++	2.0	4.0	0.4
N	1,015	14,255	237+	49	200	1,609

*Incomplete artifact counts

The functional classification (Table IX-2) illustrates that several temporal trends defined on the basis of the Mill Pond site deposits and other comparative material are seen here as well. The kitchen group percentages are in the 30s to 50s early and in the 60s to 80s later in the eighteenth century. The kitchen group percentages at Scottow's Dock and Long Wharf are respectively higher and lower than the general trend; this may be the result of the variations in the tobacco and activities group. The kitchen frequency of Faneuil Hall is at the limit of the lower end of the early range of dates as a result of the large number of leather scraps. The tobacco group is high in the three early deposits and even higher in the Long Wharf deposit from the 1760s and low and in keeping with the Mill Pond data in the MP01 deposit. This seems rather late for such large numbers of pipestems and is perhaps a function of the small sample size (N=49).

The architectural artifact component of these fills is generally below the Mill Pond percentages for non-landfill deposits. This may suggest that fill was seldom composed of construction debris. Since the South classification as used herein excludes common masonry elements such as a brick and mortar, this observation is restricted to nails and glass, which seem to be discarded more frequently in yard deposits than in fill. An exception to this generalization may have occurred when buildings were being torn down and dumped as a result of major rebuilding episodes such as after one of Boston's fires. At Scottow's Dock, evidence of burned planks is attributed to a 1679 fire (Bradley et al. 1983:25).

Other common components of landfill sites are bone, leather, and wood chips. Shoes and, especially, leather scrap are a common component of the fill on the Town Dock side of the Shawmut peninsula, particularly in the second quarter of the eighteenth century as indicated by the Faneuil Hall and Scottow's Dock deposits (see tables IX-2 and 3). While some leather scraps are mentioned for the first quarter of the century at Scottow's Dock, it seems as if they were not as abundant (Bradley et al. 1983:15-17, 27). It is also found in a late eighteenth-century deposit (Profile F, level 3) (Bradley et al. 1983:33). A middle nineteenth-century deposit at Long Wharf is also relatively low in leather. On the other hand, leather, whether in shoes or as scrap, is rare in the early landfill at Mill Pond Wharf. It is more common in Phase IV and in the MP01 deposits but is three to five times less common than at Faneuil Hall (Table IX-3). (The percentages of leather items at Faneuil Hall in Table IX-3 are taken from the percentage of the activities group, which is usually 90% leather scraps [Alterman and Affleck 1994:XI-7]. The number of non-leather items in the activity class is small in relation to the total artifacts, but not calculable from the data available. Thus, if removed, it would have little effect on the overall percentage of the activity group.)

Table IX-3. Percentages of organic material in Boston landfill sites.

	Phase IIa	Faneuil Hall	Long Wharf	Phase IV	MP01
Bone	38.1	36.5	9.3	18.1	18.5
Leather	0.2	18.5	1.9	5.6	3.0
N	1,639*	22,461	54	1,964*	959

*excludes shell

There are several possible causes for the differences between the Town Dock and Mill Pond sites and between the early and the later sites. Preservation may be a factor, but does not seem to be a major one. While the deposits in the Town Dock area were in moist soils, and the Mill Pond site soils were less moist, preservation in Mill Pond was still good. The highest numbers of leather items came from IIIa and IV which were drier than the IIa deposits. Furthermore, the MP01 deposits were in a moist matrix but only 3% of the artifacts were leather.

A more likely explanation for the lack of numerous leather artifacts in the later deposits at Long Wharf and the two Mill Pond deposits is either the removal of tanneries to locations outside the city or the decline in the shoemaking industry or both. Tanneries, like slaughterhouses, were considered noxious or dangerous and statutes were enacted by the Commonwealth of Massachusetts in the late nineteenth and early nineteenth centuries regulating their location (Handlin and Handlin 1969:204). But concern about these industries occurred earlier in the Colonial Period as well. In the 1720s the city of Philadelphia petitioned the Pennsylvania Assembly to remove slaughterhouses, tan pits, and lime pits on and adjacent to the public dock. In defending themselves the tanners noted that placing tanyards outside the city had precedents in London and New York, although they argued that such a practice would create an inconvenience for the public. Eventually, the tanners won the dispute, but for how long is unknown (Bridenbaugh 1960:399). Furthermore, by the second quarter of the 1700s, Massachusetts' tanneries were concentrated at the cattle markets in Danvers and Roxbury and not in Boston (Russell 1982:64).

On the other hand, the decline in the frequency of leather scraps could be due to the decline in the shoemaking industry in Boston. Boston had been preeminent in the trade in the first half of the eighteenth century, but lost market share to Lynn, Massachusetts, at least for women's shoes, before the Revolution (Bridenbaugh 1950:49, 74).

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Although shoemaking does generate leather scrap, much larger quantities are found associated with tanyards (Cheek et al. 1984:76). If tanneries had been removed from "downtown" Boston by the late nineteenth century, the high frequency of leather scraps in the late eighteenth century deposit from Trench F at Scottow's Dock may be from shoemaker's waste. The lack of such waste in Phase IIa may be because it was further away from the source of industrial activity. The authors of the Faneuil Hall report argue that the deposits there came from neighborhood household and business refuse (Alterman and Affleck 1994:XI-6).

Another organic material common in both landfills and in domestic sites is faunal remains. As discussed above, the frequency of faunal remains in the Mill Pond deposits declines over time. The same seems to be true for the landfill deposits (Table IX-3). The two early deposits are over 30% of the assemblage, the two latest deposits are around 18% and the deposit from the middle of the eighteenth century is half that from the later eighteenth century, again possibly because of the small sample size. On the other hand, since Long Wharf was a major fill project, it may have had a higher percentage of "clean" fill and not been as dependent on refuse generated during daily activities. In general, however, the frequencies of bone do not distinguish the landfill deposits from any of the non-landfill deposits at Mill Pond. It is possible that the general decline in bone may be at least partially due to the removal of slaughterhouses to outside the town and to changes in the provisioning system as discussed below in the section on foodways.

Phase IIa differs from the Faneuil Hall and Scottow's Dock assemblages in another way. It did not have the large quantity of wood chips that were found in these deposits. This material is again a byproduct of industrial activities such as sawing lumber or shipbuilding, which may not have been active in the Mill Pond Site vicinity during the time the wharf was being constructed. Wood chips were largely absent from the later Mill Pond fill deposits also.

While leather-working, either tanning or shoemaking, sugar production, and woodworking did not contribute to the landfill in Mill Pond in the deposits thus far investigated, evidence of other industries was found. The most striking was metal working. Not only did crucibles come from several deposits associated with Maycock, a brazier, but also from the Phase IV Mill Pond landfill. This could imply that metal working was more common on this side of the Shawmut peninsula than around Town Dock. Historical research, starting with newspaper ads, may clarify these issues. The miscellaneous ads reproduced by Dow (1988:121-142) record, however, that two braziers' establishment were located adjacent to the drawbridge across Mill Creek on Anne Street, close to Boston's Town Dock around 1740 (Dow 1988:125-126) and one on Cornhill (away from both shores) between 1730 and 1750 (Dow 1988:126). Since these artisans were in business between the dates of the landfill deposits reviewed, they may not be representative of the distribution of such businesses at the time of the landfills. On the other hand such data should suggest caution in attributing the artifactual composition of landfills to neighboring households and businesses.

E. Summary

The two major improvements to the waterfront of lot 21 occurred in two periods of economic prosperity and growth. Both improvements were small in scale with respect to other contemporary improvements elsewhere in Boston. Furthermore, both improvements used a simpler technology than that applied at the other wharves reviewed. The early wharf was constructed using a simple grillage method with earth on top and a bulkhead (most of which was destroyed during the second improvement episode). The late wharf merely repaired the bulkhead, moving it slightly further out into the pond. The new bulkhead had less well-prepared and less well-fitted logs. Although the form of

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the bulkhead may have been in response to the low-energy water environment of the Mill Pond, it may also be a continuation of the low level of investment in the lot 21 facilities.

The function of the first wharf is still unclear: was it made to create a larger lot or was it made for maritime commerce? If, as seems likely, the wharf was made by SPGI just before the property was sold, it could have been constructed as a lot improvement. The second waterfront improvement, the refurbished bulkhead and the pier, seems to have been constructed with the intent to use it for maritime trade of some kind, probably associated with the business of Vose.

These improvements occurred on a waterfront that was not typical of either the waterfront around Boston's Town Dock or of Charlestown. If the limited data on the occupations of the people that lived in the neighborhood is accepted, there were no clusters of occupations.

The landfill data, however, suggested that metal workers may have been rather common in the neighborhood, since crucibles were found in the Phase IV Mill Pond fill. Such a conclusion, however, must be taken cautiously because larger fill projects such as that at the Mill Pond may have brought material from a variety of places. The earlier landfill and wharf-building projects in the Town Dock area seems to reflect local sources of fill, including leather-working and sugar-making industries.

X. URBAN LIFEWAYS

A. Artifact Groups

The discussion of the artifacts will follow the South functional groupings. Each group will be considered in the order used in the earlier chapters. This order is derived from the alphabetization of the codes used in the computer analysis.

1. Architecture

As discussed in the earlier section, architecture-related artifacts were not very abundant. They included bricks, possible building stone, mortar and plaster, roofing tiles, various-sized nail and spikes, window glass and leads, building hardware, and interior tiles.

Bricks, building stone, and mortar and plaster were sampled in the field. However, they were not particularly common except in the later levels. Roofing material was represented by two kinds of tiles: roofing slates, some of which had nail holes in them, and ceramic roof tiles. Roofing slate was present in all of the occupation deposits. Slate also occurred in Phases IV and VI, but not in VII. Clay roofing tiles, some with nail holes, were also found. They were very similar in appearance to those found and presumably manufactured at the Isaac Parker pottery in Charlestown and verify that ceramic roof tiles were also used in Boston (Scottish Rite Masonic Museum of Our National Heritage 1984:55, no. 140). Their distribution was more restricted than that of the slate. One roofing tile was found in each of the following deposits: Phases IIb, II/III, V and, IV. Isaac Parker lived from 1697 to 1754 and could have made most of the clay roof tiles at Mill Pond. The tile from Phase IIb may have been made before he began manufacturing tiles but others were certainly manufacturing tiles before then, since regulations for tile making in Massachusetts were passed as early as 1629 (L. Watkins 1968:15). Since the clay tiles are rarer than the slate ones, they may not have been as popular.

Hand-wrought nails occurred in the common rose-head form as well as the more specialized L- and T-headed nails used for trim and flooring purposes. Cut nails were first produced around 1790 (Noël Hume 1969:253). These nails have been identified in earlier contexts, including all but Phase I. They are most abundant in Phase II and V. The ones in V could date to after 1790, since the phase continues to about that time. However, they should not occur in Phases IIa, IIb, II, and II/III. There are several alternative explanations for this result: these nails may have been intrusive; they may have been misidentified during cataloguing; or they may indicate that cut nails occurred earlier than commonly thought. It seems most likely that the nail fragments were misidentified, although some could be intrusive.

Wire nails, first manufactured in the last decade of the nineteenth century, also appeared in four phases. As many as 49 wire nails appeared in those proveniences in Phase V that were in contact with twentieth-century disturbances. Three were found in IIb and came from strata adjacent to twentieth-century disturbances. The remaining three, two in Phase VII and one in Phase III, are also adjacent to twentieth-century disturbances.

The other fasteners are primarily spikes. Spikes were relatively abundant and are associated with the timber-framed construction techniques of early buildings. They were between 2.8 and 4.5% in Phases IIa, IIb, II, II/III, IIIa, and V. In the other phases, they are under 1%.

Very few elements of architectural hardware were found. One item was a downspout holder in the fills associated with the drain trenches in Phase VI (Fig. X-1). Other building hardware was concentrated in the Phase V deposits and included a door handle, a lock, a pintle, and a bolt. Two hinges each were found in Phases II and II/III as well one each in Phases III and IV. Hooks were found in Phases I, III, and VI.

Nine lead window comes were found. Seven occurred in Phase II and II/III and one each in Phases V and VI. Window glass ranged from a low of 15% in Phase II/III to highs in the 60% range in Phase IIa and IIb. There are about three times as many window glass fragments in these two phases as in each of the other phases. Since these deposits are those associated with the initial construction of the wharf, perhaps they reflect the fact that these fills were not normal yard surfaces but partially composed of construction debris.

Interior architectural elements were limited to a few delft tiles used for chimneys and walls (Fig. X-2). All phases but I, IIIa and IIIb had such tiles. They were most common (43) in Phase III, which was probably a fill rather than an occupation layer. Phase V had 12 and none of the other phases had more than five.

2. Clothing

Very few clothing items, most of which were parts of shoes, were found. Buttons were rare. Only one button was found in a context that dated before the 1780s, a one-piece cuprous button in Phase IIa (Fig. X-3). In the Early Republic period one (cuprous) button was found in IIIb and three each (all cuprous) in Phases IV and VI. Three clothing buckles were found. The two in Phase II included both a cuprous and a ferrous buckle (Fig. X-4). Another ferrous buckle was found in Phase IIIa.

Sewing was represented by a silver needle from Phase II (Fig. X-5), a cuprous needle from Phase VI, a wrapped-head pin in Phase IV and two different kinds of scissors from Phases I and II (Fig. X-6). One pair looked somewhat like the scissors illustrated by Noël Hume from c. 1740 (1970:268).

Shoe parts were relatively abundant in the Early Republic period deposits. Ten were found in Phase III, four in IIIb and two in Phase VI. However, the most (47) were found in the Mill Pond Fill, Phase IV. Fewer shoe parts were found in the Colonial period phases. Phase IIa had six shoe parts, Phase II had two, and Phase II/III had three. Other leather fragments that were probably shoe parts came from Phases IIb, IIIa, IIIb, and IV.

3. Furniture

No items that were classified as furniture were recovered. The one tack was placed in the architecture group although it could have been an upholstery tack. In addition, what was probably a clock part was put in the personal rather than the furniture group.

4. Kitchen

The kitchen group was the most numerous of the artifact groups, with ceramics the most common class within the group (Table X-1). The main trends in the ceramics were covered in Section VI. Many of the typical late seventeenth and eighteenth century types were present and appeared in the order and percentages that archaeologists have come to expect as typical of this period. Ceramics were identified through comparing the

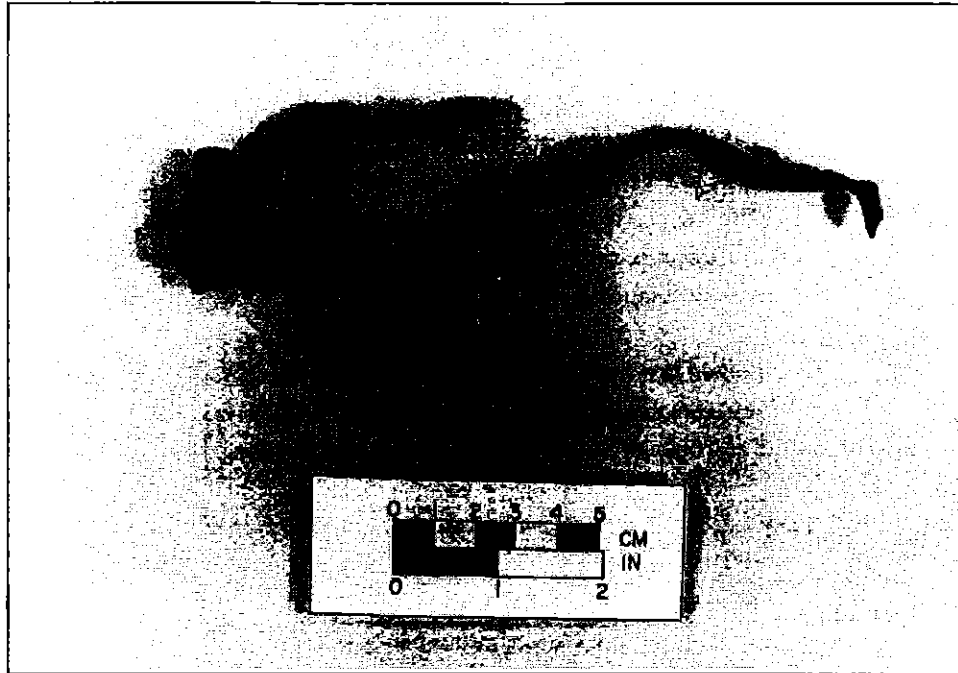


Figure X-1 - Downspout from Phase VI: Pieces mend, 24844 and 24846.

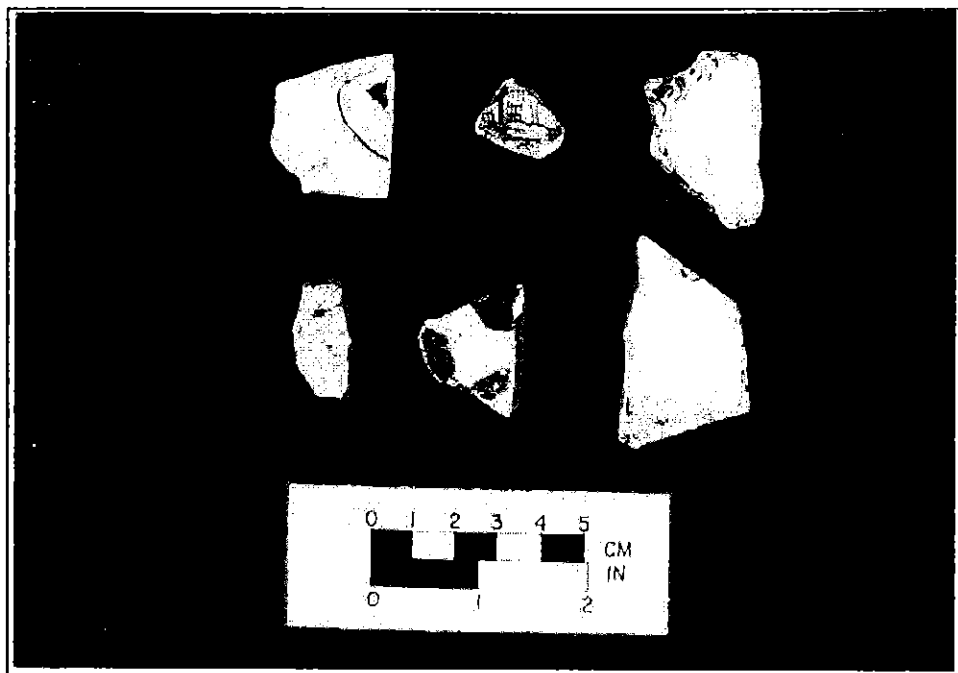


Figure X-2 - Delft tile fragments: Phase VIII, (a) 26700; Phase II, (b) 29766; (c) 30333; Phase II/III, (d) 31204, (e) 31204, (f) 30280.

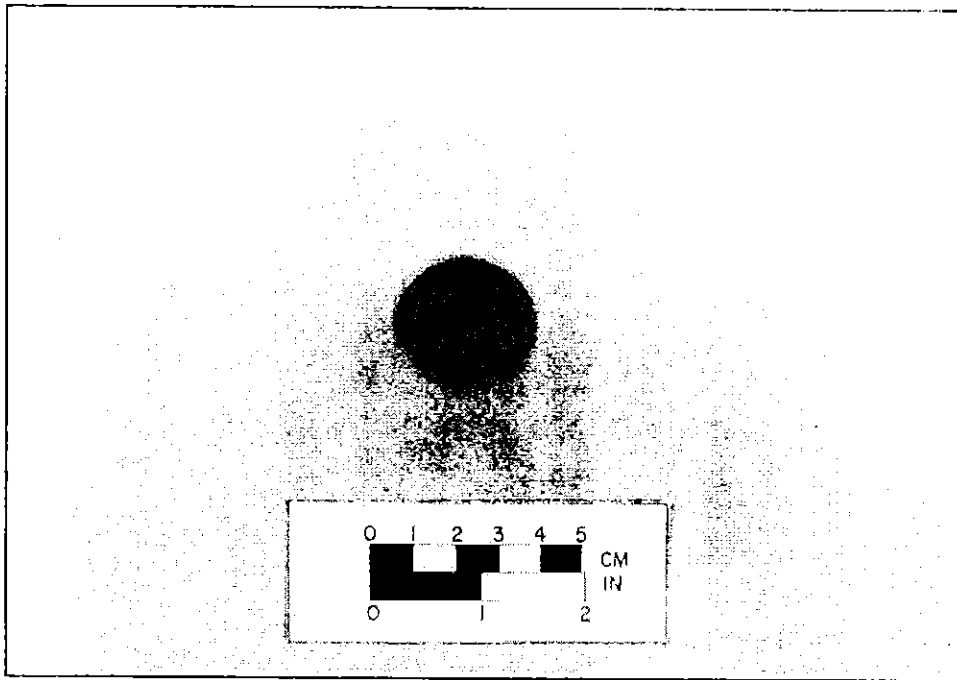


Figure X-3 - One-piece cuprous button from Phase IIa: 25206.

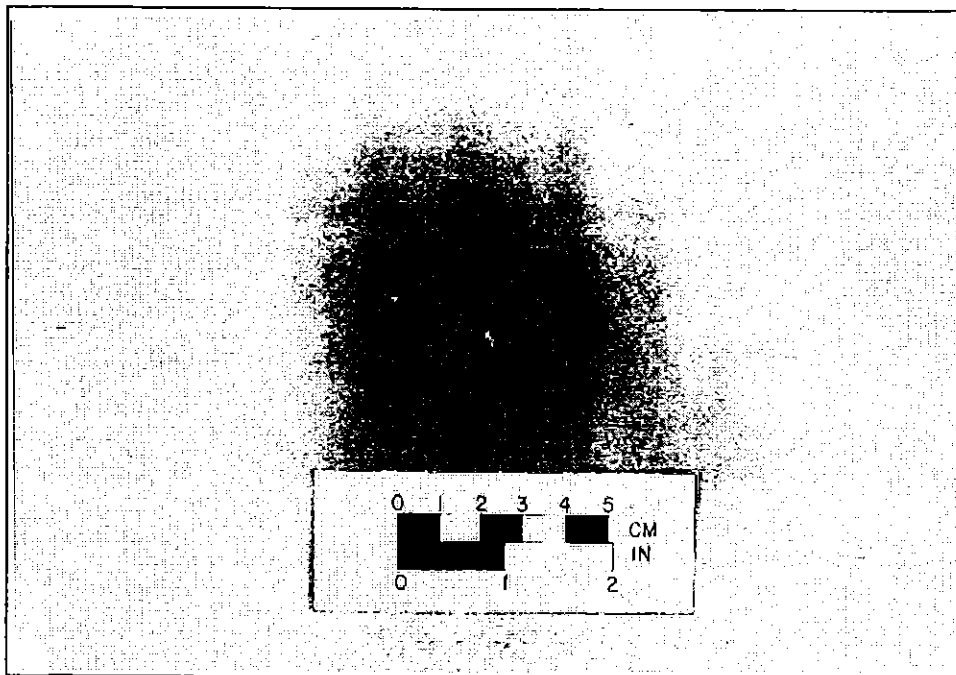


Figure X-4 - Cuprous buckle from Phase II: 24832.

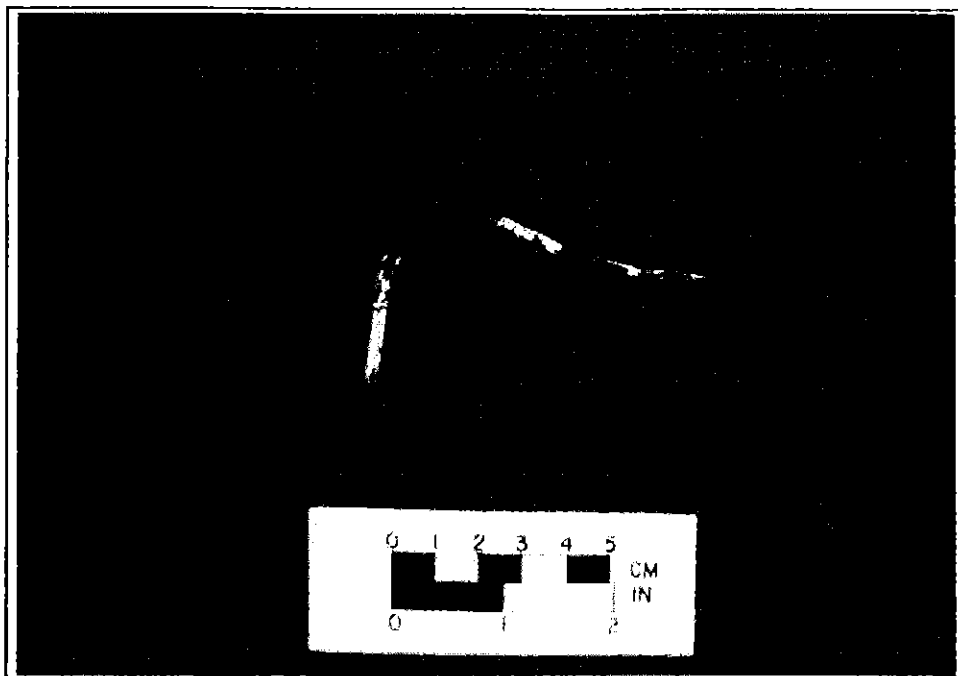


Figure X-5 - Silver needle from Phase II: 24941.

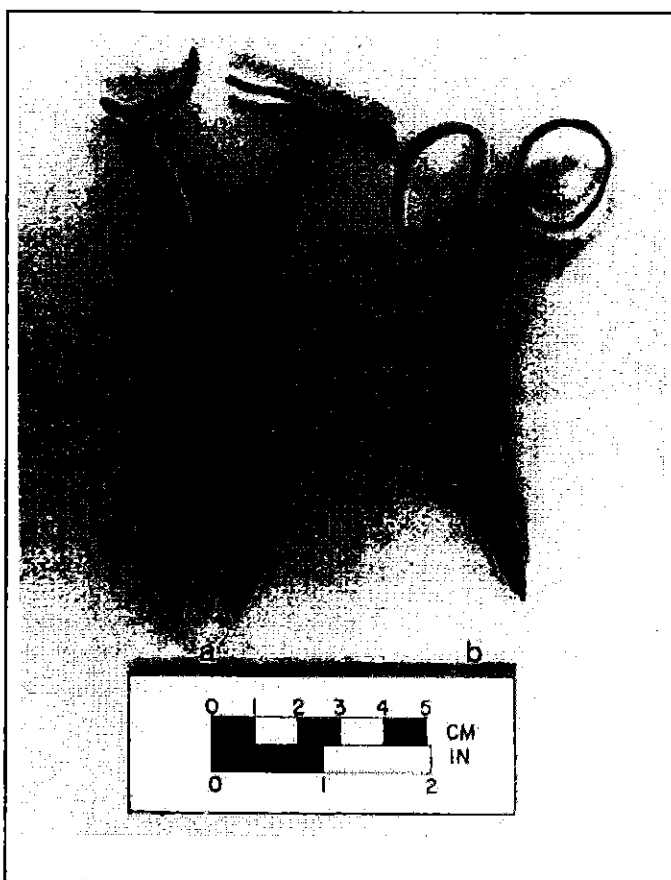


Figure X-6 - Scissors from Phases I and II: Phase I, (a) 24839; Phase II, (b) 24848.

sherds with the descriptions in C. Malcolm Watkins 1960, Godden 1964, Ray 1968, L. Watkins 1968, Noël Hume 1969, Mountford 1971, Garner and Archer 1972, Spargo 1974, Archer and Morgan 1977-79, Gusset 1980, Brown 1982, Oswald 1982, Grant 1983, Magid 1984, Wilcoxon 1987, Mullins 1988, and Zusy 1991. Table X-1 shows the frequencies of the sherds by type for each phase.

Coarse earthenware occurred in a variety of forms as discussed above. Much of the lead-glazed redware was locally made. Decorative varieties included slip-trailed lunettes (Fig. X-7) and other slip decoration (Figs. X-8, X-9; and X-10h). Slip decoration occurred as early as Phase I (Fig. X-10h). Slip-trailed lunettes, which have been found elsewhere in the Boston area (Janowitz 1993: Table VI.1) occurred in Phase Ia (Fig. X-7). Milk pans (Fig. X-10h) and bowls were the only decorated forms found until Phase II, when chamber pots (Fig. X-9a), a pitcher, and a plate were added. Pans and chamber pots (Fig. X-8a,c) were found in Phases V and IV. Decorative techniques included fine slip-trailing (Fig. X-7), broad brush strokes (Fig. X-8), and swirls (Fig. X-9).

However, decorated forms made up a small proportion of the redware collection; plain lead-glazed redware, in a variety of glazes, was far more common. The redware occurred in the following forms: a cup, mugs (Figs. X-10g, X-8e, and X-11d), bottles (Fig. X-12), pitchers (Figs. X-10e and X-11b), bowls (Figs. X-10a,c; and X-13), a dish (Fig. X-14), a plate, the only pipkin (Fig. X-11a, in Phase I), pans, milk pans, and pots/jars (Figs. X-10b,d,f; X-11c; X-15; and X-16). Unglazed redwares occurred also but were made in a restricted range of forms. These included basins, pans, milk pans, and pots/jars. The term pot/jar is used to designate redware or stoneware storage vessels that were taller than they were wide and whose mouth diameters were only slightly constricted, if at all. These vessels were used for souring cream, storing butter or lard, holding vegetables etc. They were usually called pots in the Colonial period and are commonly called jars today.

A very unusual redware sherd was found in the Phase IV deposits. It had a shiny dark brown glaze over grog crumbs creating a textured exterior surface (Fig. X-8d).

One of the rarer types at the site was a green-and-yellow-glazed, white-bodied earthenware appearing only in the first part of the eighteenth century up into Phase II/III. Two forms were identified: a bowl in Phase II/III and the bottom part of a pot/jar in Phase IIa (Fig. X-17). This ware is probably Saintonge ware, a French ware that appears in small quantities in areas visited by Dutch traders (Wilcoxon 1987:77).

North Devon wares were made for serving at the table and for food preparation (Noël Hume 1969:104,133). Both kinds of vessels were recovered from Mill Pond, primarily from Phase I through Phase II, but with some examples in Phases V and IV. The North Devon Sgraffito appeared in mugs (Fig. X-18a), plates (Fig. X-18b), and bowls (Fig. X-18c). The North Devon Gravel Tempered ware appeared in bowls, pots/jars, and pans.

The primary ware for serving and display in the eighteenth century was delft. The primary decorative colors were blue on white (Figs. X-19, X-20, and X-21) although some polychromes also occurred (Figs. X-19b; X-20k, l; and X-21a, f, h). Some polychromes were simply blue and red (Fig. X-20k); and, some had green with red (Fig. X-19b), or green with yellow or brown (Fig. X-21f, h), or black and yellow (Fig. X-18g). The polychromes appeared throughout the sequence, although the largest number of such vessels was identified in Phase V.

Table X-1
Frequencies of ceramic wares by phase.

CERAMIC WARE TYPE	PHASE													
	I	IIa	IIb	II	II/III	V	IIIb	IIIa	III	IV	VI	VII	VIII	X
Buff/White Bodies Course Earthenware														
Green/Yellow Glaze	2	28	1	2	1									
Sub-total	2	28	1	2	1									
Red Bodies Course Earthenware														
Buckley		1	2		1	2				2	1			
Lead Glazed	127	88	93	186	100	230	16	19	23	141	132	9	12	10
Manganese Glazed				3	3	11			8	9	3			1
Missing Glaze	35	3	5	10	3	34	2	2	6	10	69	5		
North Devon Gravel Tempered	8	6	4	9		10			1		2			2
Unglazed	3	6	4	19	39	163		15	13	5	304	1		
Sub-total	173	104	108	227	146	450	18	36	51	167	511	15	12	13
Red Bodied Slipware														
North Devon Refined Slipware	3	2	14	3		2				2	4			3
North Devon Sgraffito	4	5	2	10	2	1					2	1		
Slip-Decorated	2	3	3	21	13	15		1	5	10	14			
Trailed Slip-Decorated	2	7	6	1	1	10				3	1			
Sub-total	11	17	25	35	16	28		1	5	15	21	1		3
Staffordshire Buff bodied														
Combed	10	19	9	18	3	10		1		7	9			3
Dot-Decorated		5	3	7	1	2				3	2			
General	10	5	3	23	11	24	1	1	2	2	14	1	1	
Mottled		15		17	4	11				1	4	1		
Trailed	8	2	2	8	4	8	1	2	6	3				

CERAMIC WARE TYPE	PHASE													
	I	IIa	IIb	II	II/III	V	IIIb	IIIa	III	IV	VI	VII	VIII	X
Sub-total	28	46	17	73	23	55	2	2	4	19	32	2	1	3
Tin-Glazed Earthenware														
"Bleu Persan"		1	1	2							2			
Blue Decorated	18	35	14	40	17	57			10	20	30	2	5	1
Manganese Decorated	2	1	1	5	1	2			2	2	2			
Missing Glaze	4	5	1	13		6			1	5			1	
Plain White	26	60	38	55	26	50			3	26	39	1	3	4
Polychrome Decorated	2	6	5	7		9				2				1
Polychrome										2				
Sub-total	52	108	60	122	44	124			13	51	80	3	9	6
Earthenwares: Other														
Asbury						3							1	
Brownware											3			
Buff Glazed									1					
Course Body									1					
Iberian Storage Jar				1	38	7			9		1			
Jackfield-Type		1		2		3				3		1		
Light green Glaze, Cream Body		1								2	1			
Luster								1	1					
Refined Agate				2	1	1								
Rockingham														2
Whieldon "Cauliflower" Ware										1				
Whieldon Clouded		1	1	5	6	7	2			1	4		2	
Yellowware						1						1		
Yellowware: Mocha											2			

CERAMIC WARE TYPE	PHASE												
	I	IIa	IIb	II	II/III	V	IIIa	III	IV	VI	VII	VIII	X
Other									1	2			
Sub-total		3	1	10	45	22	2	1	8	13	2	5	
Westerwald													
Blue Decorated, incised	1	13	6	28	16	25	2	1	4	7	10	2	
General	1	6	2	13	10	16		2	1	2	4		
Manganese/Blue Decorated	1	2		6		1			1	2			
Sub-total	3	21	8	47	26	42	2	3	5	10	16	2	
Stoneware: Other													
American Gray/Brown, Albany Slip						2	2						
British Brown	1	10	5	11	3	30		1	4	9	8	5	2
British White Slip/Gray Buff Body		1		6	5	10		1	1	9	5		
Brown Salt Glazed: General		1		8	1	7		1		11	17	2	
Burslem			1	2		2							
Deteriorated Bellarmine		3	3	1		1							
Gray Salt Glazed General	2	7	15	11	4	24		5	7	14		1	
Gray Salt Glazed American				1				2	3	2			
Nottingham		2	2	10	11	15	1	1	1	4			
Rhenish Brown	2												
Rhenish General		1	2			4			2	2			
Rhenish Hohr Gray	1					1							
Rhenish Sprig/Comb/Blue/Manganese		5	5	3		2		1	1	3		1	
Other									1	5			
Sub-total	7	30	33	53	24	98	3	4	14	44	60	8	3
White Salt Glazed Stoneware													
General		4	1	28	16	26	1	2	4	14	11	1	

CERAMIC WARE TYPE	PHASE													
	I	IIa	IIb	II	II/III	V	IIIb	IIIa	III	IV	VI	VII	VIII	X
Slip Dip White Salt Glazed	3	1	5	8	21	1	4	6						
Molded				1	4		1							
Scratch Blue					1					2				
Debased Scratch Blue					7			1						
Sub-total	7	2	33	25	59	2	3	9	21	19	1			
Porcelain														
Batavian			1	2	1									
Bone China						1		36						
Canton			1		1									
Chinese Oerglaze Export			3	1	5	1	3	7	4	4	1			
Chinese Undecorated			3	2	6		6	6	8					
Chinese Underglaze Blue			7	10	35	1	1	22	12	35	7	2		
English Soft Paste								1			1			
Sub-total			15	15	49	3	4	29	61	47	12	3		
Pearlware														
Annular			1		3			12	9	2	1			
Blue Hand-Painted		1	3	3	14	3	16	12	54	16	7			
Blue Shell Edge				1	12	2	18	34	48	7	6	1		
Green Shell Edge					12	7	17	21	6	5				
Mocha							3	1			1			
Molded								13	1	3				
Polychrome Hand-Painted			1	1	8	2	18	10	36	9	1	2		
Transfer Print				2	9	6	8	19	19	10	5	1		
Undecorated		1		3	74	4	62	86	112	72	29	8	1	
Sub-total	2		5	10	132	24	142	183	300	129	54	13	1	

CERAMIC WARE TYPE	PHASE													
	I	IIa	IIb	II	II/III	V	IIIb	IIIa	III	IV	VI	VII	VIII	X
Colono Ware										1				
Redware "Flower Pot"											3		6	
Sub-total										1	3		6	

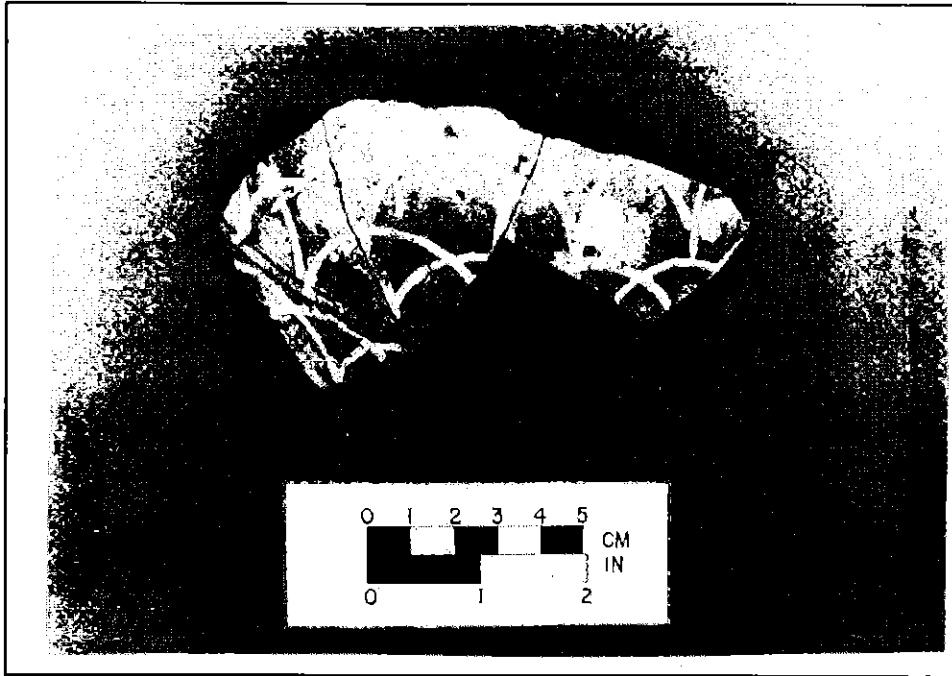


Figure X-7 - Trailed slip-decorated redware bowl from Phase IIa: Vessel no. 2092.

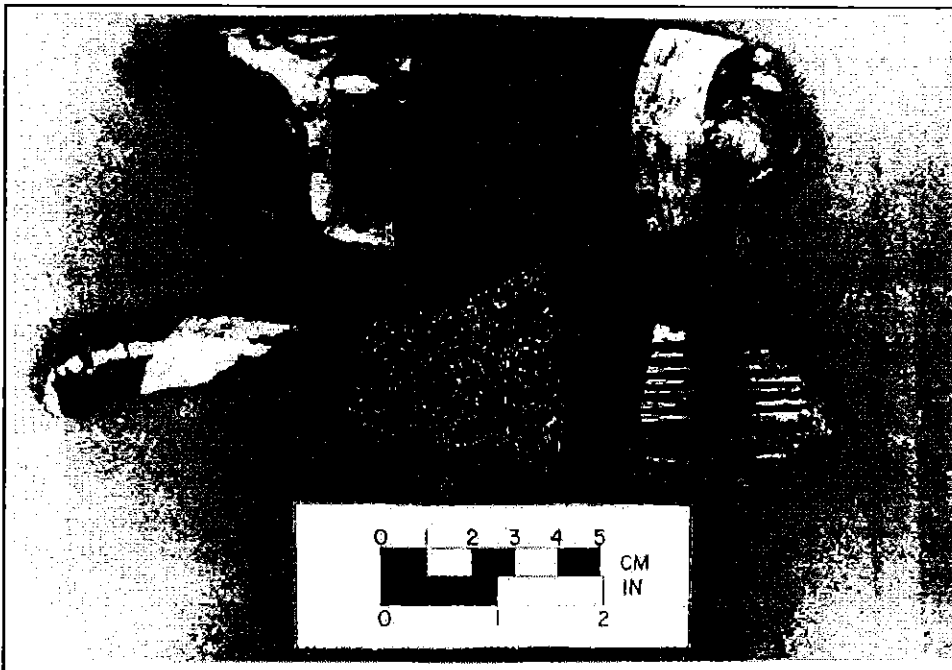


Figure X-8 - Redware from Phase IV: Slip-decorated, (a) 28241, (b) 28589, (c) 30419, glaze over grog, (d) 31653; grooved base, (e) 31652.

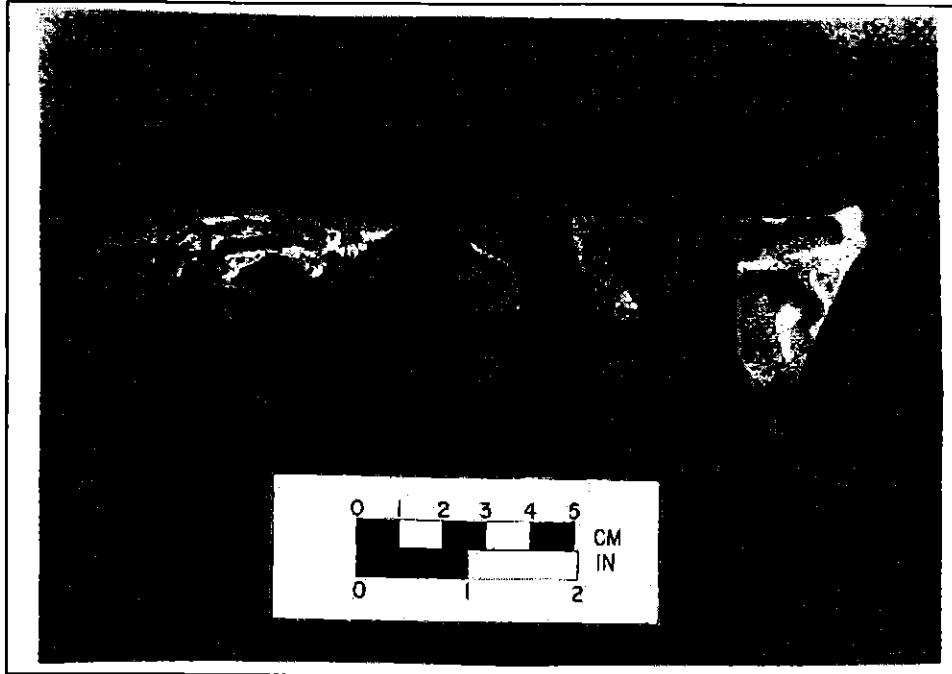


Figure X-9 - Redware with slip decoration from Phases II and II/III: Phase II, slip-decorated, (a) 30636; trailed slip, (c) 30638; Phase II/III, trailed slip, (b) 29064, (d) 29063.

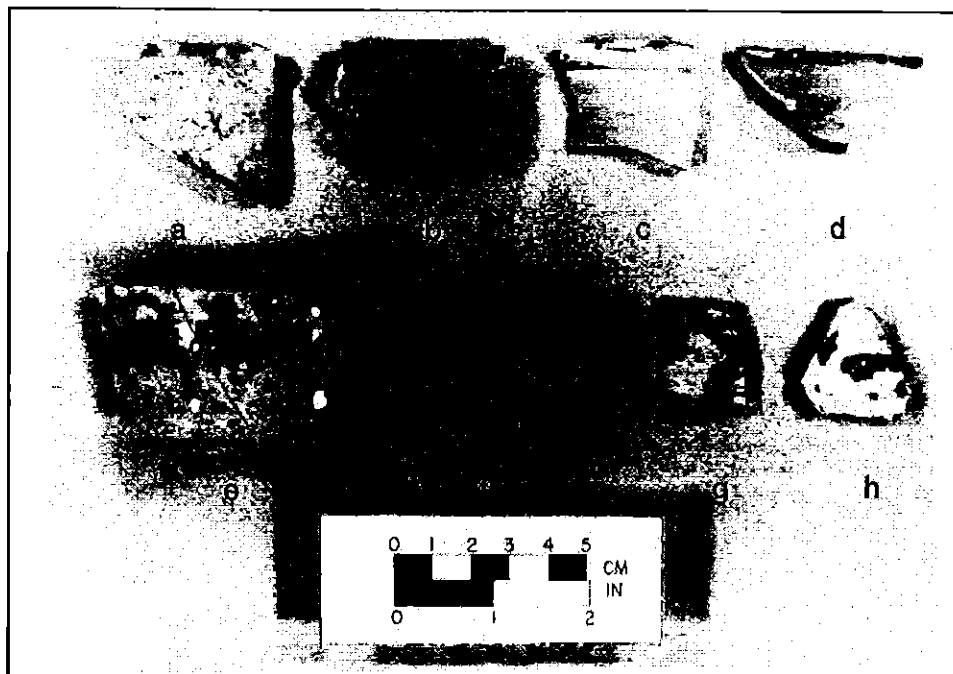


Figure X-10 - Redware from Phase I: (a) 26491, (b) 26481, (c) 26737, (d) 26488, (e) 28641, (f) 26480, (g) 32471, (h) 26476.

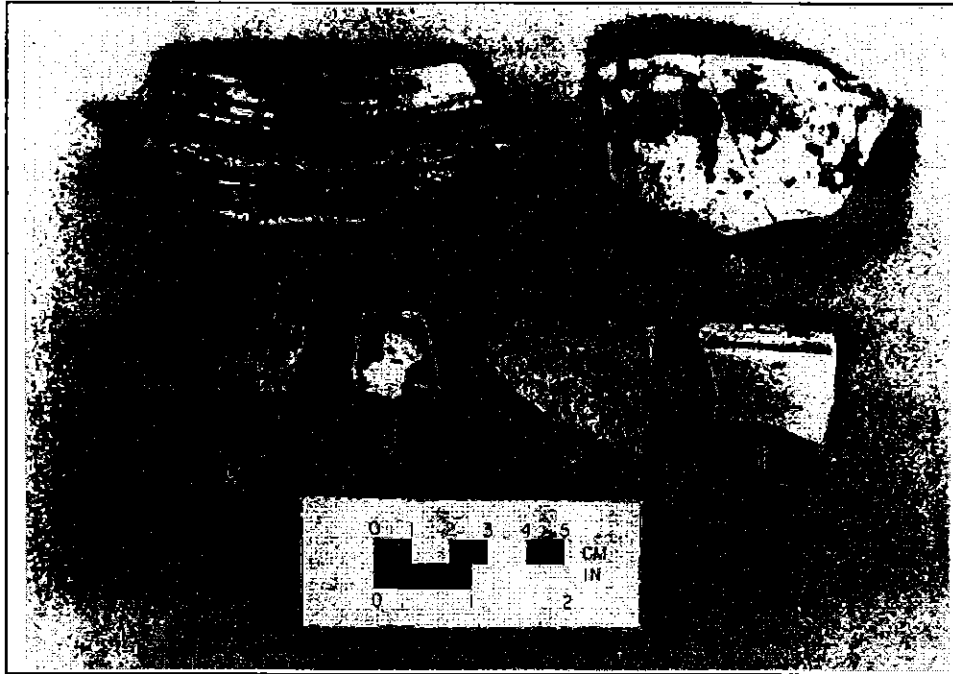


Figure X-11 - Redware from Phase I: (a) 26735, (b) 28641, (c) 26480, (d) 32471, (e) 26491, (f) 26737.

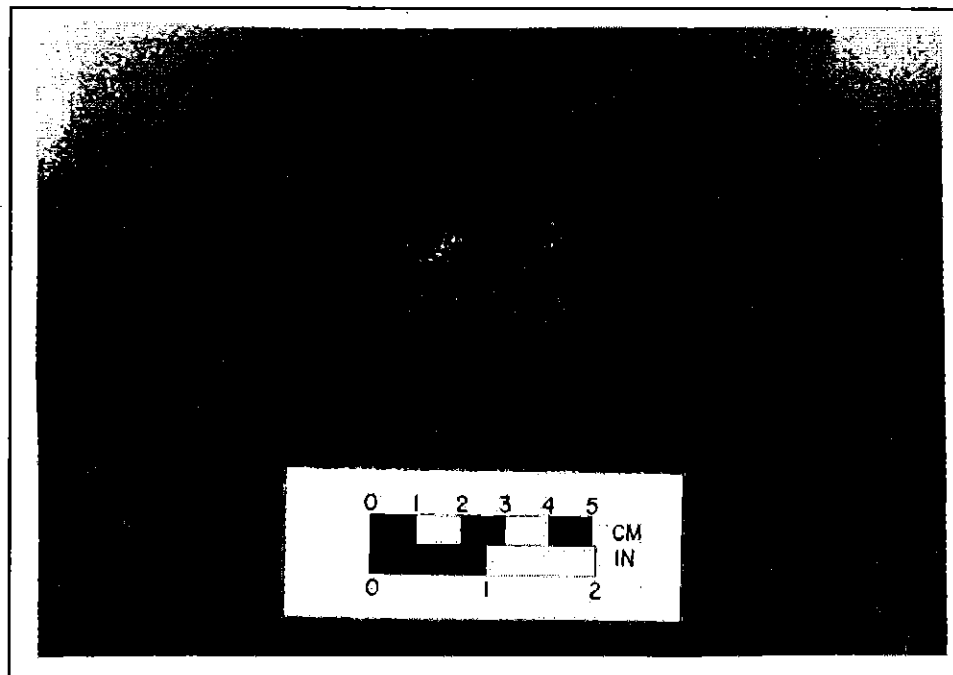


Figure X-12 - Lead-glazed redware bottle from Phase IIa: Vessel no. 2081.

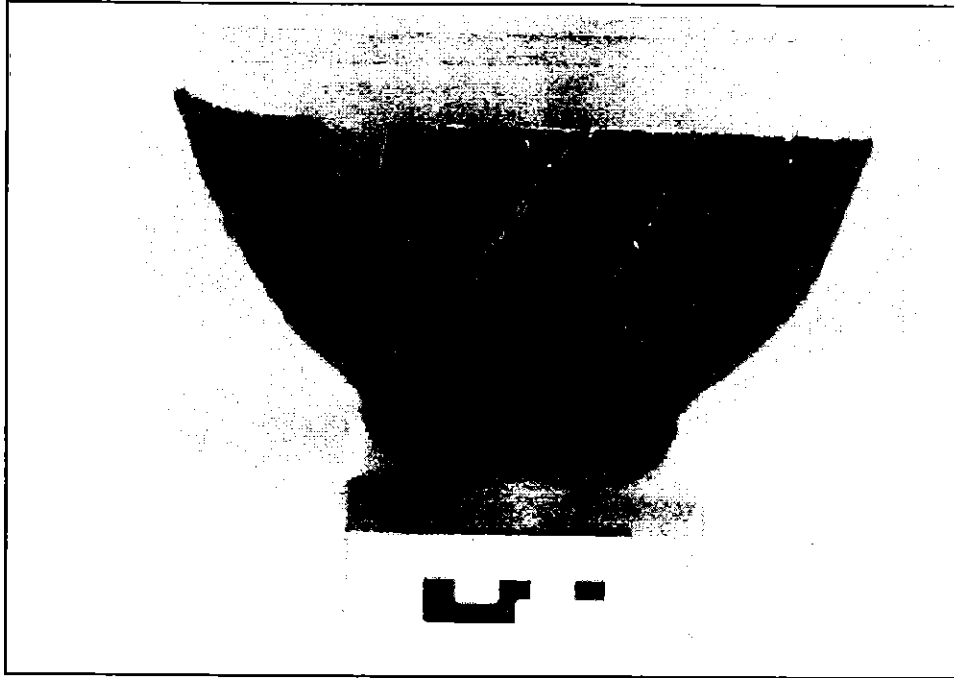


Figure X-13 - Lead-glazed redware bowl from Phase IV: Vessel no. 2185.

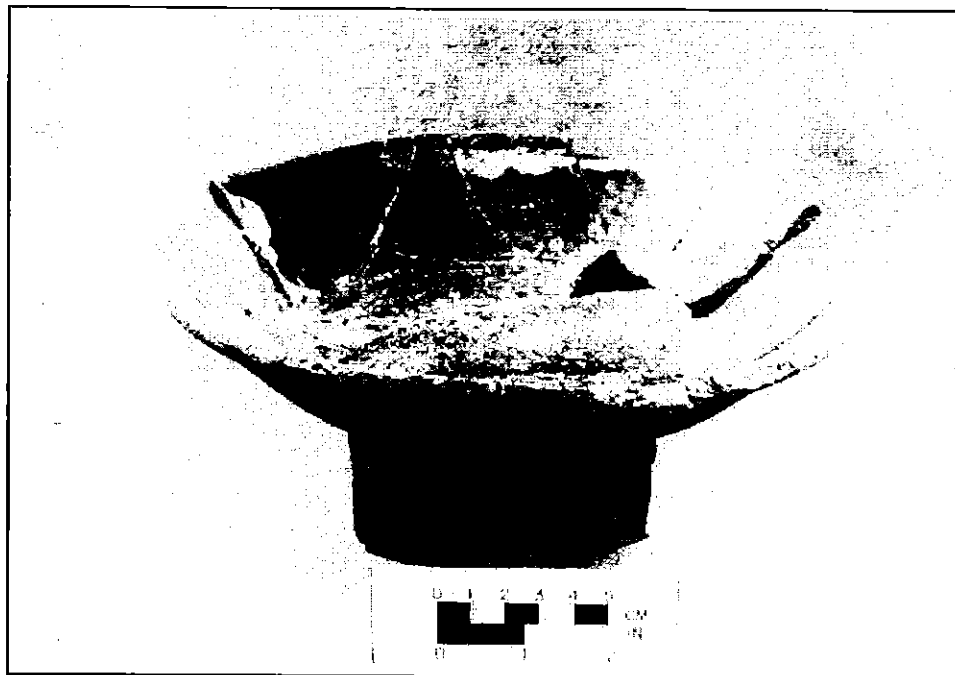


Figure X-14 - Lead-glazed redware milk pan from Phase IV: Vessel no. 2187.

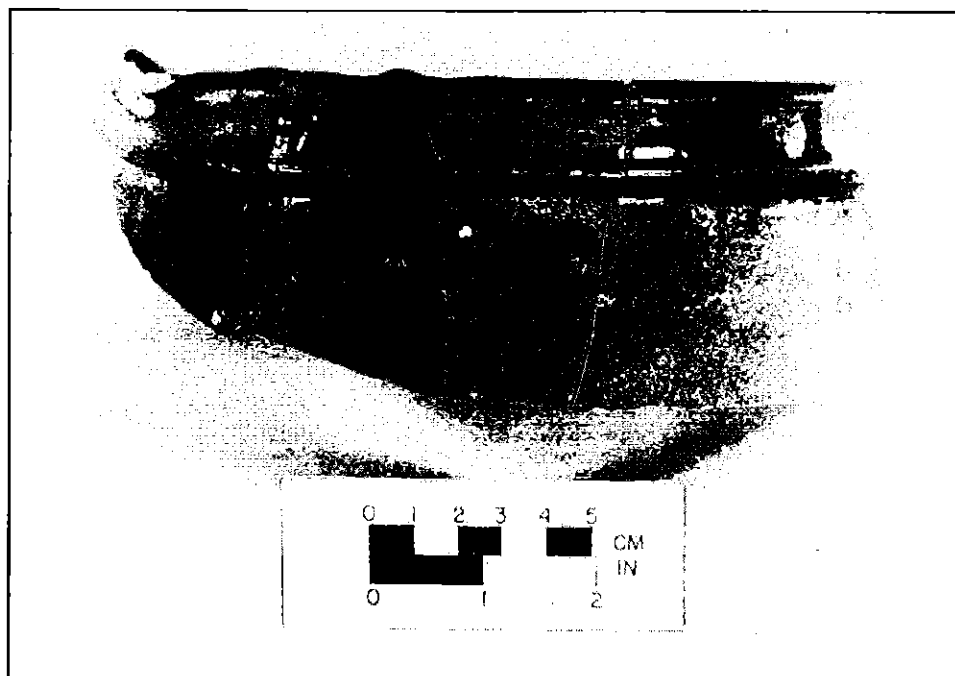


Figure X-15 - Lead-glazed redware jar from Phase I: Vessel no. 2014.

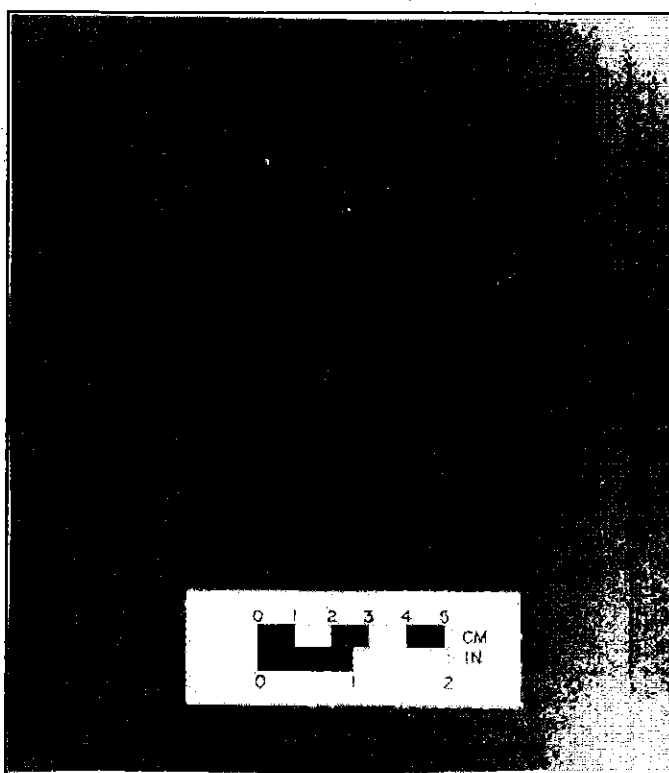


Figure X-16 - Redware jar/pot from Phase IIb: Vessel no. 2215.

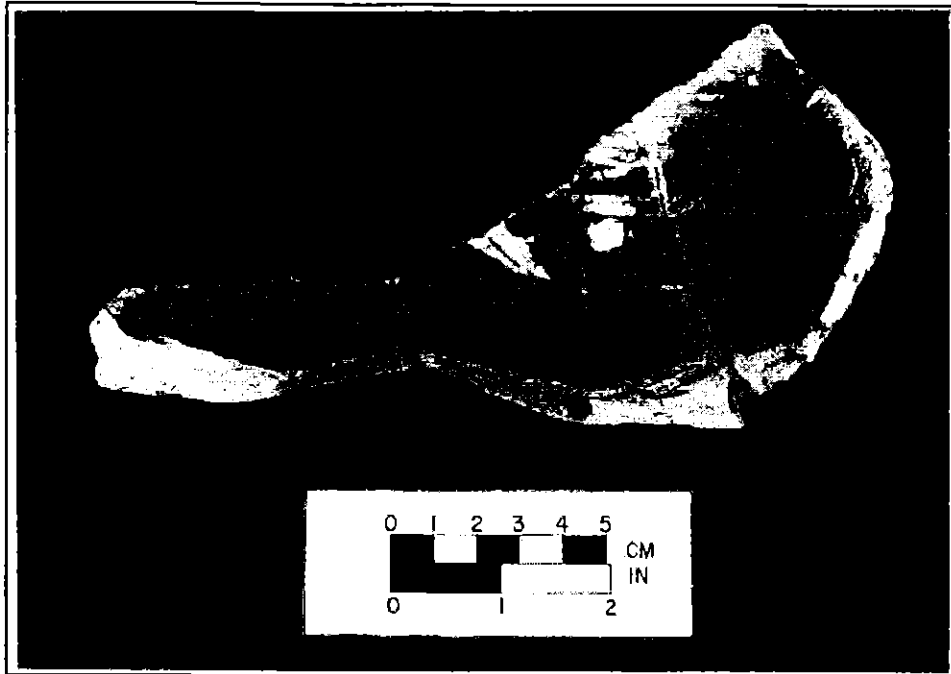


Figure X-17 - Green/yellow glazed earthenware jar from Phase IIa: Vessel no. 2098.

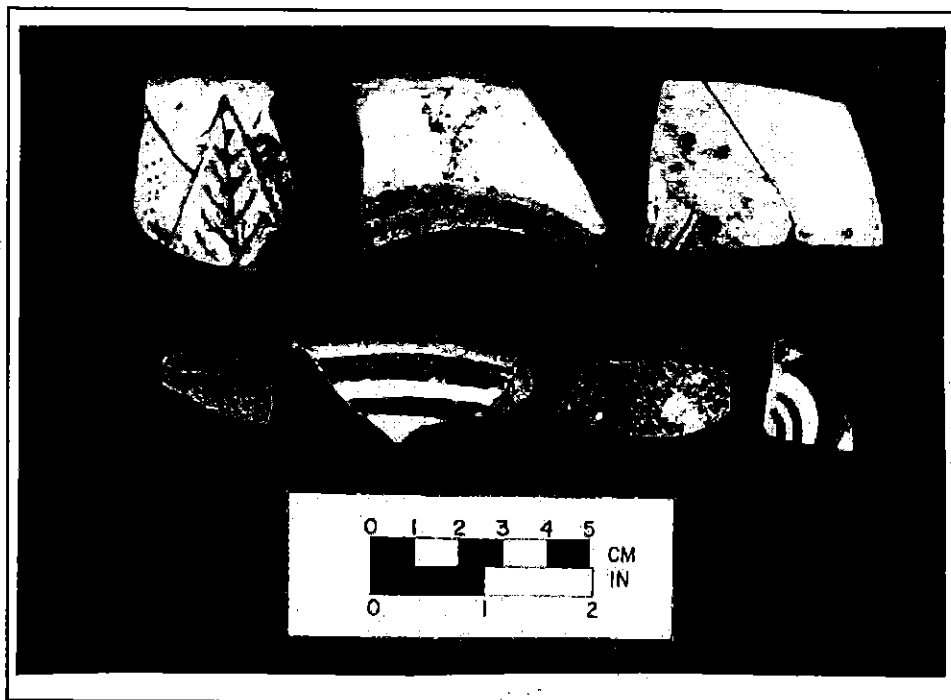


Figure X-18 - North Devon, Staffordshire and tin-glazed earthenwares from Phases I and II. Phase I; North Devon sgraffito (a) 31847, North Devon refined, (b) 26475; Staffordshire trailed, (d) 26459; Tin-glazed, (e) blue, 26469, (f) manganese, 26595, (g) polychrome 26471; Phase II; North Devon sgraffito (c) 27898.



Figure X-19 - Tin-glazed earthenware from Phase IIa: (a) blue, 28478, (b) polychrome, 30703, (c) "blue persan," 31695, (d) blue, 30701, (e) white ointment pot, 30662, (f) blue, 30708, (g) polychrome, 30702.



Figure X-20 - Tin-glazed earthenware from Phases II and II/III. Phase II, blue, (d) 30631, (f) 30041, (g) 30483, (i) 30337, (j) 31254, (n) 30335; Phase II, polychrome, (l) 30628; Phase II/III, blue, (a) 30279, (b) 31202, (c) 30321, (e) 30172, (h) 30277, (o) 30123; white (k) 31207; polychrome (m) 30171.

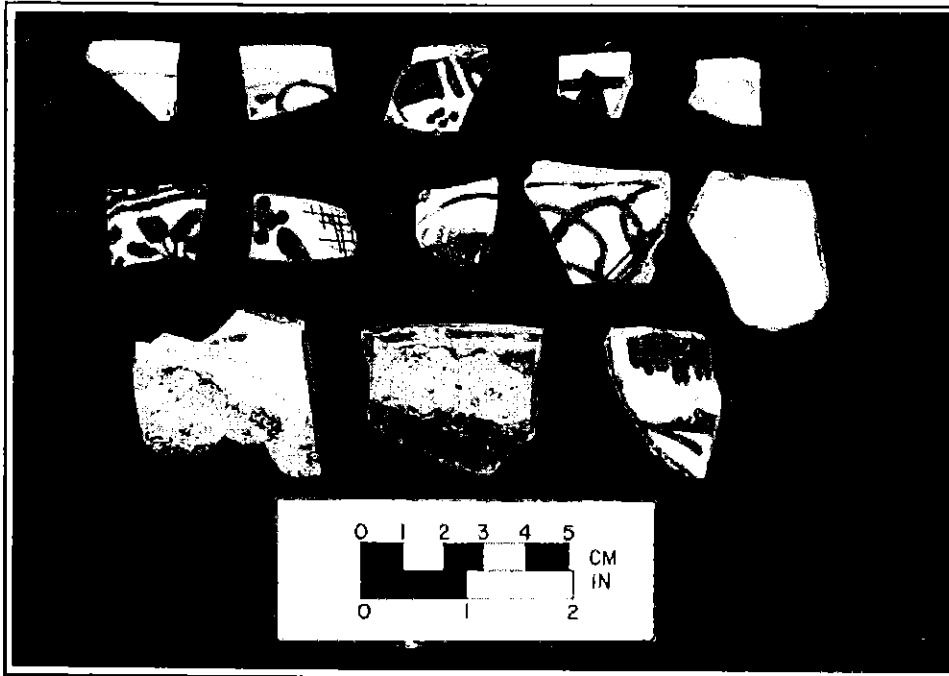


Figure X-21 - Tin-glazed earthenware from Phase V: blue, (b) 29825, (c) 28825, (d) 29905, (e) 29003, (g) 29005, (h) 29008, (i) 31990, (k) 31512, (l) 28893, (m) 26199; polychrome, (a) 26144, (f) 29826; white, (j) 28995.

The blue-painted delft occurred in cups, bowls, saucers, and plates. No special forms like teapots or lids were found. The styles was mostly chinoiserie and probably English for the most part. One vessel from Phase IIa had blue dashes along the rim like the blue-dash chargers (Fig. X-19f) made for display in the late sixteenth century and early seventeenth century.

A few plain white delft vessels were also identified. Bowls were the most common forms, with plates and saucers next. There was only one cup and one galley or ointment pot. The plain white type occurred in all phases for which minimum vessels counts were done forms except Phase I.

The polychrome sherds tended to be small, wherefore vessel identifications were often tentative, but bowls, cups, saucers, and possibly a plate were identified. Bowls were the most numerous.

The "bleu persan" type of delft is rare and is a negative-design decorative technique. Only six sherds and two vessels were identified. Both the vessels were from the early part of the Colonial period in Phases IIa (Fig. X-19c) and IIb. The remaining sherds were found in Phase II and in the pipe trenches of Phase VI. Of the two identified vessels, one was a bowl or saucer with interior decoration and white on the exterior (Phase IIa); the other (in Phase IIb) was probably a bowl with exterior decoration and dark blue on the interior and exterior.

Another early delft variety is manganese decorated. In most cases the manganese slip is sponged on (Fig. X-18e). The sherds recovered from this site were generally too small to identify forms, but there were a bowl in Phase I and a plate in Phase V.

Staffordshire Buff Slipware was found in a variety of decorative types including combed, slip-trailed, dot-decorated, and mottled (Fig. X-18i). The greatest variety of forms was found in Phases II and II/III. The combed, trailed and slip-decorated types were found on various serving vessels such as cups, bowls, and plates. Some of the cups could have been posset cups or possibly porringers. The mottled wares were primarily mugs/tankards.

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Whieldon ware is a refined earthen ware with mottled glazes that are predominantly green in most cases although other colors are also seen. It appeared in Mill Pond in Phases II, II/III, and V as a series of plates; one Whieldon teapot was found in Phase V.

Creamware began to replace much of the earlier variety of ceramics in the 1760s and it was more available (Martin 1994). Creamware was found in cups, saucers, dishes, plates, bowls, and two pitchers. It is interesting that the only examples of creamware chamber pots occurred in Phase IV after they had started to be replaced by pearlware and readily available Chinese export porcelain as the stylish ceramics.

There were several decorative varieties in creamware, including annular, overglaze hand-painted decoration, and transfer designs. The sherds with transfer designs, of which there were only four, were too small to be able to identify a form. The hand-painted designs occurred on two cups, one each from Phases V and IV.

Although feather-edged rims in creamware were invented around 1765 (Noël Hume 1969:125), three such vessels occur in Phase II/III, implying that this phase was not covered by Phase V until the 1760s. The two earlier sherds, one each in Phases IIb and II are probably intrusive.

After the Revolution, pearlware began to replace creamware and all the other serving wares except porcelain. The number of forms increased from Phase V to Phase IV. Hand-painted pearlware was identified in bowls, cups, and saucers, while in Phase IV a teapot and lid and a mug were added. The hand-painted polychrome forms in Phase V included a bowl and pitcher and, in Phase IV, five bowls, six cups, and a mug. Both blue and green shell-edge occurred only in flat forms. In Phase V, there were 14 plates when the two edge types were counted together. In Phase IV there were eight plates, two saucers and a platter. Transfer-decorated vessels occurred in plates and bowls in Phase V and in bowls and a saucer in Phase IV. Interestingly, there was a teapot that may be undecorated, as well as an undecorated plate in Phase V. Annular decoration was more common in Phase IV and had only two forms: bowls and pitchers.

A number of post-1800 wares were also recovered. These seem primarily to be intrusions, and included whiteware, ironstone and yellowware. Phase V included annular and undecorated whiteware (five sherds) and yellowware (one sherd) and no ironstone. Phase IV, whose deposits were removed from the twentieth-century disturbances, had no whiteware, ironstone, or yellowware. Phase VI, the fill of the drainage trenches that was deposited in the late 1820s and repaired at some later time, had seven decorative varieties of whiteware (30 sherds) and two sherds of yellowware, but no ironstone. Ironstone does appear, with whiteware and yellowware, in Phase VII.

Astbury ware is a thinly turned, hard, red-bodied ware with a lead glaze. Sherds for this were found only in Phase V, where one cup was identified. Another thinly turned ware is known as "Jackfield," which is a refined redware covered with a glossy black glaze. It is also frequently decorated with sprigs of white pipeclay. Janowitz (1993:VI-42, -43) points out that although Noël Hume gives the production date for this ware as about 1745 (1969:123), there were potteries in both England and New England that made this kind of pottery from at least the late seventeenth century. Sherds and vessels identified as Jackfield-type occurred in Phases IIa, II, and V. A unidentified vessel with white pipeclay around its foot was found in Phase IIa. A bowl was found without pipeclay in Phase II and a teapot or jar in Phase IV.

Another hard-fired, refined redware vessel was an unglazed lid with sprigged flying birds (Fig. X-22). This could be a dry-bodied stoneware like those made by Elers and other potters in Staffordshire. Teapots in this Elers stoneware are a common form decorated with molded sprigged ornaments. However, the body of this example was too soft to be classified as stoneware.

Chinese porcelain occurred in a limited range of forms, in a limited number of decorative types, but with considerable variability within the decorative types. Chinese porcelain did not occur on the site until Phase II, that is, not until the Maycock occupancy. Both overglaze polychromes and plain undecorated vessels are relatively rare. Undecorated Chinese Porcelain was represented only by a knob from a lid (Fig. X-23g) and a cup in Phases II and II/III, respectively. Overglaze decoration occurred on saucers (Figs. X-23b, d, e; 24a, b) and cups (Fig. X-24d) and one plate. The number of vessels and decorative motifs increased with the blue-underglaze decoration. Besides

cups (Figs. X-24e, f; X-25a, b) and saucers (Figs. X-23j-l; X-24g,j; X-25d, e), bowls (Figs. X-23h, i; X-25c), plates (Figs. X-24h, i; X-25f, h), and a soup plate (Fig. X-25g) were found.

Only four sherds of Batavian porcelain were found. Three were in Phases II and II/III and the last was in Phase V. This variety of Chinese porcelain is a light brown on the exterior (Fig. X-23f). No forms could be identified, given the small size of the sherds.

European porcelain was represented by two bone china saucers and a plate of the same material in Phase IV. One of the saucers had a hand-painted overglaze flower and the other a transfer-printed "willow pattern" design. The plate and the hand-painted saucer also had gilding on the rim.

Stonewares were primarily used for serving drinks and for food preparation and storage. An exception was the white salt-glazed stoneware that was made into a variety of serving dishes including plates (Fig. X-26a, c), bowls, chamber pots, cups, saucers, a lid, and two teapots. The scratch-blue white salt-glazed stoneware recovered was represented only in Phase IV by a mug and a cup.

Slip-dipped white salt-glazed mugs were fairly rare, being found only in Phases II and II/III (Fig. X-26b, d-f). Nottingham stoneware served the same function and was found as mugs from Phase IIb to V (Fig. X-27). Two bowls were also identified.

Westerwald stoneware was made predominately in mug, globular mug, and tankard forms (Fig. X-28a, c, d, f). Two possible pitchers were recovered as well. Westerwald pots/jars were found only in Phase IV and chamber pots in Phases IIa, II, II/III, and V. That the pots/jars are late in this sequence follows the observation by Noël Hume that the pots/jars "seem to have reached the American colonies in the second and third quarters of the eighteenth century" (1969:184-185). A chamber pot with a sprigged lion and flower, very similar to the one illustrated by Noël Hume (1969: Fig. 92) was found. Related to these wares are the Rhenish sprig-molded or general undecorated types. They appeared almost exclusively as mugs or globular mugs.

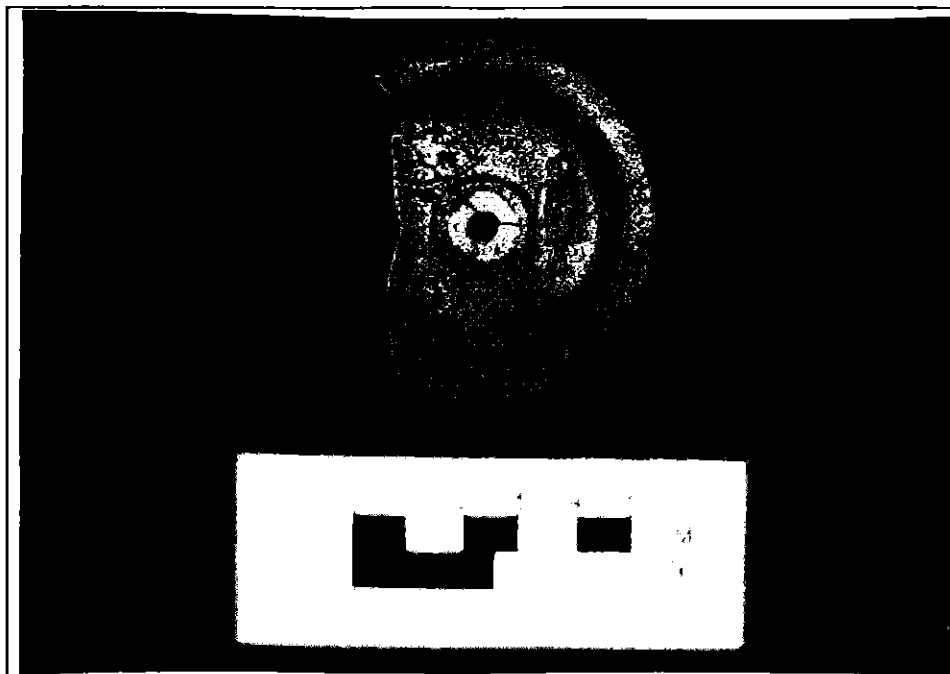


Figure X-22 - Refined redware teapot lid from Phase IIa: Vessel no. 2160.

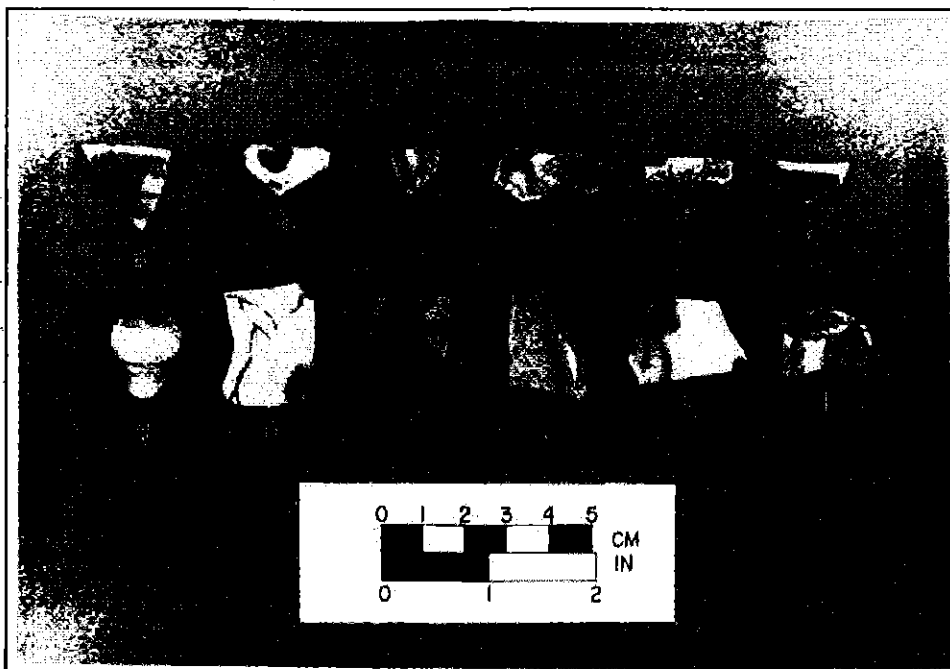


Figure X-23 - Chinese and Batavian Porcelain from Phases II and II/III. Phase II, Chinese overglaze (b) 30090, (c) 30532, (d) 31250, (e) 30028; Blue, (g) 30501, (j) 30326; Chinese undecorated, (l) 30484; Phase II/III, Chinese underglaze, (a) 30109, (h) 30113, (i) 30114, (k) 30112; Batavian, (f) 30110.

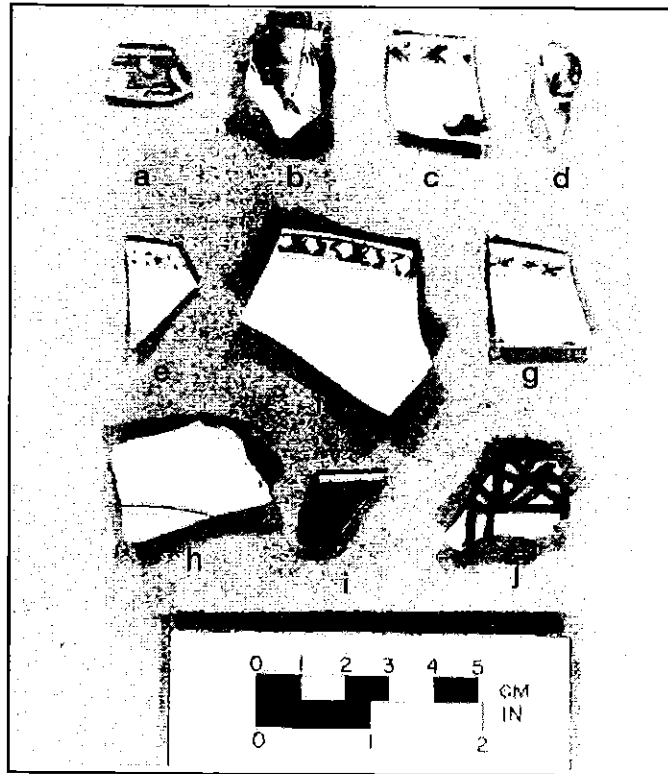


Figure X-24 - Chinese Porcelain from Phase V: Chinese overglaze (a) 29819, (b) 29891, (d) 29917; Chinese underglaze, (c) 26919, (e) 31515, (f) 28071, (g) 31487, (h) 28887, (i) 31752, (j) 26921.

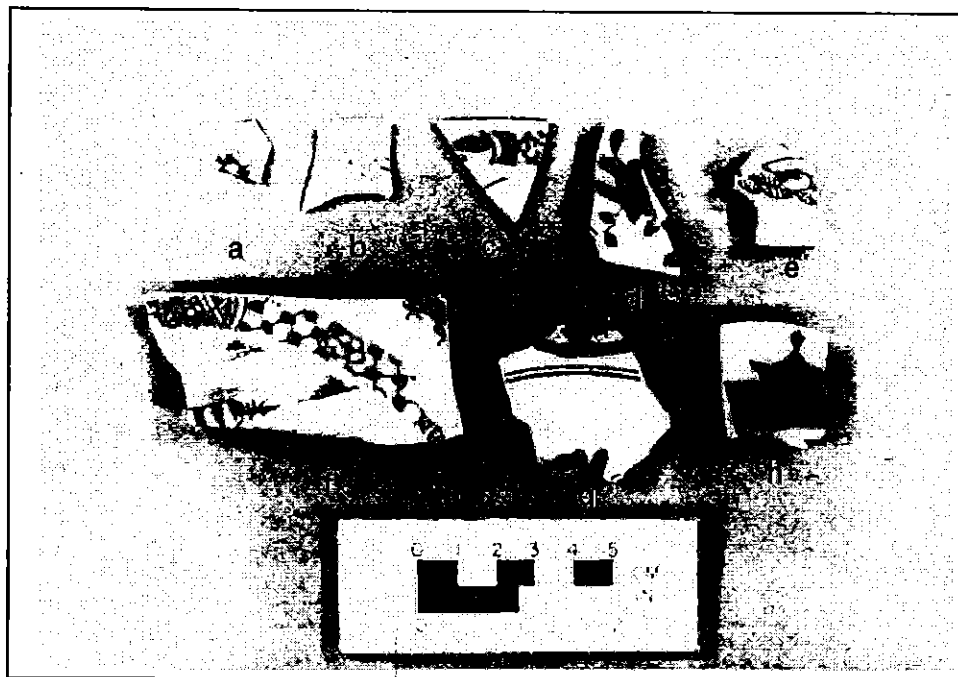


Figure X-25 - Chinese Porcelain from Phase IV: Chinese underglaze; (a) 29550, (b) 29720, (c) 28217, (d) 31916, (e) 30410, (f) 28571, (g) 29265, (h) 29548.

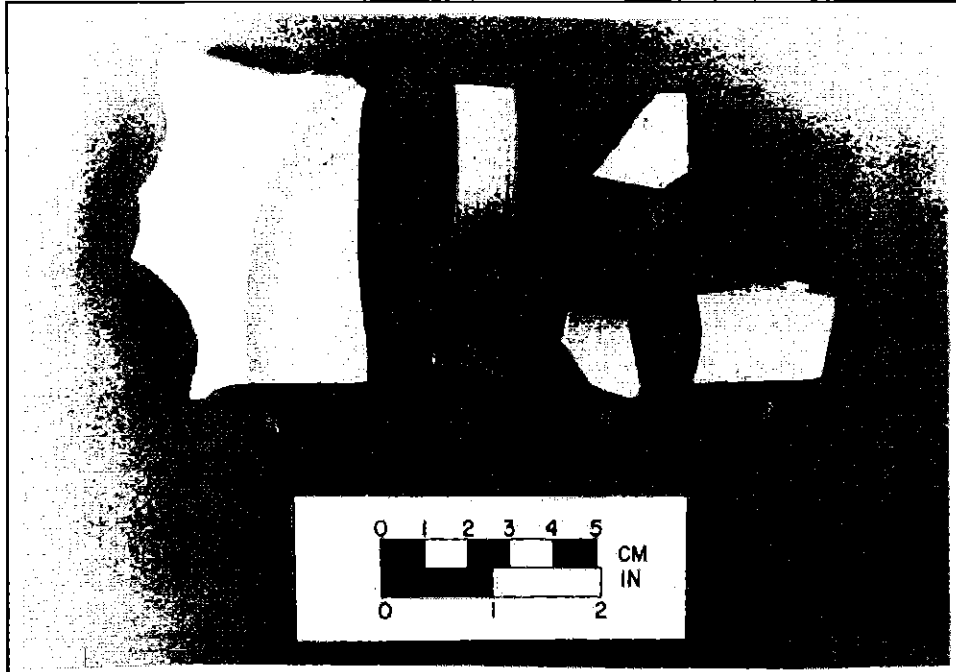


Figure X-26 - White salt-glazed stoneware from Phases II and II/III. Phase II, (a) 30493, (d) 31253, (e) 30531; Phase II/III, (b) 30132, (c) 30127, (f) 30133.

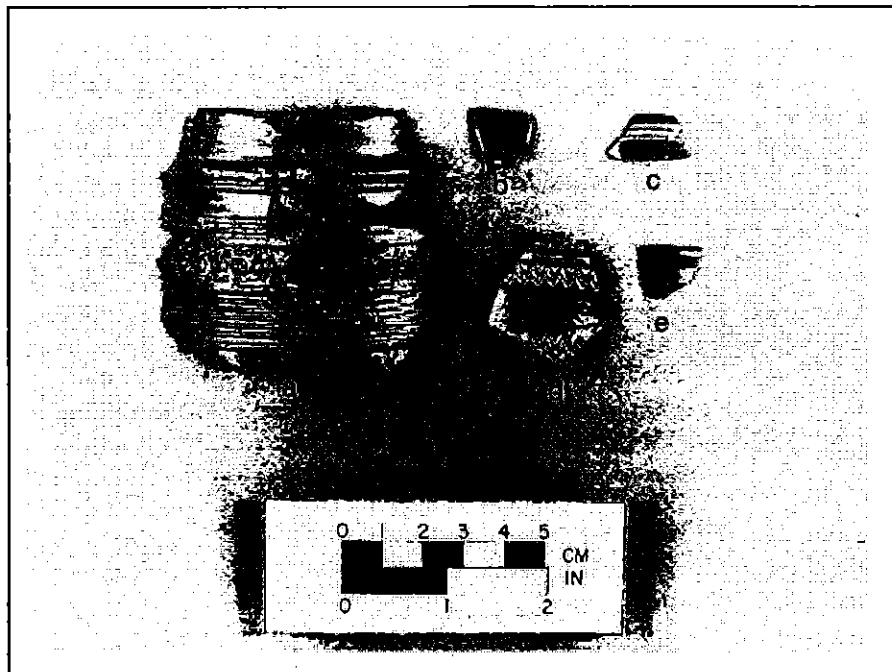


Figure X-27 - Nottingham stoneware from Phases II and II/III. Phase II, (b) 30048, (c) 30492, (e) 30142; Phase II/III, (a) 30566, (d) 30142.

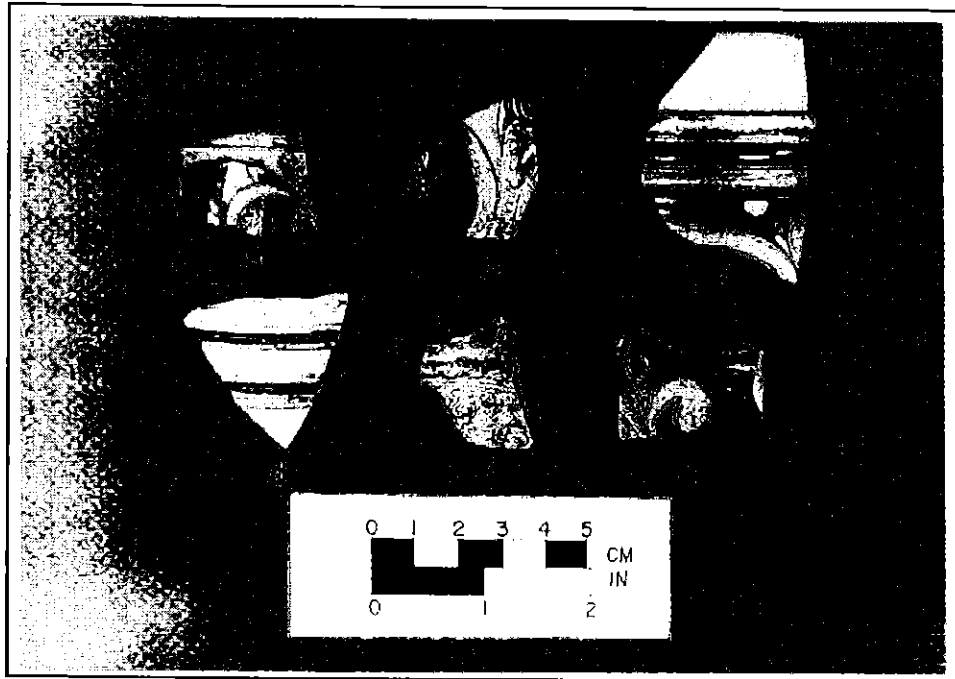


Figure X-28 - Westerwald stoneware from Phase IIa: (a) 30205, (b) 30673, (c) 32051, (d) 31666, (e) 30710, (f) 31667.

Two early wares in this same tradition are called Rhenish Brown and Höhr Gray. Both appeared as identifiable forms only in Phase I as a globular mug and a mug/tankard. British Brown mugs/tankards were found throughout the sequence. General gray salt-glazed stoneware was also made in mugs but found in only Phases II and V.

Stoneware storage pots/jars were much rarer than their redware counterparts. Gray salt-glazed stoneware pots/jars occurred in Phases II/III and V, along with an early example of American style salt-glazed ware. One sherd from a bottle or jar in Phase IV exhibited cobalt-filled impressed letters spelling "BOST...." (Boston) in Phase IV dating to before 1812 (Fig. X-29b). This pot may have been from the Jonathan Fenton stoneware pottery, which operated in Boston from 1794 to 1796 and which used "BOSTON" for a mark on its pots (Watkins 1959:16-19). The blue cobalt decoration was used from the beginning of the stoneware pottery industry in Connecticut, where Fenton was located before coming to Boston. Five British Brown pots/jars were found in Phase IV. Before that time, the sherds were small and it was not clear whether the examples in Phases I, IIa, II, and V were pots/jars or another form. Deteriorated Bellarmine bottles were found in Phases Ia, IIb, and II.

Two Albany Slip stoneware jars/jugs were found in Phase V. This would be early for Albany Slip, and they may have been intrusive since they were in the first layers of the deposit that were in contact with twentieth-century disturbances.

Besides locally made redware storage pots/jars, pots/jars were also found made in Buckley ware (Phases I, II/III and IV). Another form of storage jar was present also and this was the Iberian storage jar with a small, constricted round neck, found in Phases II/III and V.

Several parts of metal cooking equipment were found. These included three fragments of iron pots, one each from Phases II/III, IIIa, and III. The fragment from II/III was a cast-iron leg; the other two were rim fragments. A cast-iron ring from Phase II/III has been tentatively catalogued as part of a stone pipe. However, this may have been too early for such an item.

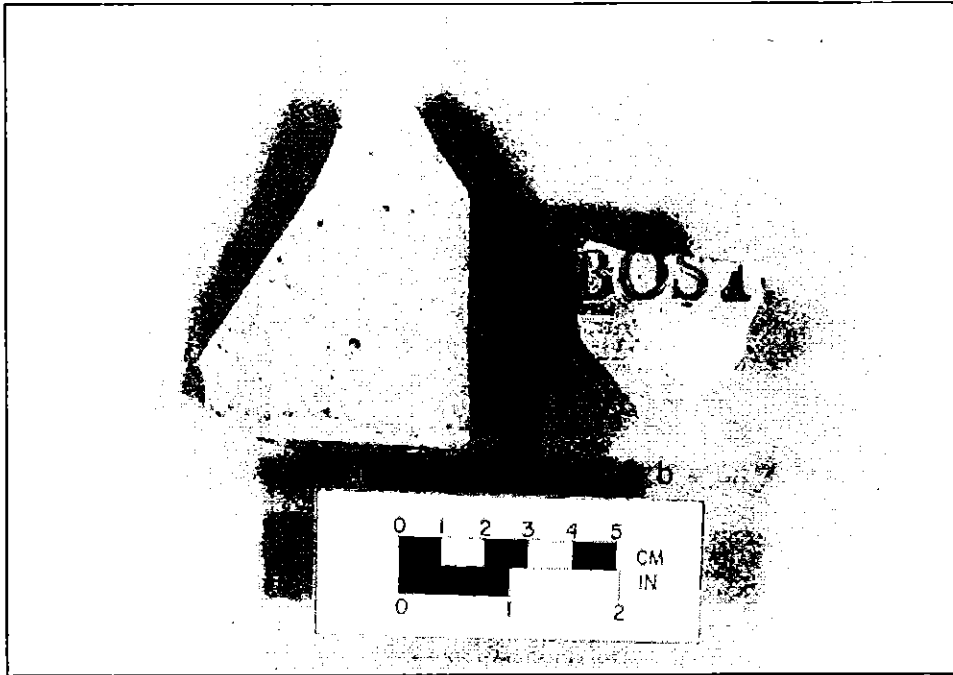


Figure X-29 - Gray salt-glazed stoneware from Phase IV: (a) 28236, (b) 29664.

Utensils and parts, including knives, a fork, spoons, and bone handles, were recovered from both Colonial and Early Republic phases. The earliest identifiable utensil was a knife from Phase IIa. Two spoons and two bone handles (one is illustrated in Fig. X-30a) were found in Phase II. Phases V, III, and VII each had a bone utensil handle and Phase V another knife (Fig. X-30b). The only fork recovered was from Phase IIIa in the Early Republic period.

One of the more interesting artifacts was a small pewter lid from Phase IV (Fig. X-31). Given its size, it is unlikely it was for a mug. It may have been the top of a flask or bottle or some other small container.

Bottles for beverages or pharmaceutical were recovered from all phases. Wine/liquor bottles in the Colonial phases were characterized by sheared lips with applied string rims (Figs. X-32a, c, d; X-33; and X-34.b) and had kickups with sand or glass pontils. Early Republic period wine/liquor bottles had hand-tooled lips with or without applied string rims (Fig. X-35). Case bottles were also present, but only in Phases III and IV.

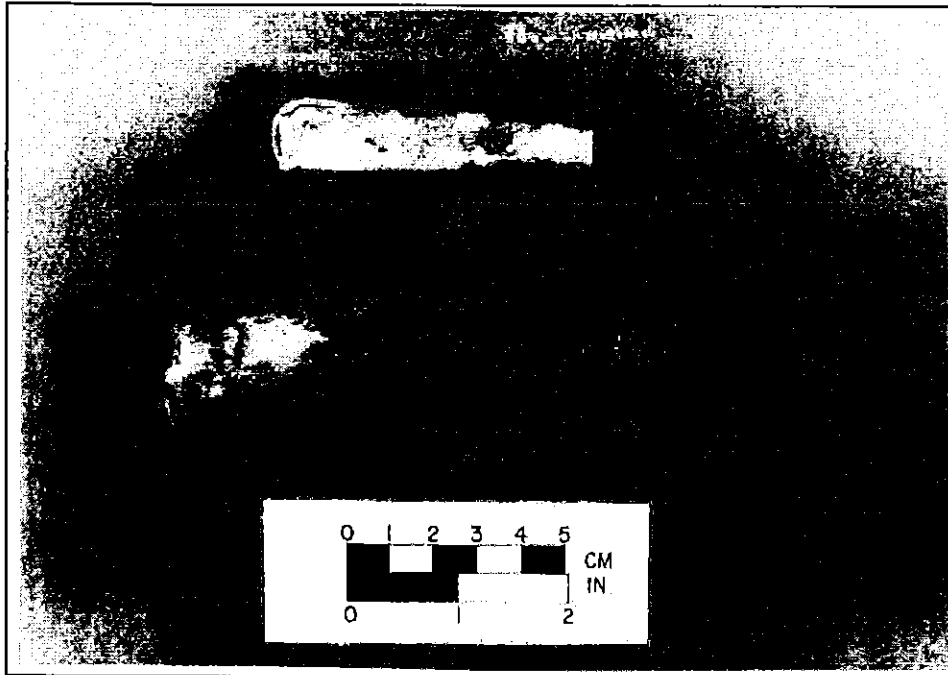


Figure X-30 - Utensil handles: (a) bone handle from Phase II, 24960, (b) knife with an antler handle from Phase V, 24961.

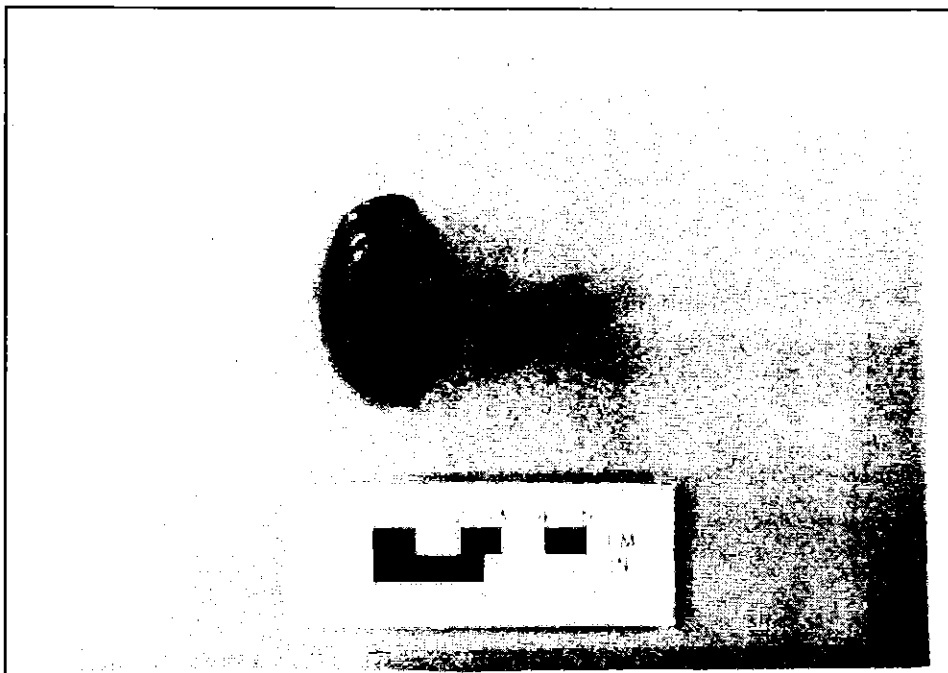


Figure X-31 - Pewter lid from Phase IV: 24812.

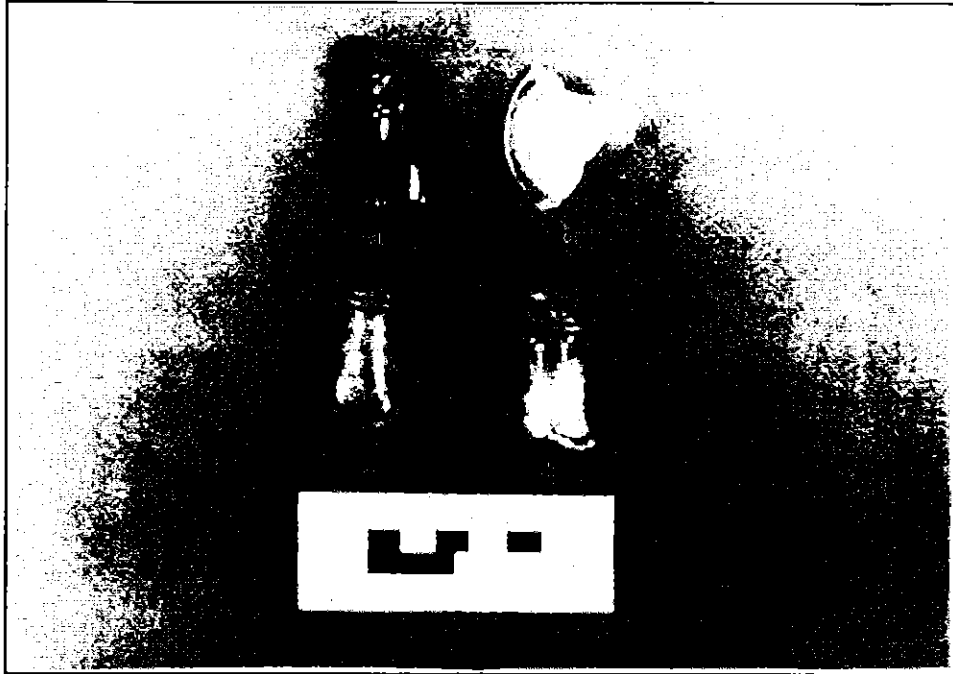


Figure X-32 - Glass bottle finishes and table glass from Phases II and II/III; Phase II/III, bottle finishes, (a) 30623; Phase II, (b) table glass 30092, (c) 30402, (d) 31299.

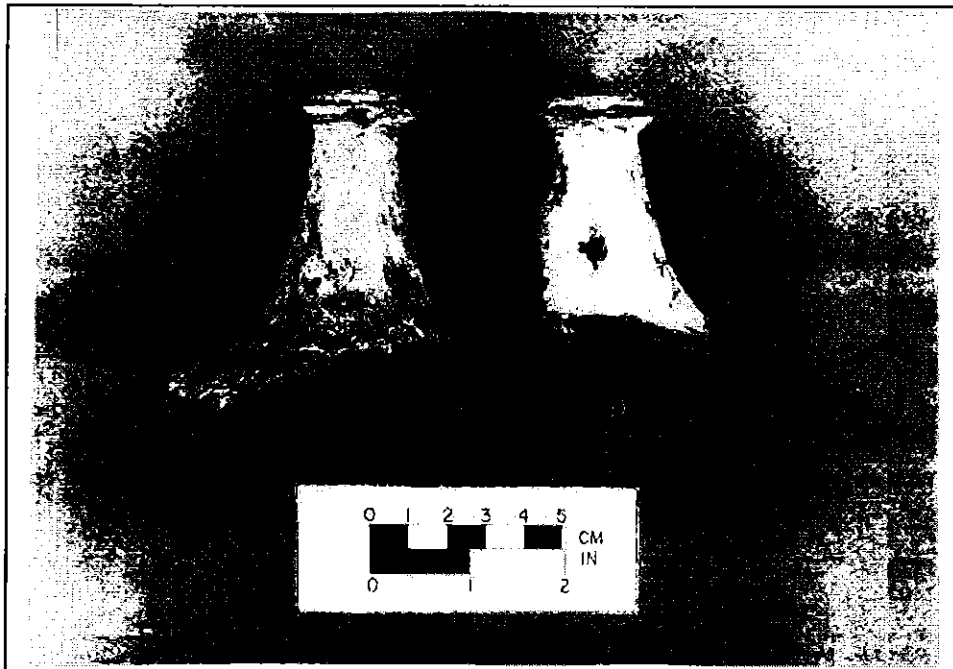


Figure X-33 - Glass bottle finishes from Phases II and II/III: (a) Phase II/III, 30623, (b) Phase II, 29125.

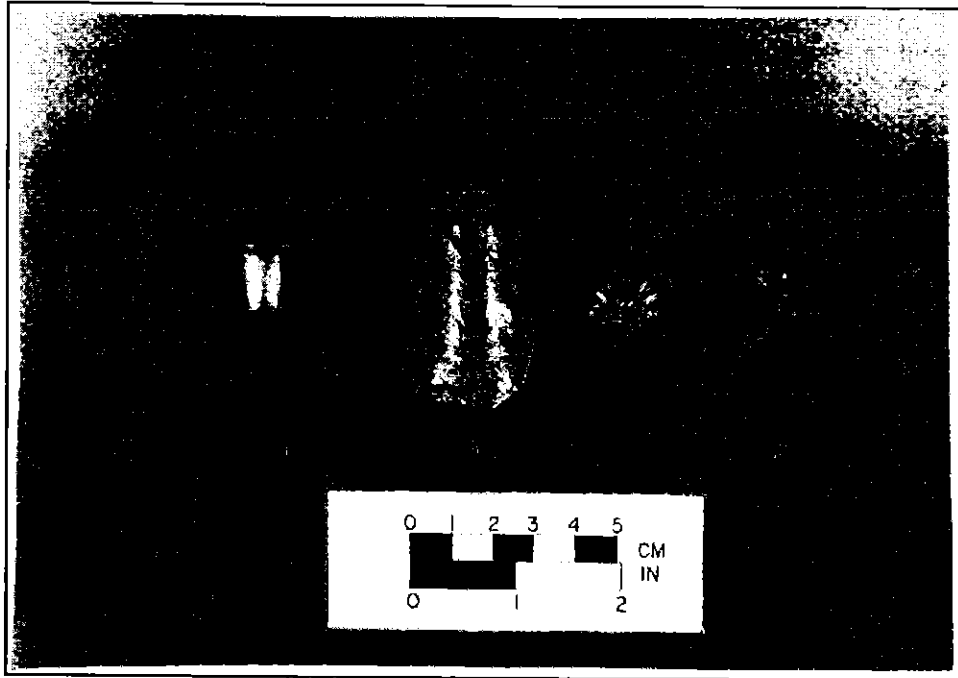


Figure X-34 - Glass bottle finishes and table glass from Phases IIIb and IIb. Phase IIIb, (a) bottle finish with cork, 25208 and 25013; Phase IIb, bottle finish, (b) 28471, (d) 26847, baluster from stemware, (c) 26096.

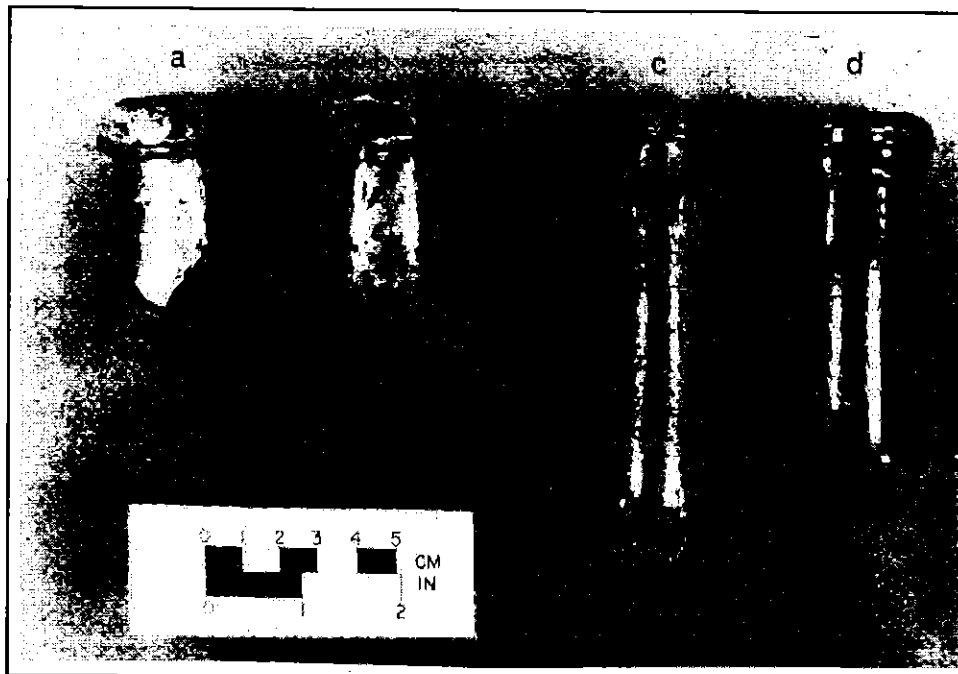


Figure X-35 - Glass bottle finishes from Phase IV: (a) 30477, (b) 32270, (c) 29759, (d) 29413.

Glass drinking vessels were represented by bases and stems from stemware (Figs. X-32b; X-34c, X-36.a) in Phases I, IIb, II, II/III, V, and IV. Tumblers appeared in Phase II/III and thereafter. However none of the phases had more than, one except Phase IV, which had six. Other kinds of glass tableware were very scarce and none was complete enough to identify a form confidently. These appeared in Phases II (Fig. X-36b), II/III, IIIb, III, and VI.

Pharmaceutical bottles were found in Phases I, IIa (Fig. X-37), IIb (Fig. X-34), II, V, III, and IIIb (Fig. X-34a). A number of late nineteenth century pharmaceutical vessels had intruded into Phase III.

5. Personal

Several items of personal use were found in the different phases. Two kinds of wig curlers, made of red and white clay, were recovered (Fig. X-38). The white ones were made of pipe clay and imported to New England. These occurred in Phases IIb (1), II (1), V (2), IV (2), and VI (1). None exhibited any maker's mark. Their shapes were similar to those of the examples at Faneuil Hall (Dallal 1993:VII-34; Plate VII.14). One of the wig curlers from Mill Pond (Phase IIb; Fig. X-38b) and two from Faneuil Hall were made of red clay, perhaps locally made. Unlike a third of those from Faneuil Hall, none of those from Mill Pond had holes in its ends.

Fan parts were also recovered from both Mill Pond and Faneuil Hall (Maczaj 1993:X-18). All were of bone and none of those from Mill Pond were decorated (Fig. X-39). One fan part occurred in Phase I and four were found in Phase II.

The only jewelry recovered was three beads, one each from Phases IIb, IV, and VI.

Five coins were recovered. One was a 1946 Lincoln penny from the interface between Phase V and the twentieth-century disturbance. An unreadable coin of British half penny size (Seaby 1965) was found in Phase II. Three coins were found in Phase IV. One was probably a counterfeit coin. It was an Irish half penny with a date of 1783, a year in which those coins were not made (Craig 1976). Another was a Virginia half penny from 1773 (Yoeman 1989). The last coin was illegible and was the size of the pennies of that time or of a token. All the coins were cuprous.

Some miscellaneous personal items were also found. These included a probable clock part from Phase II, a worked bone strip from Phase II, a carved bone and a modified antler from Phase V, and a mirror from Phase III.

Chamber pots were also placed in this group, as representing personal hygiene. The first chamber pot occurred in Westerwald Gray stoneware in Phase IIa. Phases II and II/III had chamber pots in Westerwald Gray Stoneware (2), white salt-glazed stoneware (1) and slip-decorated redware (1). Westerwald chamber pots also occurred in Phase III. Chamber pots occurred in four different wares in the Mill Pond fill (Phase IV): creamware (3); lead-glazed redware (2); slip-brushed redware (1); and white salt-glazed stoneware (1).

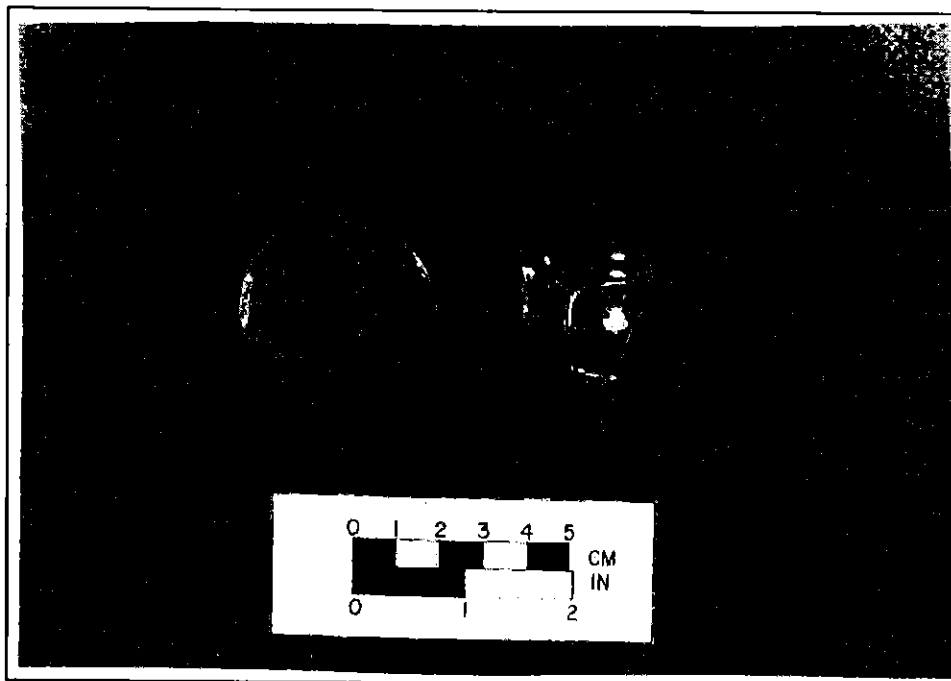


Figure X-36 - Table glass from Phase II: (a) 27488, (b) 31304.

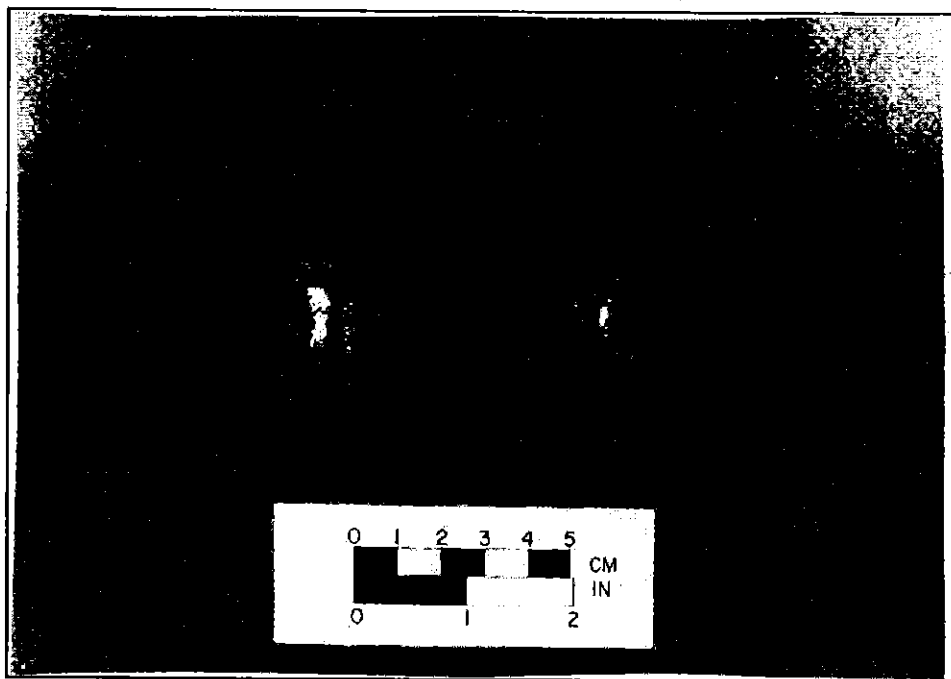


Figure X-37 - Glass bottle finishes from Phase IIa: (a) 31741, (b) 30227.

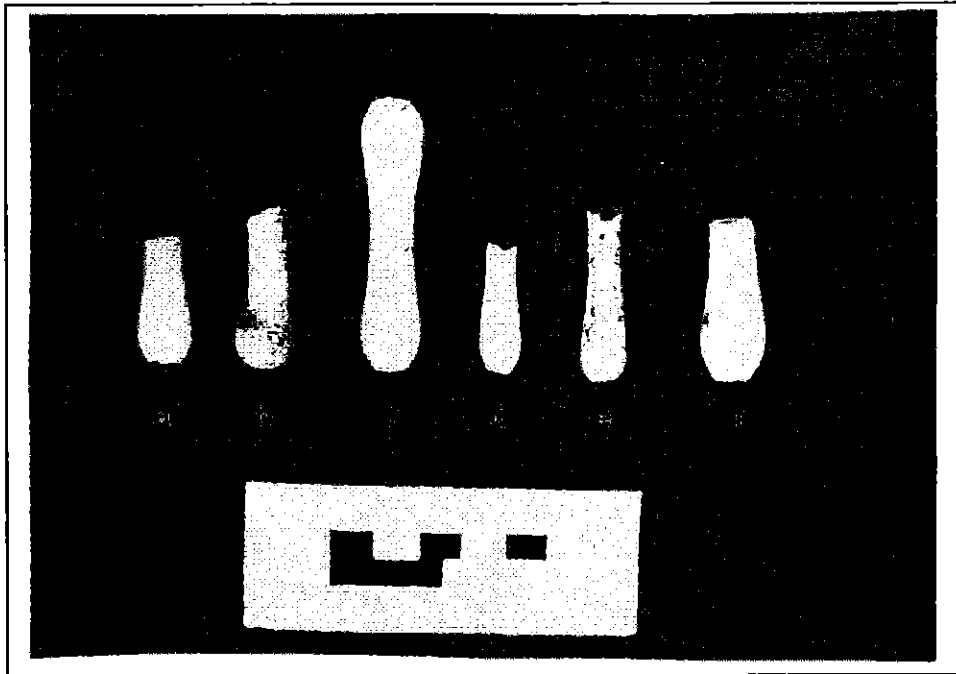


Figure X-38 - Wig curlers from: (a) Phase II, 27910, (b) Phase IIb, redware, 28492, (c) Phase IV, 25053, (d) Phase IV, 29633, (e) Phase V, 28786, (f) Phase V, 29904.

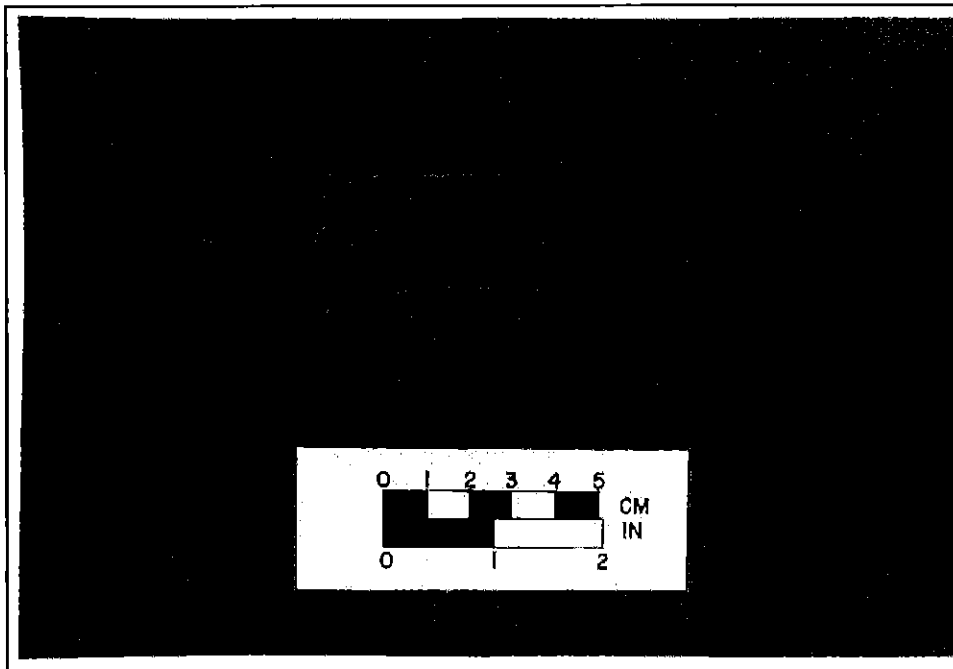


Figure X-39 - Fan parts from Phase II: (a) 24950, (b) 24951, (c) 24952, (d) 24953.

An unusual bone handle was recovered. It had a hand carved on one end and a hollow at the other for receiving the end of a handle of a different material (Fig. X-40). It was recovered from Phase II. The function of this object is unknown but may be a handle to some object used as a personal item. On the other hand, it could have been the handle to an eating utensil or, possibly, a tobacco tamper.

The last item placed in this category was a bone cap from Phase IIb which is interpreted as a cap to a flask or other container. The artifact was hollow and had threads on the exterior of the shaft and an overhanging lid on the closed end (Fig. X-41). Most probably, it is from a bottle-like container, also of bone, which held some personal item. However, it is also similar to a Colonial period cap for a powder flask on a bandolier in the collection of the United States National Park Service at Jamestown, Virginia (Outlaw 1990:Fig. 38). The flasks in the collection are of wood and a similar cap made of lead was found at the early seventeenth-century Maine site on Governor's Land, near Jamestown. However, the bone cap from Mill Pond is smaller than the example from Jamestown, and has threads on the exterior as opposed to the unthreaded example from Jamestown. Thus, the cap from Mill Pond fits *into* the mouth of a vessel while the powder-flask cap fits *over* the mouth. While the cap could have belonged to a small powder flask, it seems more likely that it was the cover for some personal item.

6. Arms

Arms-related artifacts included 16 gun flints, lead sprue from making lead balls, and a possible scabbard hook. The gun flints occurred in Phases IIa (1), IIb (1), II (2), II/III (3), V (7), III (1), and IV (1). Most were gray and only three were yellow-brown. Gunflints with their side-to-side measurements intact were measured to identify the kinds of guns the flints would have fit (see Hamilton and Emery 1988:20). Three flints were over 34 mm., two in Phase V and one in Phase II (Fig. X-42d; X-43a, b) and would have been used for muskets. Two were under 20 mm., one each in Phases II and IIa, and would have been used in trade guns or pistols (Fig. X-42a, b). Most of the rest of the flints were about 28 mm. and would have been used for fowling pieces. One, in Phase V (Fig. X-43c), was 21 mm. and would have fitted a trade gun.

Lead sprue was found only in Phases V and VII. Two examples of lead casting debris were found in each phase. This could be related to other kinds of metal working but was included here since the other possible functions were less specific. The possible scabbard hook was in Phase II.

7. Tobacco

As discussed in Section VI, tobacco pipes were more common in the earlier phases than in later phases and this was due at least partly to the increase in numbers of other classes of artifacts. Some of the pipe bowls matched the forms illustrated in Noël Hume (1969: Fig. 97). The similar pipe bowls in Phase I included forms datable to the last half of the seventeenth century. For example, the pipes illustrated in Figure X-44 match forms 14 (1680-1710) and 9 or 12 (1645-1680). Early forms were still found in the early eighteenth century in Phase IIb, including type 7 with 6/64 in. bores from 1620-1660 (Fig. X-45a, b), type 12 from 1650-1680 (Fig. X-45c), and type 13 from the late seventeenth century (Fig. X-44d). Early forms, such as type 14 (1680-1710), continued into Phase II.

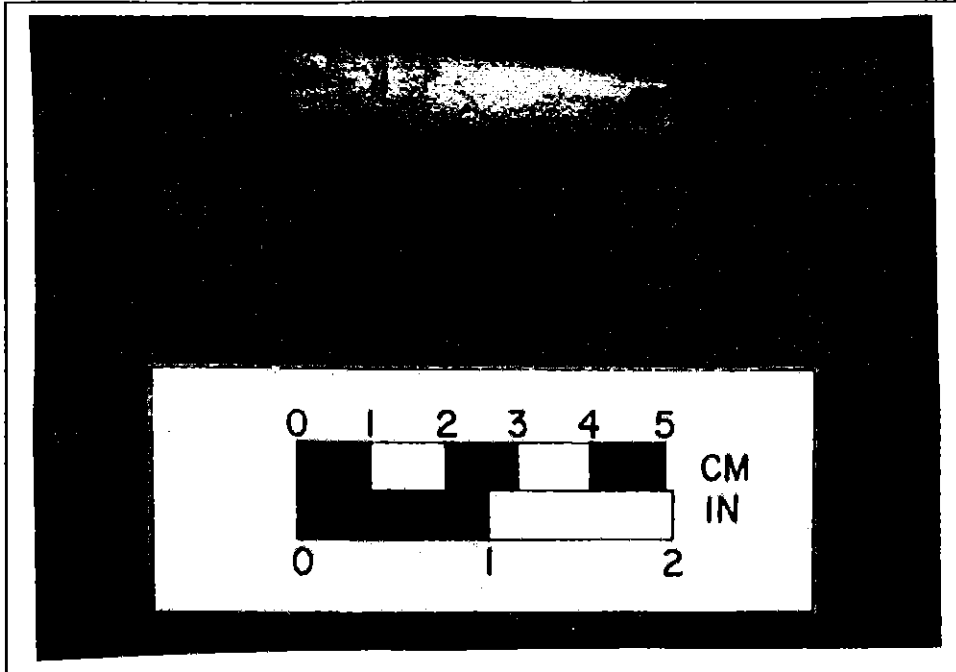


Figure X-40 - Bone handle with carved hand from Phase II: 24949.

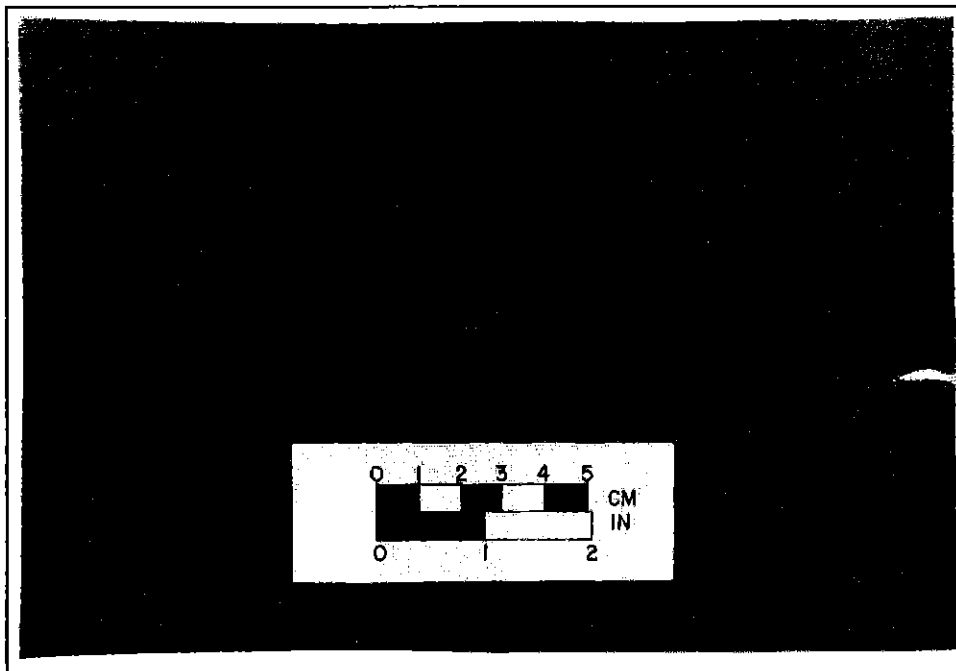


Figure X-41 - Bone cap from Phase IIb (interior view): 24947.

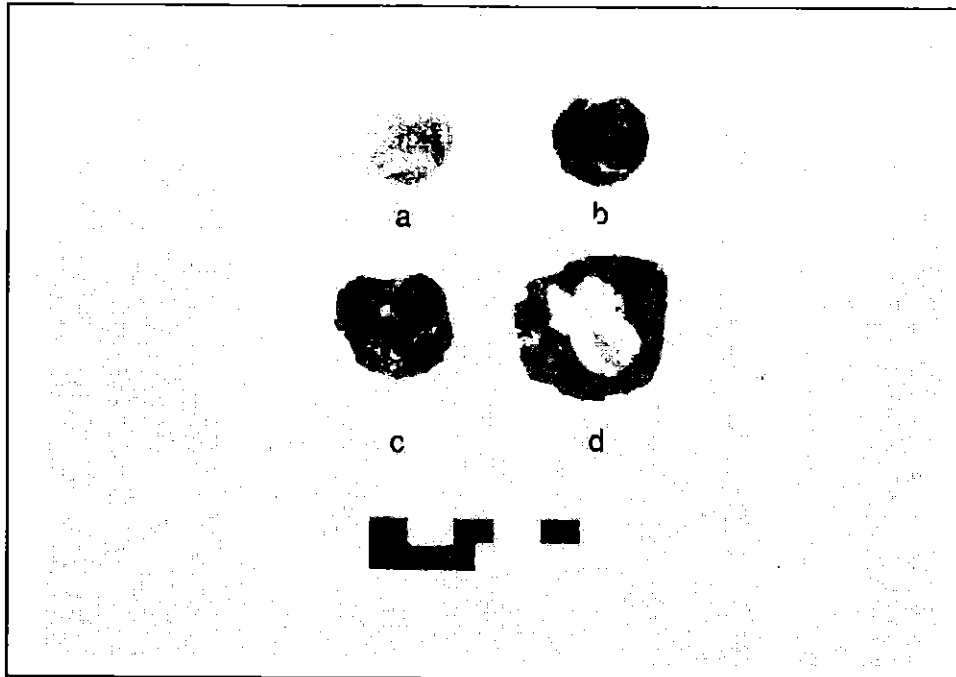


Figure X-42 - Gunflints: (a) Phase II, 27974, (b) Phase IIa, 30694, (c) Phase II/III, 30322, (d) Phase II, 30555.

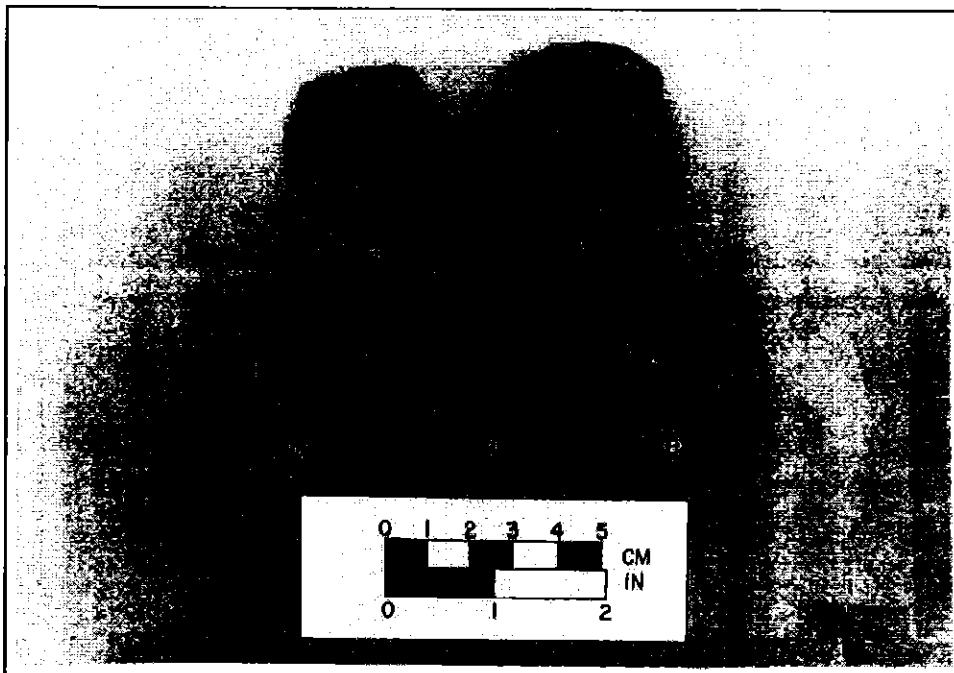


Figure X-43 - Gunflints from Phase V: (a) 32038, (b) 29877, (c) 28947, (d) 29019, (e) 26915.

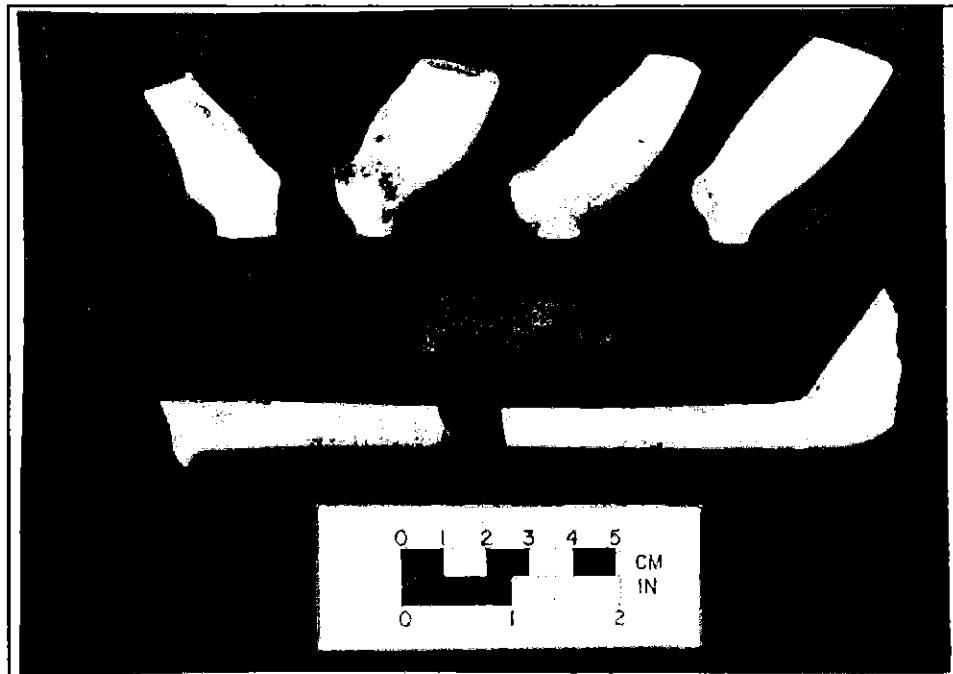


Figure X-44 - Tobacco pipes from Phases I and IIb. Phase I, (a) 26721, (b) 26642, (c) 28634, (e) 26501 (terra cotta), (F) 26637, (g) 31979; Phase IIb, (d) 28348.

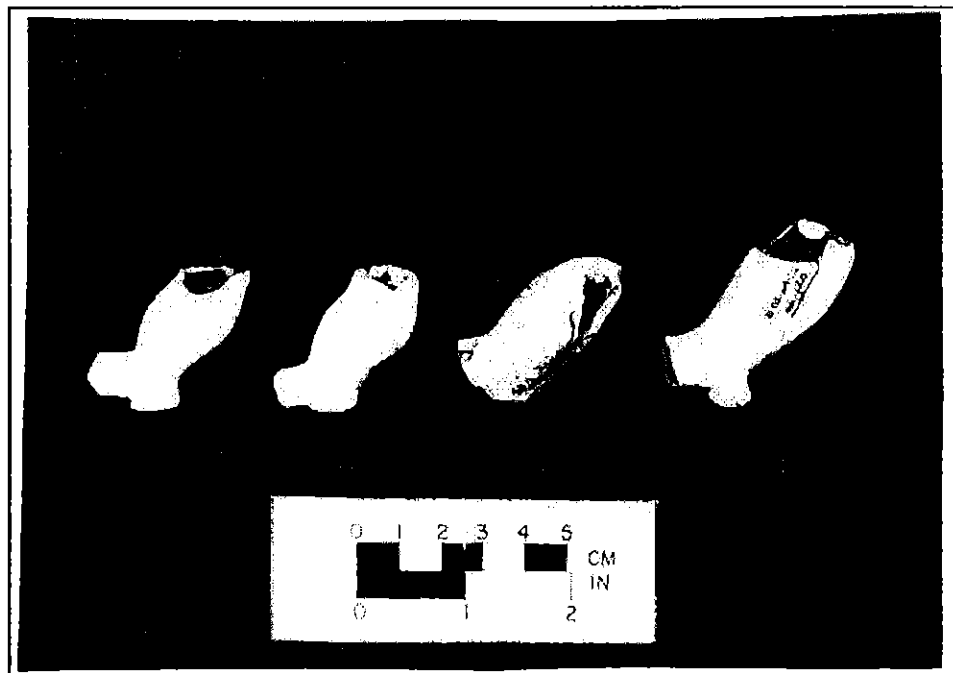


Figure X-45 - Tobacco pipes from Phase IIb: (a) 24775, (b) 25059, (c) 26567, (d) 26420.

Rouletting (Fig. X-44b, f, g) and incising around the rim of the bowl and rouletting in general were concentrated in the five early periods (I to II/III) with 33 vs. seven examples in the later Colonial and Early Republic phases (V, IV, VI, VII). Phases I and IIb were the only ones that had the "Bristol Diamond" design, rouletted dots in the form of a diamond, which was common on seventeenth-century Bristol pipestems (Dallal 1993:Table VII.1). Several examples of these decorative varieties were found at Faneuil Hall (Dallal 1993:Table VII.1). These were the only specific similarities in pipe decorations with those found at Faneuil Hall; none of the maker's marks at Mill Pond were the same as those at Faneuil Hall.

By Phase II, which had a mean ceramic date in the 1710s, pipe bowls of type 15 (Fig. X-46), dating 1700-1770, were common. Other later types included type 18 (1720 to 1820) from Phase IIb, type 16 (1730-1790) from Phase V, and type 25 (1790-1820) from Phase VI. While a few early pipe forms were found in later deposits, such as the pre-1700s types 10 and 12 in Phases V and VI respectively, no late-style pipes were found in early contexts.

A few pipes made from terra cotta rather than pipe clay were also recovered. These are presumed to be locally made pipes or at least to have been made in the New World. Four out of the five examples were from the early part of the eighteenth century, one each in Phases I (Fig. X-44e), Ia, IIb, and II. Only one terra cotta pipe, made to imitate European forms, was found in the later phases and it is probably a residual artifact; it was found in Phase VI. The measurable pipestem bores were 6/64 in. (Phase IIa), and 8/64 in. (Phase IIb). In addition, the redware pipe bore in Phase I was very irregular and elliptical rather than round.

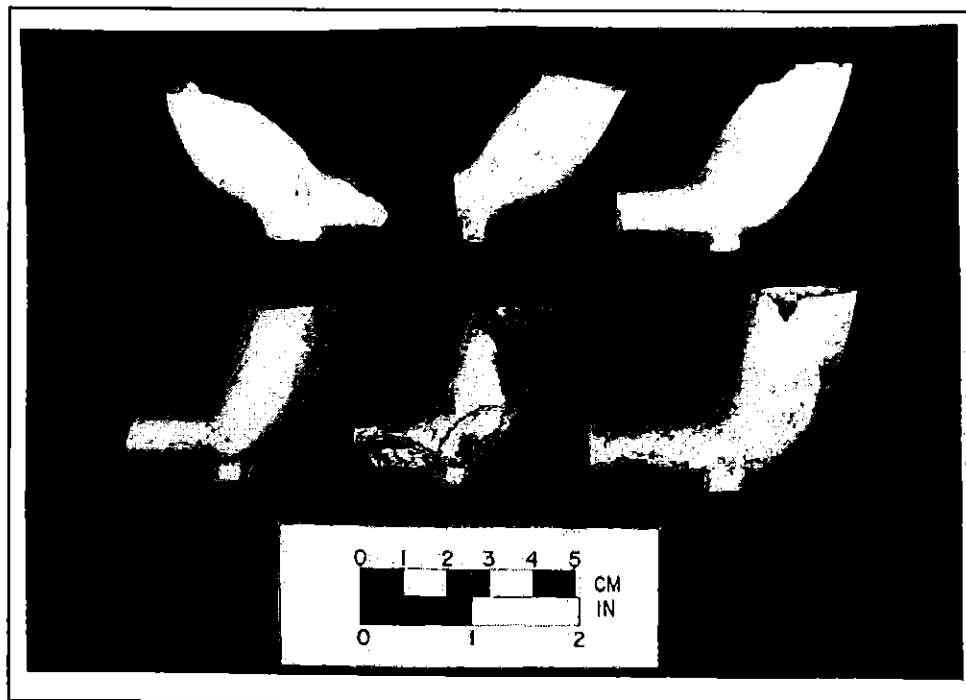


Figure X-46 - Tobacco pipes from Phases II and IIIb: Phase II, (a) 30513, (c) 31290, (d) 29107, (e) 29107, (f) 31290; Phase IIIb (b) 31615.

8. Activities

The activities represented in artifacts from the site included stabling domestic animals, metal working, commerce, writing, lighting, toys, gardening, water control, and possibly shoemaking and boat-making or -repairing activities.

Stabling was represented by one horseshoe each from Phases IIa and V. Further, a single spur was found in each of Phases IIb and III. An almost complete horse collar was recovered from Phase IV.

Metal working was represented by 15 fragments of crucibles and a variety of slag in both Colonial and Early Republic phases. Only two small fragments were definitely associated with the occupants of the site: one from Phase IIb and one from Phase V (Fig. X-47). The rest of the sample came from the Early Republic period (Figs. X-48, X-49, and X-50). Besides the one fragment from Phase IIIb, six were found in Phase III, four in Phase IV, and one in Phase VI. The latter could have come originally from either Phases V or III.

A half of a glass tube was recovered from Phase V deposits. Its function is unknown. It could have been from a syringe or a blow pipe used in the making of glass beads. However, Noël Hume doubts that glass beads were made on American soil until the first quarter of the nineteenth century (Noël Hume 1969:53).

Commerce is represented by one piece of a set of nested weights found in Phase II (Fig. X-51). These were common in Colonial times and are still in use in parts of Latin America. This weight had the number four embossed on its interior base. Originally, it was assumed that this referred to four ounces. There are three well known systems of weights and measures in use today: the avoirdupois system with the pound equal to 16 ounces (the one most people use in everyday life); the troy system with the pound equal to 12 ounces (used by jewelers); and the apothecary system with the pound also equivalent to 12 ounces. In both the latter cases, the ounce is equal to 31.103 grams, but the apothecary ounce is subdivided into drams, then grains, then scruples and the troy ounce is subdivided into pennyweights and then grains.

However, the actual weight of the recovered item was only 53 grams rather than the 113.396 grams that four ounces equals in the avoirdupois system. In both the troy and apothecary weight systems, four ounces weighs more: 124.412 grams. Thus, the weight of the item is actually less, in these three common systems of weights and measures, than marked, if the "4" refers to ounces. Since it does not seem to be in ounces, another possible reference for the "4" was sought, but none was found. In the troy and apothecary systems, 53 grams is equivalent to 1.704 oz. In the troy system it is also equivalent to 34.08 pennyweight. In the apothecary system it equals 13.935 drams. None of these approaches four ounces.

The weight may have been intentionally marked wrong. However, if a merchant was using inaccurate weights, he or she would want the weight to be heavier, so the merchant would get more money for the same weight. Thus, the actual meaning of the "4" and the position of the weight in a system of weights and measures remains unknown.

Commerce may also be represented by the bands of metal found in Phases V and VII. These may have been from barrels or kegs. However, if they were from barrels or kegs, such items could have been used for storage of material on site rather than in a commercial enterprise.

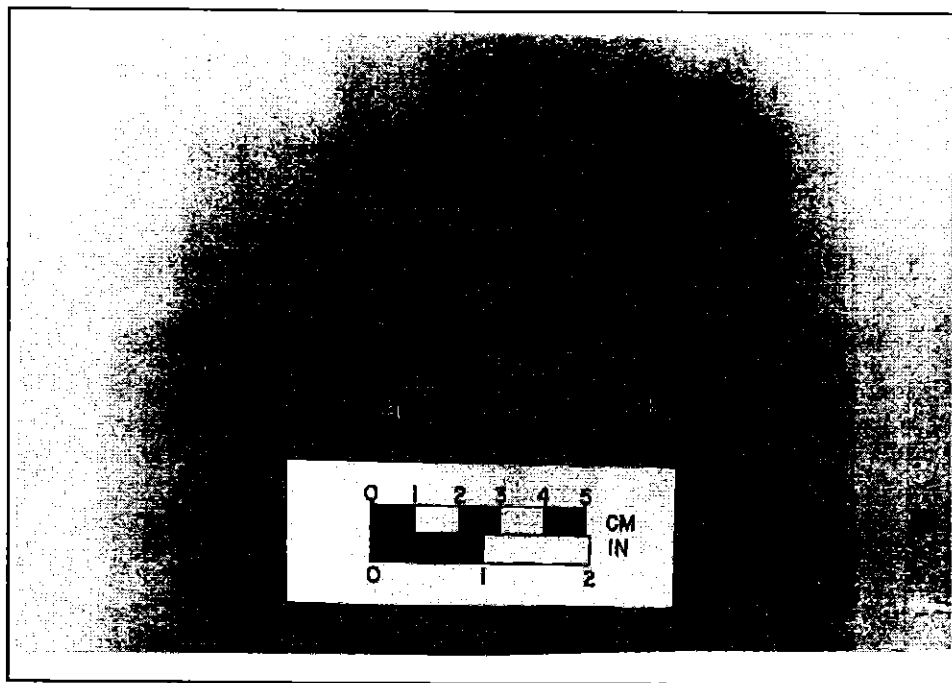


Figure X-47 -Crucibles from Phases IIb and V. (a) Phase IIb, 29641, (b) Phase V, 31766.

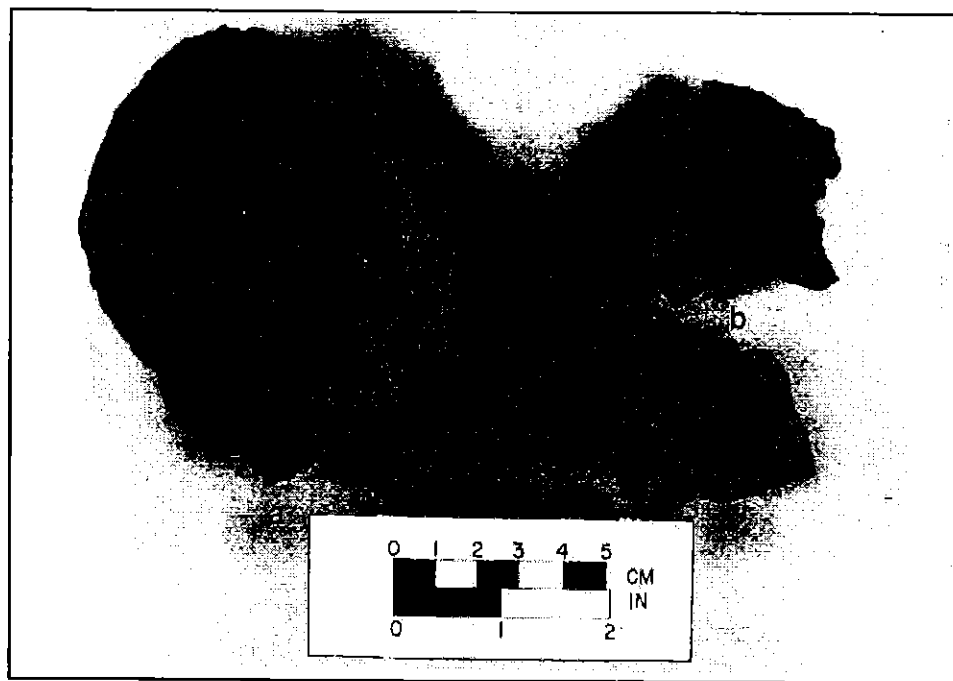


Figure X-48 - Crucibles from Phase III: (a) 25068, (b) 25064, (c) 25067.

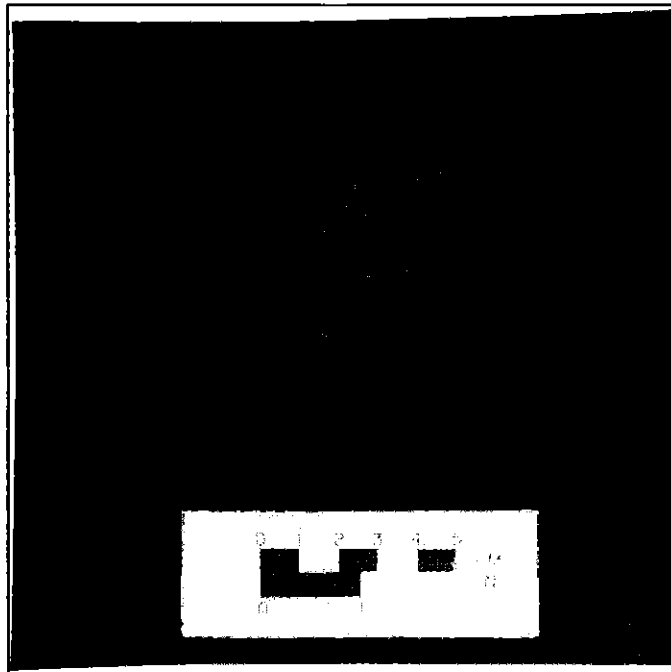


Figure X-49 - Crucible from Phase IV: No. 25060.

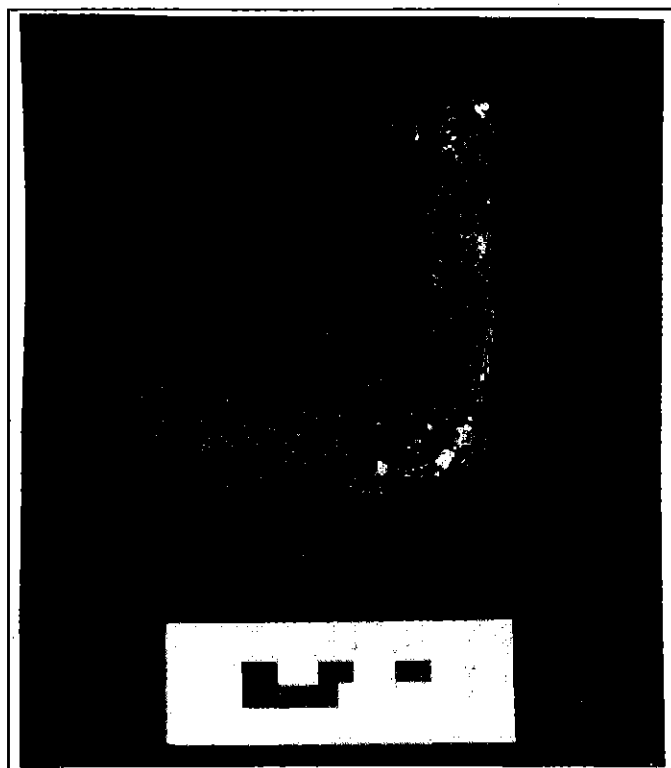


Figure X-50 - Crucible from Phase IV: No. 25061.

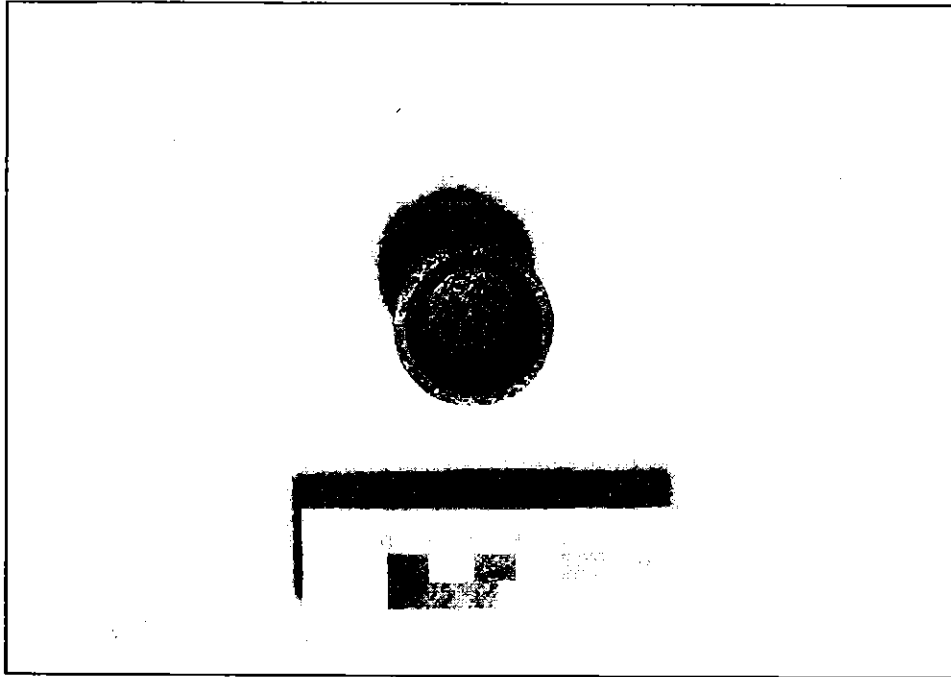


Figure X-51 - Cuprous nested weight from Phase II: No. 24830.

Only one slate pencil, indicative of education or writing was recovered. It came from Phase VI in the Early Republic period.

Very few toys were recovered. One clay marble was found in Phase IIa and another in Phase VII. A broken piece of delft pottery had been smoothed into a circle and probably functioned as a gaming piece. A small brass bell was found in the Phase VI deposit. It was "bell shaped" with a flaring bottom rather than the enclosed rumbler or sleigh-bell form. Its clapper was missing. The function of the bell is unknown. It was placed in the activities group because it could have been a toy or part of a toy.

Lighting was represented only in Phase IV by one sherd of lamp chimney glass.

Gardening is represented by flower-pot fragments and two iron spade shoes. The flower pots were restricted to the Early Republic phases: III, IV, and VI. A flower pot also appeared in Feature 34 in Charlestown, dated about forty years earlier.

Two spade shoes were found, one each in Phases III and V (Fig. X-52). In the seventeenth and eighteenth centuries the wooden blade of a shovel was often shod with an iron blade. The iron shoe would have a slot into which the end of the wood blade would fit. The wood and iron are bound together by two iron arms that go up the side of the wooden blade and which were attached to the blade by flanges with holes for nails (1970:274-275). A contemporary illustration from the middle of the seventeenth century shows both wholly metal-bladed spades and others of the type represented by the artifacts at Mill Pond (Noël Hume 1979:146).

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While Hume says that he has not found any spade shoes in sites firmly dated after 1700 (1969:275), these two shovels come from deposits that date from the late eighteenth century in Phases III and V, the Early Republic period. It seems this shovel was in use much later than he reports. Although unlikely, it is possible that these could both be redeposited fill items from earlier periods.

Artifacts associated with water control included the wooden pipe and stone plunger (Fig. X-53) of the well from Phase X. It also included the bricks and wooden cross pieces associated with the drains in Phase VI, but none of these was distinctive in and of itself, but only as to their combination into the drain features.

Boat making may be represented by the copper nail found in Phase IIa (1) in the Colonial period. This was a wire nail, however, while most boat nails were square. Eight additional copper nails, all square cut, were found in the Early Republic phases: Phase IV (2), Phase VI (2), and Phase VII (4). That only one was found in the Colonial period may indicate casual loss or minor repair episodes rather than extensive activity. The copper nails in the Early Republic phases may have been brought in with fill since the Mill Pond was filled before these deposits were created.

Shoemaking or leather working was probably represented by the leather scraps found scattered in both the Colonial period and Early Republic period phases. However, the largest number of scraps (44) was in the Mill Pond land fill, Phase IV; none of the other phases had more than seven fragments.

There were also a number of miscellaneous metal items that could have been tools or parts of other items: Phase I (1); Phase IIa (1); Phase II (2); and Phase V (3). One of the Phase V items was classified as a pike/halberd. This is late for such a weapon and the item may in reality have been parts of any number of other tools.

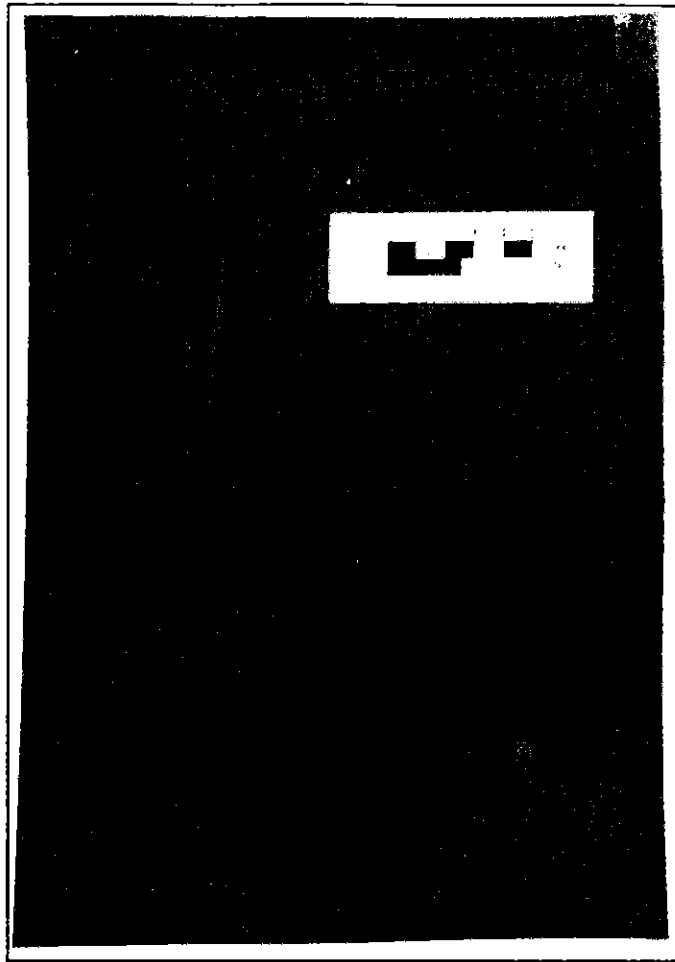


Figure X-52 - Iron shoes for wood blade shovels from Phases V and IIIb: (a) Phase V, 24866, (b) Phase IIIb, 24868.

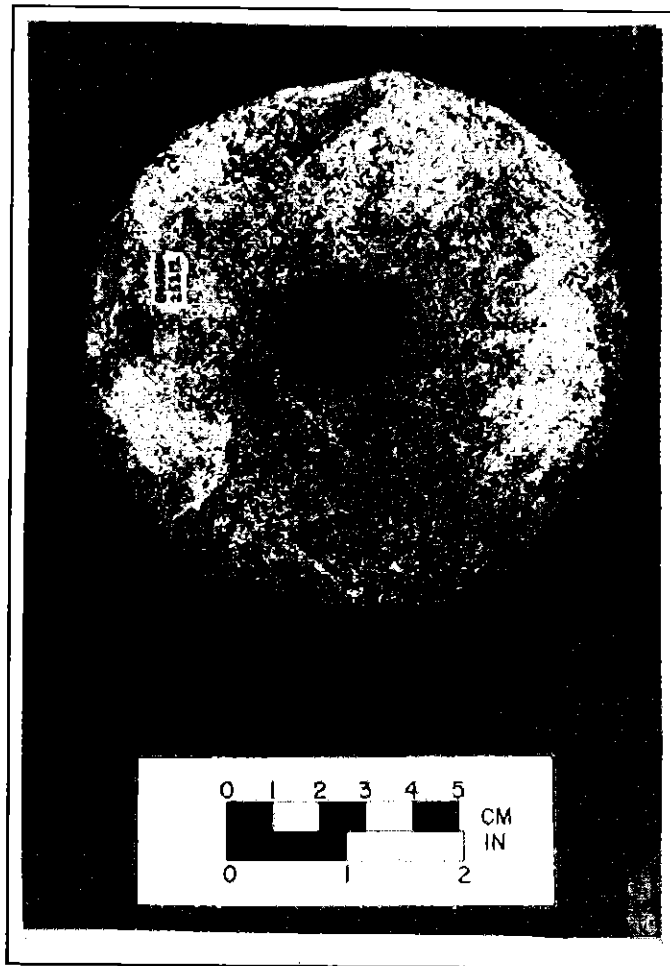


Figure X-53 - Stone plunger from Phase VII well: No. 25212.

B. Foodways

Three issues will be addressed under this section. The first is the cultural antecedents of the foodways indicated at the site. Did the ethnicity of the majority of the settlers in New England affect the foodways they brought with them, can these be differentiated from those of other colonies in North America, did these distinctions disappear over time? The second issue is food procurement. The third is food preparation and serving.

The majority of the data used to address these issues is derived from the faunal data and the minimum vessel counts for selected phases. Also included, however, is information from the inventories of Eustis, Maycock, and Jackson. Given both the limitations of the budget and the data needs of the faunal analysts, only bones from Phases I, III, IIIa, V, and IV were analyzed for age data. On the basis of the preliminary assessment of the nature of the phase deposits, several phases were also selected for the minimum vessel analysis. These included Phases I, IIa, IIb, II, and V. The Mill Pond fill, Phase IV, was also selected. Phase II/III originally had not been selected for this treatment but was included later because, as the artifact analysis proceeded, the phase was identified as a period that was otherwise absent from the deposits on the site.

The identification of the function of the vessels was done according to a POTS model (Beaudry et al. 1983). Vessels were classified into categories based on the terms used by the colonists rather than those used by later historic peoples, archaeologists, or antique collectors. Although the POTS terms were derived from probate inventory and other documents in the Chesapeake area, they were also applicable to the forms found in Boston. In

the lab, vessels were identified on the basis of a combination of the POTS system and that developed by the Alexandria Archaeology laboratory. All terms were translated into the POTS system before final analysis, but were not changed in the catalogue. In tabulating the forms, if the analysts did not have a large enough piece to decide between two forms, they listed the two forms with a slash between them. For consistency's sake, these were counted with the first of the potential forms.

The major problem in comparing forms from different sites is whether one is comparing the same things, especially when dealing with locally produced wares and in the pre-pearlware period when there was more variation in vessel form in general. The lack of specific criteria for the definition of forms, probably because they seem obvious, is a hindrance for comparison. This will become a greater problem as interregional comparison becomes more common and different bodies of common archaeological knowledge and procedures are compared to one another. The development of the POTS classification for Chesapeake vessels (Beaudry et al. 1983) is a step in the right direction. Pendery's illustrations with form names are also useful (Pendery 1985).

1. Ethnicity and Regional Foodways

As stated in the research design, Fischer (1989) has defined four regional cultures from England that emigrated to the American colonies: the Puritans from eastern England; the Cavaliers from southern and western England; the Quakers from the Midlands along with the German pietists; and the Scotch-Irish or Borderers from the border of England and Scotland, sometimes by way of Ireland. He lists a series of differences among each group in the regional customs that they brought to America that were then blended with other cultures and that changed in response to the New World.

That such local customs from the homeland should have persisted is neither unexpected nor unusual and historians have remarked on it (see Breen 1980:3-24;68-80;1984). The transfer was made particularly easy in New England because the immigrant population was composed of more families than, for example, that of the Chesapeake region, and did not suffer the same mortality rates as did those of other regions (Anderson 1991:3,18-26; see also Greene 1988). Breen, however, has remarked that the attempt to maintain their previous way of life led the colonists to deviate from it in ways that made them a distinctive "charter society," to which others, their creole descendants and later immigrants, had to adapt their behavior (Breen 1980:68-80; 1984:35).

These distinctive charter societies in the British North American Colonies began to change and develop a shared cultural identity in the first half of the eighteenth century. Deetz calls this period a "re-Anglicanization" and suggests that it may have occurred by the end of the eighteenth century when, based on impressionistic evidence, ceramics from Plymouth become similar to those from Philadelphia (Deetz 1973:34). Breen suggests a series of forces which brought about the homogenization of Anglo-American cultures and created "larger, racially defined 'creole' societies" (Breen 1984:221-223). One of these was a factor Deetz mentioned in his discussion of Plymouth ceramics (1973), the reassertion of English authority. Others included the various wars with France, which created a common enemy, the mid-century religious revival which broke down local cultural boundaries (also mentioned by Turnbaugh [1983:12-13] as a factor possibly stimulating change in ceramic traditions), striking increases in intercolonial commerce, and the spread of the consumer revolution. Breen points out that none of these five factors existed in the previous century (Breen 1984:223). The two factors of Breen's five that can be addressed by archaeologists are the intercolonial trade and the development of the consumer revolution, which increasingly standardized the material culture of the colonists. Steen (1990) has started to examine the spread of Colonial redware and the consumer revolution can be tracked by the development of Staffordshire pottery which Breen suggests can be looked at as the "Coca-Cola" of the eighteenth century (Breen 1984:222). In addition, archaeologists can examine the material culture of different regions and compare them to evaluate the kinds of differences which exist between regions.

Fischer's comments on the various cultural behaviors of what Breen calls the charter societies, however, emphasizes the staying power of a number of these regional traits, some of which he extends into at least the nineteenth century.

Foodways are one of the traits that tends to remain relatively stable because it is associated with an individual's everyday life from childhood.

This stability in foodways is reflected in recent research in England that has identified three historically-based regional traditions in food preparation that were distinctive enough in the twentieth century that storekeepers had to maintain somewhat different stocks of cooking equipment in each region. These different food-preparation tendencies included frying in the south, boiling in the north, and baking in the east. Of course, all of these techniques exist in each region but are blended together differently (Fischer 1989:138).

The food traditions in New England came with the settlers from East Anglia in the eastern portion of England and there was little change in their basic diet through the first century of settlement, although it did change in the succeeding years (McMahon 1985:137; *passim*). In New England the basic meal was a meat stew or pottage served with bread, pudding, or cake, all of which but the stew needed to be baked (McMahon 1985:134). Other basic dishes included johnny cakes, hasty pudding, grain porridge and gruels. Furthermore, the literature of the nineteenth century extols the joys and virtues of the New England pie (Fischer 1989:138). On the other hand, Virginia cuisine was highly seasoned and characterized by fricassees (meats simmered in the skillet with spices) with much roasting, simmering, and frying (Fischer 1989:371). Bushman in discussing Colonial food quotes the *Boston Newsletter* for 1728 on the "middle-class" diet: bread and milk for breakfast and supper; with pudding, bread, meat, roots, pickles, vinegar, salt and cheese for dinner (Bushman 1992:74). Bushman also suggests that the "peasants" in the Philadelphia area subsisted primarily on grain semiliquid dishes like porridge and gruel. This contrasts to New England with their emphasis on pease (peas) porridge and baked beans (Fischer 1989:136), although porridge and gruels were obviously part of their diet as well.

The New England foodways are also said to be "extraordinarily impoverished" given the richness of the native flora and fauna (Fischer 1989:137). Johnathon Winthrop, when impelled to eat oysters and wild duck, wrote to his wife that "we are here in paradise, though we have not beef or mutton" (in Fischer 1989:137). At least part of this monotony was due to the Puritan aesthetic, which associated plain cooking with piety (Fischer 1989:135) and part was due to attempting to reproduce their ancestral diet from England. Even Robert Byrd, the famous planter of Virginia, complained of having to eat too much oysters and geese when away from home, although Virginia gentlemen had a definite taste for native game (Fischer 1989:349).

Much of Fischer's discourse on the emphasis on baking and the monotony of the New England diet is based on anecdotal, though reasonable, evidence. Furthermore, Fischer does not have sufficient evidence to differentiate rural from urban New England, which may be important. For example, it is reported that in Colonial times passenger pigeons were so plentiful they sold for a penny a dozen in Boston (Earl 1974:110). Fish were also available and cheap in 1740, with fine cods, smelts, and salmon available (Earl 1974:123). The recent archaeological data from Boston can be used to examine if the material evidence of foodways reflects a greater emphasis on baking in New England than elsewhere and whether New Englanders had less variety in their diet.

a. Baking

Four vessel types, as illustrated in Pendery (1985:73), have essentially the same form and could have been used for baking. Using his terms and form types, the four forms are the platter, the pudding pan, the bread pan, and the milk pan. The bread and pudding pans are most likely to have been used for baking. The platters may have been used for serving as well as preparing food and could have been used for pies. Milk pans were used primarily for separating cream from milk.

All of these types have the form of an inverted truncated cone and generally have a flat rim. However, platters and milk pans are relatively shallow with the milk pans being wider; the pudding and bread pans are relatively deep, with the bread pans being slightly narrower than pudding pans. The bread and pudding pans and platters fit into Beaudry et al.'s "pan/pudding, pastry, patty, etc." type and the milk pans into the "milk pan" type (Beaudry et al. 1983:36). The POTS classification differentiates pans into two forms on the basis of size. Milk pans are defined as

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10 in. or more in diameter (Beaudry et al. 1983:35); all other pans are lumped together as "pan/pudding, patty, etc." and will, when being compared to milk pans, be called "other pans." Since most redware vessels are not reconstructible, the rim diameter is the only dimension that can be measured and in this report the 10-in. diameter is used to separate milk pans from other pans. Thus, it is difficult to determine if vessels are deep like pudding and bread pans or shallow like milk pans and platters. The ceramics from the Narbonne site have some good examples of reconstructed deep pans that were probably used for bread or pudding (Moran et al. 1982:Fig. 4-1).

Table X-2 shows the frequency of pans and milk pans for Boston and neighboring Charlestown (Ch.) sites. All pans except milk pans have been added together since a further subdivision of pans is seldom practical. The numbers vary, being most frequent in Feature 32 from Charlestown at 23.5% but range generally from zero to 6.4%. Milk pans on the other hand are less frequent, ranging from 0 to 3% with one provenience having 5%. This comparison assumes that the analysts of the different collections used 10 in. as the break point for pans and milk pans. Janowitz (1993) says she uses POTS, but Pendery does not discuss the issue.

Table X-2. Percentage of milk and other pans in selected assemblages from the Boston area.

Provenience	Milk Pans		Other Pans		Total Pans		N ¹
	#	%	#	%	#	%	
I	--	--	1	2.9	1	2.9	34
IIa	3	5.3	--	--	3	5.3	46
IIb	--	--	2	4.3	2	4.3	57
II	1	2.9	1	2.9	2	5.8	30
II/III	3	2.1	9	6.4	12	8.5	141
V	1	0.7	3	1.2	4	2.6	151
IV	6	3.6	--	--	6	3.6	169
Faneuil Hall	8	1.3	17	2.7	25	3.1	635
Ch. Feature 32	1	2.0	22	23.5	23	45.0	51
Ch. Feature 34	2	2.1	4	4.3	6	6.4	92

¹The total number of vessels minus the unidentified vessels.

Overall, other pans are more frequent than milk pans in five of the ten assemblages in which they appear together. They are absent in two others, IIa and IV, and tied in one. Thus, in the proveniences in which milk and other pans both occur, other pans are always more frequent; however, they were absent from two assemblages.

Although the frequency of other pans is relatively low, it is necessary to compare them to assemblages from other regions to assess whether they are more frequent than would be expected in Colonial sites in general. However, comparative data are not that common and there is the issue of the comparability of rural and urban settings. Yentsch has prepared a table for the frequency of ceramic dairy utensils for urban and rural sites on the Atlantic seaboard (1991b:Table 1). Because of the lack of specificity in the classification systems used at many of the sites, many of the data are not comparable except in a general way. The number of redware food preparation/kitchen/food storage/dairy/milk pan & pans/milk pans in over 30 urban/urban periphery and over 20 rural sites shows that urban sites probably have lower percentages of milk pans than rural sites. Not surprising, but important to verify. The redware data gathered by Yentsch show that milk pans or related vessels range from 0 to 19% in urban/urban periphery sites; of the 13 in which milk pans are separated from other redware vessels, most are under 4%, two are 8 or 9% and two are over 10%. The rural sites range between 2 and 22% but only one is under 5%.

Several sites in the Chesapeake region do yield more precise information on redware forms, classifying vessels into functional types before lumping them into more general functions. At the rural sites at Governor's Land in Virginia, milk pans are 9 to 30% of the total assemblages from pre-1680 to a site dating from 1750-1775 (Yentsch 1991b:Table 4). This contrasts strongly with the milk pan percentages in Table X-2, which are generally between 0 and 5%. However, only one of the Governor's Land assemblages had any other pans than milk pans. Other types of pans were 6% of the 1740-1760 assemblage, or three out of 65 vessels. This is comparable to the Boston area sites, but the rest of the Governor's Land assemblages, with from 50 to 276 vessels and no other pans, seems more typical of this site and probably the region.

A similar pattern is seen at Kingsmill Plantation in the same region of Virginia. Here the list of forms (W. Kelso 1984:Table 5) does not differentiate among different kinds of pans and only milk pans are illustrated (W. Kelso 1984:Fig. 130). Further, the inventory of James Bray, III from the mid 1740s lists only milk pans (W. Kelso

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1984:209-211). If one assumes that all the pans are milk pans, they range from 14.9 to 4.3% in the seven sites which date from the middle of the seventeenth century to the late eighteenth century. This is comparable to but slightly less than the range at Governor's Land.

In the middle colonies, the coarse earthenware assemblage from Franklin Court, dating to the middle of the eighteenth century in Philadelphia, has been classified in a partially comparable manner (Bower 1985). No other pans were identified in the material from the Franklin Court privies, although pudding pans were identified in documentary sources (Bower 1985:Tables 15.1 and 15.2). Milk pans are at 1.5% (of 260 vessels), in the same range as that found at other urban sites. Bower also reports the presence of "dishes" both decorated and undecorated. The decorated ones, listed as "striped dishes," have basically the same form as pans (Bower 1985:Fig. 15.2) and presumably the "plain glazed" ones have a similar form. Dishes are 10% of the assemblage. If one assumes that the decorated dishes were not used for baking and the undecorated ones could have been, then the percentage of dishes with a pan form would be 6.2% among the coarse earthenware, which would presumably be less if the entire collections were considered.

However, other Philadelphia data, from the Bourse garage excavations, suggests that these "dishes" may actually have been more common in Philadelphia. Once again, the lack of descriptive data on the attributes used for classification limits the interpretation, but the percentages of these forms are suggestive. The analysis of six privies, dating from the 1720s to 1780, includes "pie plates" and "milk pans" in the vessel form tables. "Pie plates" are comparable to the "dishes" identified by Bower. In any case, the use of the term "pie" suggests they were used for baking. The pie dishes represent from 0 to 13% of assemblages ranging in size from 70 to 316 vessels (Blomberg 1990:Tables 4, 7, 10, 13, 16, 19). The milk pan percentages are similar to those of urban Boston, from 1.7 to 2.8% with the exception of 8.9% from the late eighteenth-century Feature 11. The "pie plate" pan percentages are in the same range as other pans in Boston and suggest that the importance of baking was similar in Philadelphia and Boston.

Although comparable data from New York were not reviewed, Janowitz, who has analyzed a number of large collections from New York Colonial sites, has remarked that the Faneuil Hall material contains deep pans that she has never seen in New York City sites (Janowitz 1994). Such deep pans were those like the bread-pan forms that were recovered from the 1790s and 1800s pit from the Narbonne site.

The evidence of interregional differences does separate Chesapeake sites from Boston. Although this is comparing a rural to an urban setting, it is difficult to imagine a reason why rural families would not bake pies and urban families would. Comparison with New York collections has not been extensive, but the presence of deep forms for baking in Boston and other New England sites and not in New York suggests that regional differences in foodways, or at least the technology for implementing foodways, did exist. On the other hand, the data from Philadelphia suggest that baking in pans was as common there as in Boston. Research so far does suggest that there are regional differences in ceramic cooking equipment between Boston and the Chesapeake and Boston and New York. However, additional research with comparative collections is probably necessary in order to address this question more fully.

b. Variety in the Diet

The faunal analysis of the Mill Pond, Paddy's Alley, and Cross Street Back Lot Sites demonstrated that domestic mammals played the largest role in the meat diet of the colonists (see Appendix C by Joanne Bowen and Gregory J. Brown). Bowen and Brown identified a basic pattern of meat consumption based on biomass estimates that held true from the seventeenth century on.

Cattle were always the most important meat sources, with sheep/goat (most probably sheep) and pig contributing lesser but still substantial amounts to the diet. Birds, especially domestic birds, were eaten commonly, . . . , but they were not a major meat contributor Fish were

increasingly important after the first quarter of the eighteenth century, while reptiles and amphibians were hardly eaten at all (Appendix C :33).

However, the variety in the diet does seem to be limited and there is a "general sense of sameness throughout the century" (Appendix C:96). Wild foods, including fish, birds and mammals, were typically used in small percentages to supplement the diet of English colonists from the middle of the seventeenth century (Appendix C:20). Fish generally consisted of less than 1% of the total biomass and the number of species identified was limited. Deer is the only wild mammal apparently consumed for food, except possibly the squirrel in Paddy's Alley III (1700-1720). As with other English Colonial assemblages from the eastern seaboard, only small percentages of deer bone are found in these Boston sites (Appendix C:20). Deer are identified in Paddy's Alley II, III, VII, Cross Street Back Lot V, and Mill Pond IIIa, all but the first two of which date after 1750. Only three kinds of fish (cod, haddock, and sturgeon) appear. There is a larger variety of wild birds, including Canada goose, brant, mallard duck, the diving duck or porchard, bufflehead duck, common merganser, red-throated loon, killdeer, willet, heath hen, passenger pigeon, and doves.

More interesting, however, is the fact that there seems to be an increase in the use of wild species -- fish, bird and mammal -- during the period from 1720 to 1780. The five assemblages before 1720 are all under 0.4% of wild fauna biomass with the exception of Phase I at Cross Street Back Lot, which has 1%. The seven assemblages with analyzed bone between 1720 and 1780 are all higher, 0.7 to 1.5%, with the exception of two phases with lower percentages: Paddy's Alley Phase V, which is a construction phase, and Mill Pond Phase V. There are few assemblage after this time, but the percent of wild fauna again seems to decline.

Two reasons could explain this increase in the middle two quarters of the eighteenth century. The first is a combination of the increase in the population and the general decline in the economic well-being of the people of Boston (Warden 1970:102-104; 121; 127-128). Fish, it has been noted, has traditionally been a food of the poor (Oliver 1994 as referenced in Appendix C:46). If the people of Boston wanted to maintain their traditional diet, it is possible that wild foods could have been considered as a lower class of food. The low frequency of wild foods in Mill Pond V could result from the wealth of the combined Maycock/Jackson/Vose households. If this were true, the 0.7% of wild foods in the Mill Pond Phase IIIa may not have come from the lot itself but have been fill from another location.

The other explanation is that the developing provisioning system for the urban market in Boston made these foods, especially fish, more available to a wider population (Appendix C:45). The generally small percentages may not be meaningful and may represent individual decisions rather than a general trend. In addition, wild foods may have become desirable to the wealthy inhabitants of the town, following the customs of the upper classes in Britain. However, this does not explain the decline of such foods in Phase V.

The faunal material from Faneuil Hall from the 1730-40 period reflects a paucity of wild species, a result at variance with the interpretation of the faunal remains from the homes of various artisans. No deer are found, and squirrel is the only wild mammal. Three kinds of fish (cod, sturgeon, and tautog), plus unidentified fish and lobster were tabulated. Wild birds included duck, fly catcher, goose, gull, pheasant/grouse, passenger pigeon, sandpiper, and unidentified. Turkey was also found. The gull, sandpiper, and fly catcher are represented by only a few bones and may be natural inclusions rather than food sources. The variety of fish may be greater than indicated because of the large minimum number of units (MNU) of unidentified fish bone. Cod is the most identified fish element and the unidentified elements are about three times more common (Pipes 1993:Table IX.6).

Pipes notes that the faunal assemblage at Faneuil Hall is less diverse than several New York City assemblages. Rothschild (1990) has summarized data from a number of New York sources, perhaps the most important being Balkwill and Cumbaa (1988), which supports this interpretation. Rothschild's time periods are grosser than those at the Boston sites or those for the Philadelphia or Virginia sites. Her first three periods relate to the time covered by the Boston sites: Period I is 1624-1700, Period II is 1701-1760, and Period III is 1761-1820. The first two periods include species such as deer and squirrel, some turtles, a larger variety of birds (18 wild species in Period I and 10 in

Period II), and a much larger variety of fish (12 species in Period I and 10 in Period II). Wild mammals are gone by Period III, but wild birds and fish continue important (12 species of birds probably used for food and 20 species of fish). This compares to seven species of bird and six of fish in Boston. Furthermore, the use of fish in New York was much greater than in Boston. In Period I, fish accounted for 22% of the number of individual bone fragments (NISP), in Period II they were 17%, and in Period III they were 19%. Fish and birds were such an important part of the diet that a majority of the NISP were wild species (Rothschild 1990: Tables 5.2, 5.3). On the other hand, in Boston, only four of the 25 phases had fish NISP percentages over 10% and only two of those were over 20%.

Since diversity is tied to sample size, it should be noted that the sample sizes from the Boston sites are fully as large as or larger than those from the New York sites. The Faneuil Hall collection alone is particularly large. The total number of bone fragments is 8,555 (Pipes 1993:Table IX.5) compared to the NISP of 7,250 in the Period II and III New York collections studied by Balkwill and Cumbaa (Rothschild 1990:Table 5.2). Furthermore, the Minimal Animal Unit (MAU) number in five sites in New York is 968 (Rothschild 1990:Table 5.10), while in the Faneuil Hall collection it is 4,201 (Pipes 1993:Table IX.6). The smaller diversity in a larger sample size at Boston is an indication that the finding is real and not a result of sample sizes.

Pipes suggests that the diversity in the diet and the prominence of fish is the result of ethnic dietary preference (Pipes 1994). She suggests that the different histories of the two colonies, with the diverse population including the Dutch in New York, accounts for the differences.

In a number of privies in Philadelphia, at the Bourse Garage site, the available faunal data are presented by counts (NISP) and weights of bone (Holt 1990). The counts (minus the shell) can be compared to the Boston sites. Two privies from the 1720s and 1730s and two from the 1780s were studied. The overall pattern of the diet is similar to that from Boston, with domestic animals, especially cattle, providing the majority of a diet that is supplemented by fairly extensive use of birds. The wild food component of these assemblages is different from that in Boston, both in percentage and in composition.

In the two early privies (Features 6 and 10) unidentified fish, bobwhite, pigeon, pigeon/dove, duck, raccoon, and opossum are found. These compose 14 and 16.5%, respectively, of the diet as represented by the NISP. The percentage of wild food in the two later privies (Features 11 and 20) declines to 6.1 and 3.8%, respectively. The same species are represented as in the earlier privies with the addition of goose, turtle, and squirrel. It should be noted that Feature 20 has only pigeon, duck, goose, and squirrel and that no deer was included in any assemblage.

The percentage of wild food in the diet of the Philadelphians, as represented by the two early eighteenth-century privies, is much higher than that found for the Boston sites. Although the research on the sites was not able to tie the contents of the privies to specific households, this area of Philadelphia seems to have been occupied by artisans, among others. The two late privies have percentages more similar to those of the late privies from Boston. The crucial data are from the early privies, which show a much higher percentage of wild foods than those from Boston, even though the percentages from Boston were going up at the same time.

In the Chesapeake, the data from Kingsmill suggest yet another pattern in the use of wild resources. The earliest provenience, the Kingsmill tenement, dating to the middle of the seventeenth century, has the highest percentage of wild resources at 38% of the total number of elements (NISP). For the period 1680 to 1710, the percentage drops to a range of 2.6 to 5.5%, depending on the provenience, at the Pettus site, which has a larger sample size. In the 1730s and '40s, under the Bray ownership, the range is approximately the same: 1.2 to 6.6% with a slightly smaller sample size. However, the number of wild resources increases in the 1760-1790 period with the wells at the two plantation houses having 11.9 and 15.6% wild resources, and a slightly smaller sample size. The percent of the estimated pounds of meat follows the same trend (W. Kelso 1984:Appendix C). Thus, after a period of heavy use of wild resources early in the occupation of the area, use of wild resources dropped to a level below that of the slightly later sites in Philadelphia. However, the use of wild resources rose in the last half of the eighteenth century unlike the Philadelphia pattern.

In summary, some aspects of the faunal remains from the Boston sites are very similar to those of other sites of the English colonies on the eastern seaboard. European domestic mammals are the dominant meat item, supplemented to a greater or lesser degree by wild mammals, wild birds, and fish. The percentages of wild resources in New York, Philadelphia, and Virginia are all higher than those in Boston, even when considering the period of increased use during the middle of the eighteenth century. This suggests that the inhabitants of Boston really did have a narrower diet than the residents of the other colonies. The difference does not seem to be due to a rural/urban dichotomy, either, since in both Philadelphia and New York wild resources contribute more to the diet than in Boston.

2. Food Procurement

Various authors have addressed diet and procurement of food for the residents of the city of Boston (Bower n.d.:111-124; Friedman 1973; Marten 1980; McMahon 1985). This information is reviewed by Bowen and Brown in Appendix C to this report (pages 38-43) and integrated into their discussion of the food provisioning system for meat in Boston, based on the analysis of the Central Artery/Tunnel Project faunal remains.

A brief summary is appropriate here. The researchers derived evidence from the study of the bones that showed that the meat provisioning system underwent a gradual change from a face-to-face system to one of increasing specialization and centralization in both husbandry and butchering. This conclusion was supported by a study of the proportion of age groups and body parts in the faunal remains of the major domestic animal groups. Cattle bones, particularly, showed these trends.

Bowen and Brown assumed that animal husbandry at the end of the seventeenth century was part of a non-specialized farming economy and that Boston residents, although the city had a population of around 6,000 people in 1690 (Henretta 1970:53), still had a provisioning system that entailed direct relations with the producers of the meat.

The parts of the carcasses of cattle, pig, and caprines, primarily sheep, revealed a gradual centralization in body-part distribution. When butchering is done at a central location, heads and feet generally remain behind and the meatier portions of the animal are taken to market. Thus, the ratio of body parts found in a domestic site deviates from what it would be if the animals were raised and slaughtered by the householder.

The data relating to body-part ratios show that a small, face-to-face system of exchange was in operation during most of the eighteenth century. The production of pigs seems to have been the least affected, since the entire carcass was still available throughout much of the century, with little change in the proportions of the body parts (Appendix C:99).

Sheep, on the other hand, became a focus of specialization rather early. The ratio of body parts to each other is biased against those portions of the body that look lifelike, such as the head and feet. This relates to a trend in food preference that was occurring during this time and is reflected in Boston regulations in the last half of the eighteenth century that prohibited the display of legs with attached feet of lambs and sheep (Appendix C:97-99). Thus, most people bought their sheep from other people in the market whether or not there was a formal structure called a market in existence.

The system for the production of cattle shows the most change. The number of cattle head and feet declines approximately 30% over a century (Appendix C:98, 100). Sawn bone, an indicator of centralization of the butchering industry, occurs only on cattle bone towards the end of the century. Most animals were still being butchered with the cleaver.

Within a non-specialized economy, farmers produced cattle for a number of purposes and therefore slaughtered them primarily when they were very young or very old. When specialization for meat production occurred, the cattle were killed at the optimum age for producing meat, between the ages of 18 and 24 months.

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During the 1700 to 1720 period, many young and old individual cattle bones were found discarded in the deposit (Appendix C:50). From 1720 to 1740, the number of young animals increased, the middle age grades disappeared, and the number of older animals dropped. The 80% of bone in the young age group is similar to that found in late nineteenth-century kill-off patterns, when specialization was firmly established (Appendix C:50).

Another indication of specialization is the increase in the amount of veal, including calves' heads, found during the 100-year period in the three sites. The increase in veal consumption indicates that dairying was also a major pursuit, with its steady production of excess calves.

In summary, changes in the small-scale systems were apparent by the 1730s, although much of the earlier organization remained intact through the greater part of the eighteenth century (Appendix C:97). Boston's population was growing toward its pre-Revolutionary peak of 16,000 in 1740 (Henretta 1970:53), creating new demands on rural production. One result was the centralization of the slaughter and distribution of meat for the city inhabitants and the beginning of specialization in meat production.

Earlier in this report, there was discussion of exactly what is meant by the term "truckman," the occupation given for Maycock, Jackson, and Vose. No definitive answer can be provided yet. However, the word "truck" today refers to the produce from small market gardens, truck gardens, that specialize in providing fresh vegetables to a city's occupants. "Truck" had the meaning of goods produced by the farmer by at least 1832 in Massachusetts and New England in general. Early manufacturers provided a portion of their laborers' food and other necessary supplies, like firewood, as part of their wages; "truck" was valued at as much as 50% of their wages (Clark 1990:234). This meaning may have been in use around Boston in the early nineteenth century, when Vose was in business, and perhaps earlier. It is possible that the need to supply the townspeople with the necessities led to the development in the mid eighteenth century of middlemen who were not simply carters or hucksters but who centralized and distributed the necessary "truck" for the city.

3. Food Preparation and Serving

a. Food Preparation and Cooking

As discussed above, the number of milk pans expected in urban environments is low. This is not surprising, since as the century progressed from 1700 to 1800, farming activities and the attendant food processing and preparation were drastically reduced within cities. During the period from 1690 to 1740, Boston's population went from 6,000 to 16,000 and then declined to 15,000 until after the Revolution. By the 1770s, the farms of the South End had disappeared, the central business district became more crowded, and house lots that formerly had space for gardens had been subdivided and held more houses (Henretta 1970:50,53). However, some milk pans would have been necessary in urban households, which still separated cream from milk and made their own butter (Derven 1994).

Table X-3 shows the number and percentage of the minimum vessels across the phases. The vessel types are arranged according to the POTS system. It should be pointed out that the punch-bowl category is separated in this study from the other bowls on a simple dichotomy based on wares. If it was a coarse ware, it was placed in bowls; if it was a refined ware, it was placed in the punch-bowl category. The term "punch bowl" works well for the seventeenth century and the early half of the eighteenth century, for which it was designed, although some of the vessels so classified were undoubtedly used for eating semiliquid foods. After the Revolution, other foodways came into vogue, which eventually eliminated drinking from punch bowls, so that bowls became smaller and were used primarily for foods (Carson 1990:55-56).

Table X-3. Minimum vessels by phase.

Vessel	I		IIa		IIb		II		II/III		V		IV		N
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	
Indeterminate	9	30.00	24	42.11	7	17.95	18	52.94	53	37.59	20	13.25	18	10.65	149
Cup			5	8.77	2	5.13	4	11.76	15	10.64	10	6.62	20	11.83	56
Mug	5	16.67	9	15.79	9	23.08	11	32.25	30	21.28	19	12.58	15	8.88	98
Jug	4	13.33	8	14.04	6	15.38	1	2.94	1	0.71	2	1.32	7	4.14	29
Pitcher			1	1.75	1	2.56	1	2.94	6	4.26	2	1.32	3	1.78	14
Bottle			1	1.75	1	2.56	1	2.94	1	0.71	2	1.32	2	1.18	8
Tea Pot			1	1.75							1	0.66	5	2.96	7
SUBTOTAL	9	30.00	25	43.86	19	48.72	18	52.94	53	37.59	36	23.84	52	30.77	212
Punch Bowl	7	23.33	10	17.54	10	25.64	3	8.82	11	7.80	18	11.92	33	19.53	92
Bowl	2	6.67	3	5.26	4	10.26	7	20.59	10	7.09	5	3.31	2	1.18	33
Basin			1	1.75											1
SUBTOTAL	9	30.00	14	24.56	14	35.9	10	29.41	21	14.89	23	15.23	5	2.96	126
Dish			1	1.75			1	2.94	1	0.71	5	3.31	52	30.77	11
Plate	2	6.67	3	5.26			2	5.88	25	17.73	42	27.81	33	19.53	107
Saucer			2	3.51					11	7.80	13	8.61	16	9.47	42
Misc. Lids			1	1.75					3	2.13	1	0.66	2	1.18	7
SUBTOTAL	2	6.67	7	12.28			3	8.82	40	28.37	61	40.40	54	31.95	167
Pipkin	1	3.33													1
Pan	1	3.33			2	5.13	1	2.94	9	6.38	1	0.66			14
SUBTOTAL	2	6.67			2	5.13	1	2.94	9	6.38	1	0.66			15
Milk Pan			3	5.26			1	2.94	3	2.13	3	1.99	6	3.55	16
Pot/Jar	8	26.67	3	5.26	4	10.26	1	2.94	9	6.38	23	15.23	15	8.88	63
Iberian Jar									1	0.71	1	0.66			2
Misc. Lids			2	3.51											2
SUBTOTAL	8	26.67	8	14.04	4	10.26	2	5.88	13	9.22	27	17.88	21	12.43	83
Galley/Ointm			2	3.51					2	1.42					4
Chamber Pot			1	1.75					3	2.13	3	1.99	7	4.14	14
SUBTOTAL			3	5.26					5	3.55	3	1.99	7	4.14	18
Total w/o	30		57		39		34		141		151		169		621
GRAND	39		81		46		52		194		171		187		770

The food-preparation vessels are listed by phase in Table X-4. Pots/jars are the most abundant of the food-preparation and storage vessels, although in the later phases they decline in frequency. Traditional cooking vessels such as pipkins are very rare and the only one identified was in found Phase I. Jugs were included in this table in order to follow Pendery and to allow comparison with the Charlestown sites. Under the POTS system, jugs are drinking vessels rather than food-preparation vessels as classified by Pendery. Percentages were calculated with and without this vessel type. With the jugs included, the percentage of food preparation and vessels in Phases I and IIb approximates the 43% found in Feature 32 in Charlestown. Feature 34 has a mean ceramic date (MCD) 16 years later than that for Feature 32 and is more similar in age to Phase II/III than to Feature 32. The 15% for food preparation vessels in Feature 34 is similar to that of Phase II/III, as well as to the earlier Phase II. The change over time probably reflects more general trends in the use of ceramics, such as the increasing availability of ceramics in general and the replacement of wooden and pewter plates by ceramic ones.

Table X-4. Percentages of food-preparation vessels at the Mill Pond site.

Vessel	I	IIa	IIb	II	II/III	V	IV	Total
Jugs	13.3	14.0	15.4	2.9	0.7	1.3	4.1	29
Pipkins	3.3							1
Pans	3.3		4.3	2.9	6.4	1.2		14
Milk pans		5.3		2.9	2.1	0.7	3.6	16
Pots/jars	26.7	5.3	10.3	2.9	6.4	15.2	15.0	63
Iberian jars					0.7	0.7		2
Misc. lids		3.5						2
N	30	57	39	34	141	151	169	621
Percent w/o jugs	33.3	14.1	28.7	14.5	15.6	17.8	18.6	
Percent w/jugs	46.6	28.1	44.1	17.4	16.3	19.1	22.7	

b. Food Serving

The serving vessels reflect several trends and changes in foodways (Table X-3). There were many aspects of the culture of the American colonists that changed during the eighteenth century, including foodways. The changes in food serving were a reflection of a deeper change in world view that has variously been called the spread of Renaissance ideals or the "Georgian mind set," the spread of capitalism with its emphasis on personal discipline and the individual, or the diffusion of genteel culture (see Deetz 1977, Bushman 1984, Leone 1988, and Shackel 1993). Cultural values, capitalism and the Georgian mind set all led to an emphasis on the individual that was revealed in artifacts and resulted in changes in material culture to express the individual and family position in the new social context.

Historians and archaeologists (for example, Yentsch 1991a, Bushman 1992, Shackel 1993) have demonstrated that the eighteenth century was a time of great change in the foodways and material culture of the Colonial population. There have been numerous probate studies that show the gradual spread of the markers of the new cultural orientation. These markers became embedded in the wealthier population first and then gradually penetrated into the middle classes and below.

This process was uneven and irregular. Every study shows that there was a transition period of significant length in the acceptance of the new material items in New England (Pendery 1987), in the Middle Atlantic (Bushman 1992), and in the Chesapeake (Shackel 1993). Because of the transition period, there were different systems of dining in effect at any one point in time and often within the same wealth group. The reasons for the existence of the transition were varied and were partly generational, but also there was resistance to the acceptance of this behavior. This process of transformation in eating habits continued well into the nineteenth century (Carson 1990). With this

in mind, consider the archaeological information on the distribution of the ceramics and utensils used for eating and the information on furnishings from the probate inventories of Eustis, Maycock, and Jackson.

Several trends in the consumption of beverages occurred during this time. The first was a shift in the way traditional beverages, beer and cider, were drunk. Rather than being drunk out of a common pot, individual tankards and mugs came into use, becoming a major component of the ceramic collection in the eighteenth century. At the Mill Pond site, mugs by themselves reached a peak of 32% in Phase II, with percentages in the twenties and then the teens both earlier and later in the phases on either side of Phase II (Table X-3). When jugs are added, Phase I, IIa, IIb, and II are all over 30%, Phase II/III is at 21% and Phases V and IV drop below 15%. Thus, the forms that represent the drinking of traditional beverages are abundant in the pre-1760 period and begin to drop off immediately before the Revolution and continue at that level or lower into the next century. In the two features from Charlestown, mugs are 17 and 21% in the earlier and later features, respectively, approximately the same as the mug percentages for Mill Pond in that time range. When jugs are added, the percentages rise to 21 and 23%, about the same as Phase II/III.

New beverages were added to the English and Colonial diet in the late seventeenth century. These included punch, tea, coffee, and chocolate. Punch was accepted more quickly than tea among the gentry, as well as the regular population, partially because tea was a distinctive drink that had no English antecedents. Punch, being wine-based, had antecedents in both wine and other wine-based drinks and was accepted by the end of the 1600s, at least as revealed by archaeological records of the Chesapeake (Yentsch 1991a:50-51;Fig. 9).

In Boston, punch-bowl percentages were in the high teens and low twenties up to Phase IIb (Fig. X-3). In the succeeding phases, punch bowls were below 10%, until Phase V and IV when they increased again to 12 and 20%. This late rise is deceptive, since 66% of the "punch bowls" in Phases V and IV were in creamware and pearlware, 73% of which were 6.5 in. or less in diameter, compared to only 41% of the refined-ware bowls in the early phases (Table X-5). The larger size bowls would have been used for the communal punch. The percentages for the three earliest periods were similar to those of Chesapeake sites for the 1680-1720 period (Yentsch 1991a:Fig. 9). Bowl frequencies in the two Charlestown sites are more similar to Phase II/III in that they have lowered percentages. Feature 32 did not have any bowls and Feature 34 had only 11%.

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Table X-5. Bowl diameter by phase and ware group.

Bowl Diameter	Early Phases Refined Wares		Late Phases Creamware and Pearlware	
	#	%	#	%
≤ 6.5 in.	7	41	11	73
< 9 in.	7	41	2	13
≥ 9 in.	3	18	2	13
	17	100	15	100

The Mill Pond punch bowls occurred only in tin-glazed, Staffordshire, Jackfield-like, and Chinese porcelain wares in the pre-Phase V period. The Staffordshire forms may have been used for other purposes. Over 65% of the bowls were tin-glazed in the assemblages between 1690 and 1730. Only 10% were Chinese porcelain. In Phases IV and V, 48% were pearlware and 18% creamware for a total of 66%. Without these wares, assuming that they were not replacing the tin-glazed bowls but being used to serve other food items, the number of bowls continued to decline to 11 and 3% in Phases V and IV.

An alternative interpretation assumes that at least some of the creamware and pearlware bowls were used for punch and that there was a decline in the use of punch in the middle of the century that occurs during Maycock's residence on the site. If the potential decline in the use of punch is true, it is possible that the decline was related to Maycock's strong religious orientation, revealed in his will, that may have included beliefs about the moral hazards associated with alcohol. Some punch bowls are likely to have appeared on the site even if this was the case, since there were tenants on the property as well.

Punch bowls were found earlier and in higher percentages than teawares in the early eighteenth century, according to the archaeological evidence from the Chesapeake (Yentsch 1991a:Fig. 9). Table X-6 shows the appearance of teawares by phase for Boston sites. The earliest teapot recorded was in Phase IIa during the time the site is thought to have been occupied only by tenants. The sherds came from a white salt-glazed stoneware vessel. However, such wares are not known to have been made before 1720 (Noël Hume 1969:114). It seems likely this item is intrusive, since it came from a layer through which a drain trench was dug. If this item is excluded, as is done in Table X-6, the earliest teapot was in Phase V, which was relatively late. Three lids that probably come from teapots or sugars or creamers were recovered from Phase II/III. The lids were made of a refined redware (Fig. X-22), Chinese porcelain, and pearlware. The latter, however, is considered intrusive and is not included in this table. Five teapots of various materials were found in Phase IV.

Table X-6. Distribution of teawares at Boston sites.

	Cup	Saucer	Teapot	Lid	Total Teaware	%	N
I	0	0	0	0	0	0	30
IIa	5	2	0	0	7	12.2	57
IIb	2	0	0	0	2	5.1	39
II	4	0	0	0	4	11.4	35
II/III	15	11	0	2	28	19.3	140
V	10	13	1	0	24	15.9	151
IV	20	16	5	2	43	25.4	169
Faneuil Hall ¹						7.6	635 ²
Ch. Fea. 32	4	1	0	0	5	9.8	51
Ch. Fea. 34	2	11	1	0	14 ³	15.2	92

¹Summary tables VI.2-5 not broken down by vessel form; total includes cups, saucers, teapots, and porcelain and white salt-glazed bowls.

²Total number of vessels minus unidentified forms.

³Does not include eight tea bowls that would bring the overall percentage to 23.2%.

Other indicators of the use of tea, cups and saucers, are more common. Except for Phase I, which has neither form, cups vary in frequency between 5 and 12%, with the highest frequencies being in Phases II, II/III, and IV, all of which are fill (Table X-3). Phase IIa, a fill, has the highest frequency of cups, although Phase V is only two percentage points lower. Saucers also appear in Phase IIa but not in I, IIb or II. Their frequency in the three late phases maintained a fairly consistent percentage of occurrence between 7.8 and 9.5% (Table X-3).

Teaware first appears in the second decade of the century, in Phase IIa. This phase is composed of the fill of the wharf and a living surface on the land over which fill was also placed. Phase II, which is fill, also has a relatively high teaware percentage. Phase IV has the highest percentage, as would be expected from its late date. The second highest frequency in Phase II/III suggests that tea drinking was well established in Boston by the third decade of the eighteenth century and probably by the second decade as represented by Phases IIa and II percentages, which are over 10%.

In summary, teaware and tea drinking appear to have been integrated into middling and upper class society in this section of Boston by the second or third decade of the eighteenth century. The percentages of teawares in this period approximate those found in Phase V. It is assumed that tea drinking was widespread by the Revolution.

There was probably differential acceptance of tea drinking within Boston, as may be indicated by the relatively low percentages of teawares for Faneuil Hall and Charlestown Feature 32, both below 10%, and by the 5% for teaware in the Phase IIb deposits. By the 1740s, however, as represented by Feature 34 from Charlestown, and Phases II/III and V from Mill Pond, tea drinking seems to have become established at around 15%. Teawares in some Chesapeake sites tended to vary considerably with social standing in the 1720s and '30s. A tenant family had less than 5% teawares; a planter had over 20%; and Maryland's Governor Calvert had almost 50% of his ceramics as teawares (Yentsch 1991a:Fig. 9). The planter's economic position in the Chesapeake, while not the same, may be most similar to that of the Boston artisan in the different regional societies.

In association with the changes in beverages came changes from folk to courtly eating, meal preparation, and food serving (Yentsch 1991a). In the early part of the occupation of the Mill Pond site, the standard eating equipment at meals was wooden trenchers and/or pewter plates along with ceramic drinking vessels. Some delft or tin-glazed plates were also used, most often for display (Deetz 1973:28-29). During the eighteenth century, ceramic plates began to replace pewter. At the Mill Pond site, the dividing line between the early food serving complex and the

later one seems to occur during and before Phase II/III in the 1720s and 1730s. After that period, plates are more than 17% of the assemblage. Before that phase, plates do not rise above 7% in most other early phases and are missing entirely from Phase IIB.

The plates at Mill Pond were typically made in either decorated tin-glazed earthenware, plain or combed Staffordshire, buff-bodied earthenware, or North Devon sgraffito. In Phase II/III, the same wares, with the addition of white salt-glazed stoneware, appeared as plates. In Phases V and IV, the plates were dominated by creamware and pearlware which were two to four times more abundant than the earlier wares.

The two assemblages from Charlestown also fit this pattern. The earliest, Feature 32, slightly later than Phase II, had almost 10% plates. The later one, Feature 34, with 16.3% plates, had almost the same frequency of plates as Phase II/III. The percentage of plates and dishes at Faneuil Hall was very close to that of both Feature 34 and Phase II/III at 16.1%.

The comparative material from the Chesapeake suggests that the change to the use of ceramic plates occurred, perhaps a little earlier than in Boston, at least among the elite. The provincial governor's house site in Virginia between 1680 and 1710 had 10.4% plates, more than the Boston sites (Yentsch 1991a:Table 2). The c. 1730s site of the governor of Maryland had 19.3% plates (Yentsch 1991a:Table 3), very similar to the percentage from Phase II/II at 18.4%. The change in the middling and lower levels of society may have come at about the same time or slightly later than in Boston if data from shopkeepers' inventories in other regions can be projected into the archaeological record. These records show a gradual transition, first from pewter to various early and mid-eighteenth century ceramic wares, and then from both kinds of plates to creamware in the 1760s (Martin 1994).

As expected, and as reflected in the archaeological record, the probate inventories of the owners of the Mill Pond property reflected the shift to ceramics plates by the 1770s as well as the presence of teaware at the same time. The earliest of the available inventories is the 1723 Eustis probate inventory. The archaeological record would suggest that Eustis' trash is associated with Phase IIB or possibly Phase II. Phase IIB has no plates or dishes and the lowest percentage of teawares with the exception of Phase I, which has none. The Eustis inventory has no ceramics listed and therefore no teaware or plates. John Eustis was an old man when he died, and, as a housewright, belonged to the middle levels of the society. His lack of teaware may be partially explained if he, as a member of an earlier generation, held to an earlier way of eating and drinking. These phases, IIB and II, have the lowest frequency of ceramics at the site, lower even than I and IIA, and Phase IIB has the lowest teaware frequency and no plates. The lack of ceramics in the inventory does not necessarily mean that Eustis had none at all, but probably means that what he did have was small in quantity and not considered worth inventorying. Obviously, somebody deposited ceramics on the site. It could have been Eustis' tenant or in landscaping fill from elsewhere. Eustis had a considerable amount of pewter, documenting his participation in the earlier custom of using pewter for serving food when one's income allowed it.

Both the Maycock and Jackson inventories were taken in the 1770s and reflect some of the changes that were taking place in the food-serving system. Maycock's inventory included china plates, cups and saucers, six more (probably china) cups, a teapot, slop bowl and miscellaneous other pieces. He also has a tea kettle and a coffee pot. Maycock, however, still has 60 items of pewter. The kind of pewter items is unstated.

Maycock's son-in-law, Jackson, who died only a few years after Maycock, had many more ceramics than did Maycock. These included a "burnt" (possibly Batavian?) china bowl and plates, blue-and-white china plates, china dishes, butter plates, saucers, pater pans, bowls, a mug, a teapot, cups and saucers, coffee cups, delft plates and dishes. Interestingly, Phase V, the assemblage thought to have been deposited by these two households and by a tenant household, had a relatively low percentage of ceramic teawares, although it had three times the frequency of teawares found in Phase IIB and attributed to the Eustis occupation (Table X-6). A further indication of a major change in dining and consumption habits is that Jackson no longer had pewter in his inventory. This was obviously not due to a low economic position for Jackson since he, with a number of slaves in his household, was obviously closer to the upper levels of Boston society than his father-in-law.

A change in the use of utensils accompanied the change in the way meals were served. In the early eighteenth century, spoons and knives were used instead of forks, which were not yet common. Bushman notes that in Europe

spoons did not come into general use until the sixteenth century and that the recommended eating utensils for immigrants to the northeast in the early seventeenth century were spoons and bowls; plates and forks were not mentioned (Bushman 1992:75). Forks were used in Boston by the end of the seventeenth century, but were rare; only a gentleman's inventory listed a fork in 1721. Forks became more common in the colonies in the 1750s and 1760s. For example, between 32 and 57% of the decedents in a three-county study area in Delaware and Pennsylvania had knives and forks in their inventories by mid century. In Massachusetts, 50% of the inventories had forks as late as 1774. In the Chesapeake in general, the percentage of forks was somewhat higher; perhaps as many as 75% had forks (Bushman 1992:77). For example, in Anne Arundel County, Maryland, forks were present in all the wealth groups that had probate inventories from 1688 to 1777. In the earliest period, 8% had forks and the percentage increased by 20% every 20 years until 1777, reaching 63% of all inventories. By the 1733-54 period, 16% of the lowest wealth group had forks in rural Anne Arundel County (Shackel 1993:Table A7). In Annapolis itself, forks were present in 11.8% of the inventories from 1688-1709, rose to 42% in the next 20-year period and stayed between there and 54% till 1777 (Shackel 1993:Table A23).

Both the archaeological and the probate-inventory evidence are tentatively interpreted to mean that the residents of the Mill Pond property were not on the leading edge of the general trends. Unfortunately, the inventories do not cover the crucial mid-century period and neither do the archaeological deposits, with the exception of Phase II/III and possibly part of Phase V. Spoons were recovered from Phase II, which is probably a fill and therefore may or may not relate to the site's inhabitants of that period, the young Maycock family. The only fork was recovered from the IIIa deposit, dating to 1795, Vose's occupation, and although utensil handles were found in other phases, the kind of utensils they represent is unknown.

The Eustis inventory did not record any utensils, although he did have 64 oz. of silver plate, which could have included utensils, especially spoons. It is not surprising that Eustis does not have forks, since his inventory is early in the century, when not even all gentlemen had or used forks, as Bushman has remarked. This is in marked contrast to Anne Arundel County and Annapolis where 8 and 11.8% of the rural and town-dwelling inhabitants, respectively, were already using forks.

Maycock, who died late in the century, in 1771, also did not have any utensils listed, although he had china and delft plates as well as other ceramics and a variety of furniture and cloths used in dining. (His inventory was particularly difficult to read, and thus a listing for forks may have been illegible.) He also had silver that could have included utensils. Jackson's inventory, on the other hand, listed a case of knives and forks. This may represent the difference between two generations in their response to the changing cultural setting.

In summary, it seems as if the segment of the population that deposited the archaeological material at the Mill Pond site did not accept certain components of the spread of gentility as fast as did their counterparts in the much smaller city of Annapolis. That this may have been true for Boston as a whole may be supported by the collections from Faneuil Hall, which included six spoons, two knives, and no forks (Maczaj 1993:Table X-3). Pendery also does not list any utensils for the Charlestown sites, although one item of "kitchenware" in Feature 34 could be such an item (Pendery 1987:Tables 5.1 and 5.2). The absence of forks in the archaeological deposits could also be due to deterioration; a fork's tines are thin and easily corroded. However, the lack of such items in the inventories as well suggests that only a small segment of the population of Boston and Charlestown was regularly using forks until after the middle of the seventeenth century.

C. Wealth, Status, and the Spread of Gentility

The examination of wealth and status at this site is difficult because of the nature of the collections: the secular trends in the frequencies of many classes of artifacts, the multiple households of presumably different wealth and status living on the lot, the fact that the archaeological site is in the stable yard rather than at the back of either the mansion house or the rental property, and the problem of comparative data from local sites. The inventories are clear that Maycock had a larger estate than did Eustis, and Jackson had a larger estate than his father-in-law

Maycock. Although the probate for Vose is not as detailed, he was probably richer than any of his predecessors. There are several signs of this, including the fact that he kept a carriage and had a farm or house in Dorchester.

Furthermore, there is a theoretical question of whether one should expect to see more money spent on consumer goods among the upper, middle, or lower classes. The Rutmans, in a study of Middlesex County, Virginia during the Colonial period noticed that as rural householders recognized that they were not going to be able to develop real wealth through the purchase of land, they spent money on consumer goods. In this case it seemed that beds spread throughout the county as acreage went down (Rutman and Rutman 1984:125). The converse of this observation is that those with real wealth and investments to keep up spent less on consumer goods. Given the differential in the level of wealth between the highest and the lowest groups, the wealthier people probably spent more absolutely, but perhaps not proportionately, on consumer goods.

Pendery examined the Rutmans' hypothesis as it applied to a set of probate records for Sussex County, Massachusetts (Pendery 1987:81-113). He concluded that the ratio of mean percentage of expenditures for consumer goods to the probate value shows that in some years the bottom wealth group had more consumer goods than the top group and in other years the ratio was reversed (Pendery 1987:113). In the 1660s and 1690s, the decedents at the bottom of the scale spent a higher percentage on consumer goods. In the 1720s, the top spent more; but by 1750's the bottom spent more again. Several consumer items seemed to be good predictors of membership in the upper ranks of wealth, including slaves and furniture. The highest 5% of the decedents had furniture that included beds, as well as other household items like earthenware, tea and coffee wares, and silver. On the other hand, relatively "useless" consumer goods, such as gold buttons, silk clothing, and silver spoons, which were rare in the upper wealth groups, were more common in the lower levels of society (Pendery 1987:Tables 4.8, 4.10, 4.15). These data partially support the Rutmans' hypothesis and indicate a complex relationship between consumption and wealth. It may also indicate that the individuals that owned such items were using them as a part of a strategy to increase their status in society.

In the Chesapeake, on the other hand, a recent review of probate records for Anne Arundel County, Maryland, indicated that there were very few reversals of the expected pattern of consumer spending behavior, either for the rural residents of the county or for the urban residents of Annapolis. In almost all cases the higher wealth brackets had more of the more expensive consumer items (Shackel 1993:Appendix). However, this study was based on presence and absence rather than on the value of consumer goods as a percentage of probate value. Although an extensive comparative analysis of the relative position of Eustis, Maycock, and Jackson in the economic hierarchy of Boston was not part of the scope of the project, Nash (1979) has collected data that can be used to identify their general position. Nash has divided decedents from 1685 to 1775 into four wealth groups: the poorest 0-30%, next 31-60%, then 61-90%, and the richest 91-100% (Nash 1979:Table 7). Once the estate values are translated into pounds sterling (Nash 1979:Table 7), Eustis falls near the upper end of the 61-90% group. Maycock and Jackson fit into the same category. Thus, these three households were in the top 40% of the households in Boston as measured by their probated wealth. Their wealth may have been spent on consumer goods, although the fact that Maycock established a trust fund of £1200 may indicate that he had not spent much on such items.

The only ceramic ware that is known to have been particularly expensive in the eighteenth century is Chinese porcelain, with the polychrome overglaze vessels being more expensive than the blue-and-white underglaze vessels. Using minimum vessel counts rather than sherd counts, the phases with the two highest percentages were Phase II, a fill, and Phase V, an occupation deposit (Table X-7). Phase II/III, also probably a fill, had the next highest. Phase II may have been deposited by Eustis, although more probably by Maycock; Phases II/III and V were deposited during the tenure of Maycock, Jackson, Vose and their tenants.

Table X-7. Percentage of Chinese porcelain vessels and sherds by phase.

PHASES	VESSELS						SHERDS					
	Underglaze		Overglaze		Total		Underglaze		Overglaze		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
I												
IIa												
IIb												
II	6	11.3	2	3.8	8	1.5	10	1.6	4	6.4	13	2.2
II/III	8	4.1			8	4.1	12	3.0	3	0.8	15	3.8
V	9	5.3	4	2.3	13	7.6	41	2.7	6	0.4	48	3.1
IIIb							1	1.3	1	1.3	2	2.5
IIIa							3	0.8	1	0.3	4	1.0
III							28	3.8			28	3.8
IV	11	5.9	1	0.5	12	5.4	18	1.9	7	0.7	25	2.6
VI							43	3.8	4	0.4	47	4.1
VII							7	5.7	4	3.3	11	9.0
Faneuil Hall												
Total	34		7		41		163		33		196	

The percentage of Chinese porcelain vessels in Phase II was 15.1% (eight vessels) and that phase had the highest proportion of overglaze wares (2), although the total number of vessels was lower. The next highest percentage was in Phase V at 7.6% with 13 vessels, four of which were overglaze decorated. The percentages for both Phase II and Phase V are greater than the percentage of porcelain in Faneuil Hall that, at 4.6%, was essentially the same as in Phase II/III (4.1%). Phase II/II, however, had no overglaze vessels. Of the 39 vessels in the Faneuil Hall collection, only six were overglaze or otherwise not simple blue underglaze decorated: a lower percentage of the total than in Phases II and V at Mill Pond. Thus, compared with the generalized fill from Faneuil Hall, the households that deposited the Mill Pond Phases II and II/III may have been spending slightly more on expensive ceramics than the people who contributed to the Faneuil Hall deposits.

Vessel counts for porcelain were available for only four phases. When considering sherds rather than vessels, the two latest phases, Phases VI and VII, had the highest percentage of porcelain and overglaze sherds. These Early Republic phases occurred after the China trade had opened up to the Americas. In the Colonial phases, the percent of porcelain sherds never rose above 4%. In the six Early Republic phases, the percentage was higher in only two of the phases, being lowest in Phase IIIa and highest in the fill for the stable courtyard floor at 9%. The low percentage of porcelain in Phase IIIa is congruent with the relatively high percentage of wild food as representing a family at a lower income level than the Maycocks or Voses.

Another indicator of wealth and the desire for status is the degree to which households bought into the cultural standards of the Georgian mind set. Such behavior is both an explicit demonstration of acceptance of the dominant

ideology and an implicit demonstration of a household's actual commitment to the ideology of capitalism and consumption.

The available archaeological information on this issue from Mill Pond has already been reviewed. The evidence from the artifacts representing foodways indicates that the individuals who deposited the material from the occupations at Mill Pond and Charlestown lagged behind those in at least certain parts of the Chesapeake. Other information came from a comparison of the Mill Pond occupants' inventories with those from Anne Arundel County in Maryland for those items that are considered to represent a move toward both gentility and modern personal discipline. For comparative purposes, we will use the two upper wealth levels of those living in Annapolis during two periods: the 1710-32 period can be compared the Eustis inventory, and the 1755-1777 period can be compared to the Maycock and Jackson inventories (Shackel 1993:Appendix).

The Eustis inventory contains only three of the items considered by Shackel to represent gentility and modern personal discipline: napkins, sets of chairs, and a close stool. These are items present in between 30 and 50% of the Annapolis inventories. Other items that were recorded in over 50% of the Annapolis inventories include clocks, forks, knives, and personal grooming items. Objects possessed by at least a quarter of Annapolitans included sets of forks and knives, cups, and saucers, and handkerchiefs. Obviously, the majority of people in Annapolis, like Eustis, did not have these items and had not begun changing from an older to a more modern orientation.

Maycock, in spite of dying almost 50 years later, did not have many more of these items than Eustis did. Maycock's inventory showed the presence of a set of plates and cups and saucers as well as napkins, sets of chairs, a probable close stool. A "chamber table" might be construed as a tea table or dressing table, but it was not further identified in the inventory. This inventory does not compare well to that of Annapolitans and probably not to those of the upper echelons of Boston society, either. Over 50% of Annapolitan inventories had clocks, forks, knives, sets of knives, and chairs. At least a quarter of the inventories had grooming-related items, handkerchiefs, chamber pots, and close stools. Although a probable clock part occurred in Phase II, this deposit seems to be a fill, although it is probably from the neighborhood. As discussed above, Maycock seems to have been of a older generation with an older generation's taste. His lack of consumer goods also may relate to his religious orientation.

Jackson, on the other hand, had 12 of the 15 items listed by Shackel as representing a transition to the culture of capitalism and gentility. He lacked only scientific instruments, held by less than a quarter of the Annapolitans, chamber pots and a close stool. This is not to say that chamber pots were not used on the site. One was found as early as Phase II, post-Eustis, and with the start of Phase II/III, chamber pots are from two to 4% of the assemblages (see Table X-3). The number of glasses (38 wine glasses) in his inventory suggests that Jackson entertained, probably as part of his business as well as in an attempt to signal his desired or perceived status to other individuals in the society. Carson (1990) found that the number of items, particularly as sets of plates and glasses, were characteristic of upwardly mobile individuals who entertained to maintain or increase their social position.

In summary, the archaeological and inventory data suggest that the transition to cultural behavior informed by a Georgian mind set and a consumer culture occurred later in this site than it did in the sections of the Chesapeake examined. Furthermore, as represented in his inventory, it appears only Jackson was interested in social mobility. As more controlled collections become available further explorations of this issue will be possible.

XI. SUMMARY OF CONCLUSIONS

Several issues have been raised and addressed in the preceding chapters. A major theme that has guided much of the study has been whether Fisher's conclusions about regional English cultures carrying their distinctiveness to the New World is correct when viewed from the archaeological record. A second theme has been whether these regional cultures eventually blended together and when this occurred.

Data on foodways, specifically on baking and diet variety, suggests that there were regional differences in foodways that may have continued into the nineteenth and indeed into the present day. There also were regional differences in the speed with which the culture of consumption or gentility or the ideas underlying capitalism spread in the Chesapeake and in the restricted sample of Colonial New England considered here.

This difference in the spread of the culture may be only indirectly due to initial regional differences. The Colonial experience in the two regions was different. "The less stable population (based on demographic variables) in the Chesapeake with its more complex social structure offered greater opportunity for upward mobility while simultaneously creating greater need for social markers of rank" (Yentsch 1991a:52). There is considerable evidence to support major differences in social and population structure, as well as a more even distribution of wealth, among the Chesapeake and Massachusetts Bay colonists (see Fisher 1989) even if they were all ultimately looking for the same goals (Greene 1988). Thus, the more rapid spread of these items in the Chesapeake may have been the result of a greater need to assert social position through material possessions.

The scope of this regional comparison of social and cultural change from an historic archaeological perspective obviously needs more data to support the above conclusions. Additionally larger sets of data for the Middle Atlantic region also need to be included in the comparisons to understand how material culture aided the transformation of a series of regional cultures into a national culture.

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APPENDICES' TABLE OF CONTENTS

Reports of the various specialized studies done for this report are included as appendices to this report, namely, Appendices A through G. These are grouped into a separate volume, Volume II, as listed in the Table of Contents of this volume.

Appendix H is the artifact catalogue and is included as Volume III.

Appendix volumes can be obtained by writing to:

Public Information
Central Artery/Tunnel Project
Massachusetts Highway Department
185 Kneeland Street
Boston, MA 02111

The contents of the appendix volumes as well as the contents of the individual appendix reports are listed in the following pages.

VOLUME II
APPENDICES A-G

ARCHAEOLOGICAL DATA RECOVERY

THE MILL POND SITE (BOS-HA-14)
BOSTON, MASSACHUSETTS

prepared for

Timelines, Inc.
410 Great Road, B-14
Littleton, Massachusetts 01460

and

The Central Artery /Tunnel Project
Massachusetts Highway Department
185 Kneeland Street
Boston, Massachusetts 02111

by

Charles D. Cheek, Ph.D.
Joseph Balicki

John Milner Associates, Inc.
309 North Matlack Street
West Chester, PA 19380

February 2000

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FOR VOLUME II
APPENDICES A-G

APPENDIX A: PROBATE INVENTORIES

Probate inventories from Mill Pond Site (BOS-HA-14) compiled by Barbara Donohue (formerly Putnam) and transcribed by Charles Cheek.

APPENDIX B: STRATIGRAPHIC ANALYSIS

Identification tables for Harris Matrices Nos. 1-427, compiled by Charles Cheek and Joseph Balicki (

APPENDIX C: FAUNAL ANALYSIS

Faunal Remains from the Paddy's Alley, Cross Street Backlot, and Mill Pond Sites, Boston, Massachusetts, by Joanne Bowen and Gregory J. Brown, June 1, 1995 (120 pages text; 7 appendices, 285 pages).

APPENDIX D: POLLEN ANALYSIS

D.1: "Managment Summary Phase III Palynological Data Recovery Pollen Analysis of the Boston Mill Pond Site (BOS-HA-14) Boston, Massachusetts," by Gerald K. Kelso, Ph.D. , November, 1994 (5 pages).

D.2. "Pollen Analysis of the Boston Mill Pond Site (BOS-HA-14) Boston, Massachusetts," by Gerald K. Kelso, Ph.D. , October, 1994 (46 pages).

APPENDIX E: FLORAL ANALYSIS

Floral Remains Mill Pond Site, Boston, by Lawrence Kaplan (12 pages).

APPENDIX F: TREE-RING ANALYSIS

by Gordon C. Jacoby, Tree-Ring Laboratory, Lamont-Doherty Earth Observatory, Palisades, New York, April 3, 1994 (16 pages).

APPENDIX G: FOOTWEAR REPORT

Report: Cross Street (Feature Four) and Mill Pond Footwear, by Jeffrey A. Butterworth. Masters thesis, Department of Textiles, Fashion Merchandizing and Design, University of Rhode Island, July 31, 1995 (111 pages).

**FAUNAL REMAINS FROM THE
PADDY'S ALLEY, CROSS STREET
BACK LOT, AND MILL POND SITES,
BOSTON, MASSACHUSETTS**

by

Joanne Bowen
Gregory J. Brown

Prepared for:

Timelines Inc.
410 Great Road, B-14
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June 1, 1995

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MANAGEMENT SUMMARY

PHASE III PALYNOLOGICAL DATA RECOVERY

POLLEN ANALYSIS OF THE BOSTON MILL POND SITE
(BOS-HA-14)
BOSTON, MASSACHUSETTS

By

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Paleo Research Labs Technical Report 94-35

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POLLEN ANALYSIS OF THE BOSTON MILL POND SITE
(BOS-HA-14)
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October 1994

**REPORT : CROSS STREET (FEATURE FOUR)
AND MILL POND FOOTWEAR.**

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Masters of Science Candidate
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The University of Rhode Island
31 July 1995

REPORT: CROSS STREET (FEATURE FOUR)
AND MILL POND FOOTWEAR

Introduction

About the footwear

- 1) Cross Street (Feature Four)
- 2) Mill Pond

About Jeffrey A. Butterworth, Doug Currie, and Margaret Ordonez

Procedure

Drawing

Photography

Evaluation and Historical Interpretation

Reshaping

Forms

Assembling the Pieces

Final mounting

Recommendations for storage

Results

Individual reports

- 1) 6662 Adult Male Shoe ca. 1670
- 2) 6662 Child's Shoe ca. 1670
- 3) 6405 Child's Shoe ca. 1670
- 4) 6610 Child's Upper ca. 1670
- 5) 6405 Young Adult Shoe (Possibly Female) ca. 1670
- 6) Non-provenience Male Shoe ca. 1800
- 7) 8323 Adult Male Boot 1805-1813

Discussion and Conclusion

What is known about shoes and shoemaking in seventeenth century Colonial America

Table I: Shoe and Leather Timeline

An argument for American origin

The seventeenth century adult male shoe in context

The seventeenth century children's shoes in context

The early nineteenth century footwear in context.

What I have learned (what information these artifacts have brought to light)

Bibliography

Appendices:

- I:** Terminology
- II:** List of extant seventeenth century American provenance shoes
- III:** Photocopies of contextual imagery
- IV:** Slides and Black-and-white proof sheets

**VOLUME III
APPENDIX H
ARTIFACT CATALOGUE
ARCHAEOLOGICAL DATA RECOVERY**

**THE MILL POND SITE (BOS-HA-14)
BOSTON, MASSACHUSETTS**

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