

**A PHASE IIA ARCHAEOLOGICAL STUDY
OLD FORD PLANT SITE
ALEXANDRIA, VIRGINIA**

By

**Janice G. Artemel
Elizabeth Crowell, Ph.D.
Donald A. Hull
Dennis Knepper**

Submitted to:

**Urbco
140 Garden Street
Hartford, Connecticut 06154**

June 1988

**Engineering-Science, Inc.
1133 Fifteenth Street, N.W.
Washington, D.C. 20005**

ABSTRACT

A Phase IIa study of the Old Ford Plant was conducted by Engineering Science, Inc., in June 1988 for Urbco and the Cook Inlet Region of Virginia. The 9.5 acre project area is located in Alexandria, Virginia at the southern end of the waterfront. The objective of the study was to assess the significance of archaeological deposits as well as to determine potential site integrity and boundaries. The study was conducted in coordination with the Alexandria Archaeological Centre, the Virginia State guidelines for archaeological study, and Section 106 of the National Historic Preservation Act of 1966.

Intensive archival research was conducted to provide an overview of the historical development of the property and to predict locations of significant subsurface archaeological resources. Subsurface testing consisted of the excavation of nine backhoe trenches of varying lengths and depths in the undisturbed western portion of the property.

A series of fill layers in the form of twentieth century architectural debris, sand and gravel, and late nineteenth century coal and coal residue deposits was encountered across much of the area tested. The southwest corner of the property contained deep silty fill material, dredged from the river channel in the early twentieth century. Large buried timbers were encountered in four trenches in three different areas at depths ranging from 3 to 7 1/2 feet. While none were readily identifiable as known structural features, due in part to the limited nature of the current work, materials in Trench 1 (Feature 1) were of a size and position expected of the known eighteenth century wharf. It is recommended that, upon the removal of the heavy concrete slab and several associated obstructions, further excavations be carried out to both determine the nature and significance of the deposits located in the present survey, and to determine whether or not other significant deposits remain.

TABLE OF CONTENTS

Abstract	i
Table of Contents	ii
List of Figures	iii
Acknowledgements	iv
I. Introduction	
A. Project Location and Description	1
B. Project Goals	1
C. Environmental Setting	1
II. Cultural History	
A. Prehistoric Occupation and Land Use	5
B. Historic Occupation and Land Use	7
III. Previous Investigations	38
IV. Methodology	
A. Field Methodology	39
B. Laboratory Methodology	40
V. Archaeological Findings	
A. Introduction	41
B. Trench Excavations	41
VI. Analysis of Findings	56
VII. Conclusions and Recommendations	
A. Conclusions	60
B. Recommendations	62
Bibliography	64
Appendices	
A. List of Personnel	71
B. Artifact Inventory	72
C. Keith and Harper's Wharf Deed Abstracts	75

LIST OF FIGURES

1	Project Location	2
2	Alexandria Waterfront in 1979	3
3	West Bank of the Potomac, 1746	9
4	Map of the Site of Alexandria, 1748	10
5	Map of Alexandria in 1798	12
6	Land Ownership in Project Area c. 1800	14
7	Map of Alexandria in 1803	16
8	Map of the Potomac and Anacostia Rivers	19
9	Alexandria in 1845	20
10	General Plan of Battery Rodgers	22
11	Railroad Wharf and Slaughter House	23
12	U.S. Military Railroad Wharf in 1863	24
13	Barge Building of Railroad Wharf, 1863	25
14	Barge Building at Railroad Wharf, 1863	26
15	Construction Activity Railroad Wharf, 1863	27
16	Advertisement for J.P. Agnew & Co. Coal	29
17	Alexandria in 1877	30
18	Alexandria Marine Railway Wharf in 1885	31
19	Construction of Ford Plant in February, 1932	35
20	Construction of Ford Plant in June, 1932	36
21	Construction of Ford Plant in August, 1932	37
22	Old Ford Plant Project Area	42
23	Subsurface Testing Locations: Trenches 1-6 and 9	43
24	Subsurface Testing Locations: Trenches 7 and 8	44
25	Trench 1: East Profile	46
26	Trench 1: Plan View of Feature 1	47
27	Trench 3: Plan View of Feature 2	49
28	Trench 4: South Profile	50
29	Trench 4: Plan View of Feature 3	52
30	Trench 7: North Profile	54

ACKNOWLEDGEMENTS

The following individuals and institutions deserve special thanks for their assistance and cooperation with this project: Mr. Sheldon Crosby, Project Officer with Urbco; the Cook Inlet Region of Virginia; Ms. Stacie Oliver of Arthur Cotton Moore Associates; Espey-Huston Associates; Dr. Pamela Cressey and Dr. Steve Shephard of Alexandria Archaeology and Colonel Bernard Brenman, Chairman and the members of the Alexandria Archaeological Commission.

For assistance with the historical research, we wish to thank T. Michael Miller of the Lloyd House of the Alexandria library; the staffs of the main and the Cartographic and Architectural branches of the National Archives and the staffs of the Geography and Map and the Genealogy and Local History Divisions of the Library of Congress. We would also like to acknowledge the assistance given us by Ms. Leslie M. Simon, Associate Archivist at CIGNA, for her search of insurance records relating to the project area or its owners. Mr. David Crippen, Archivist, and Ms. Cynthia Read-Miller, Curator of Prints and Photographs, at the Henry Ford Museum in Dearborn, Michigan, were also very helpful in establishing the later use of the property.

I. INTRODUCTION

A. Project Location and Description

The project area is a 9.5 acre parcel, located along the south end of the waterfront in Alexandria, Virginia (*Figure 1*). It is bordered on the north and the east by the Potomac River, by Union Street on the west and by Jones Point Park on the south (*Figure 2*). Two large buildings presently occupy much of the site: a mid-twentieth century Federal Government building, and the Old Ford Plant, built by Ford Motor Company in 1932.

In June of 1988, a Phase IIa Archaeological Testing Program was conducted in the project area for Urbco and the Cook Inlet Region of Virginia. The objective of the study was to assess the significance of archaeological deposits, as well as to determine depositional integrity and site boundaries for the sites which have been predicted in the Phase I archaeological survey (Cheek and Glendening 1986) and for any other sites discovered during the course of the Phase IIa program.

The study was conducted in coordination with Alexandria Archaeology in compliance with Section 106 of the National Historic Preservation Act of 1966. The study has followed Federal and State guidelines, including 36 CFR 66, the guidelines developed by the Advisory Council on Historic Preservation, the amended Procedures for the Protection of Historic and Cultural Properties, as set forth in 36 CFR 800, and the guidelines of the Virginia Division of Historic Landmarks.

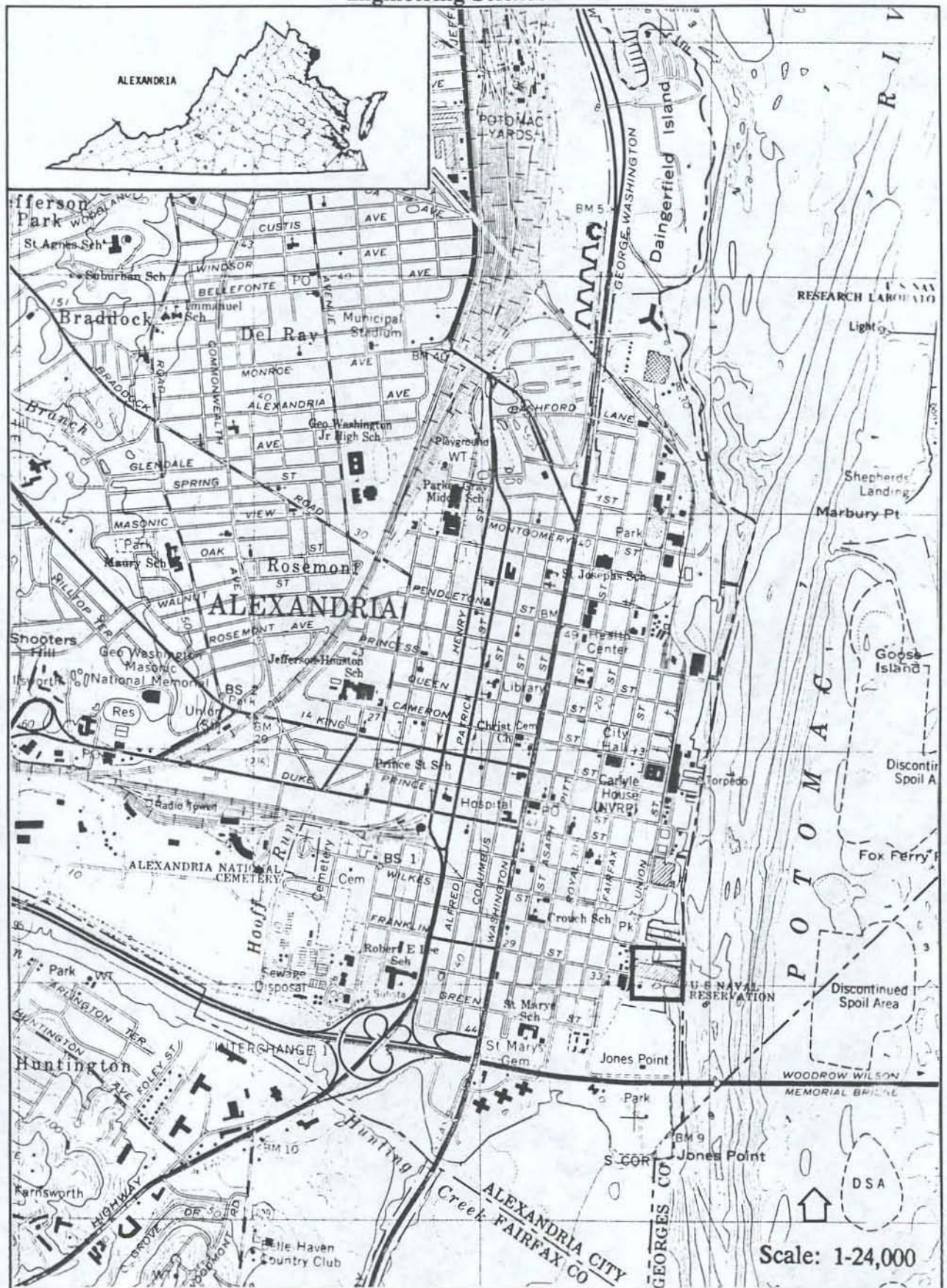
B. Project Goals

The purpose of this Phase IIa Archaeological Study was to determine the archaeological significance of any site on the Old Ford Plant property and to determine the integrity and the horizontal and vertical boundaries of any such site. The goals of the study were:

- i. to determine presence or absence of archaeological sites predicted to be in the project area,
- ii. to identify site integrity and boundaries,
- iii. to interpret these sites in the context of the study area and region,
- iv. to evaluate the impact of construction on the archaeological resources and,
- v. to make recommendations concerning the disposition of these resources.

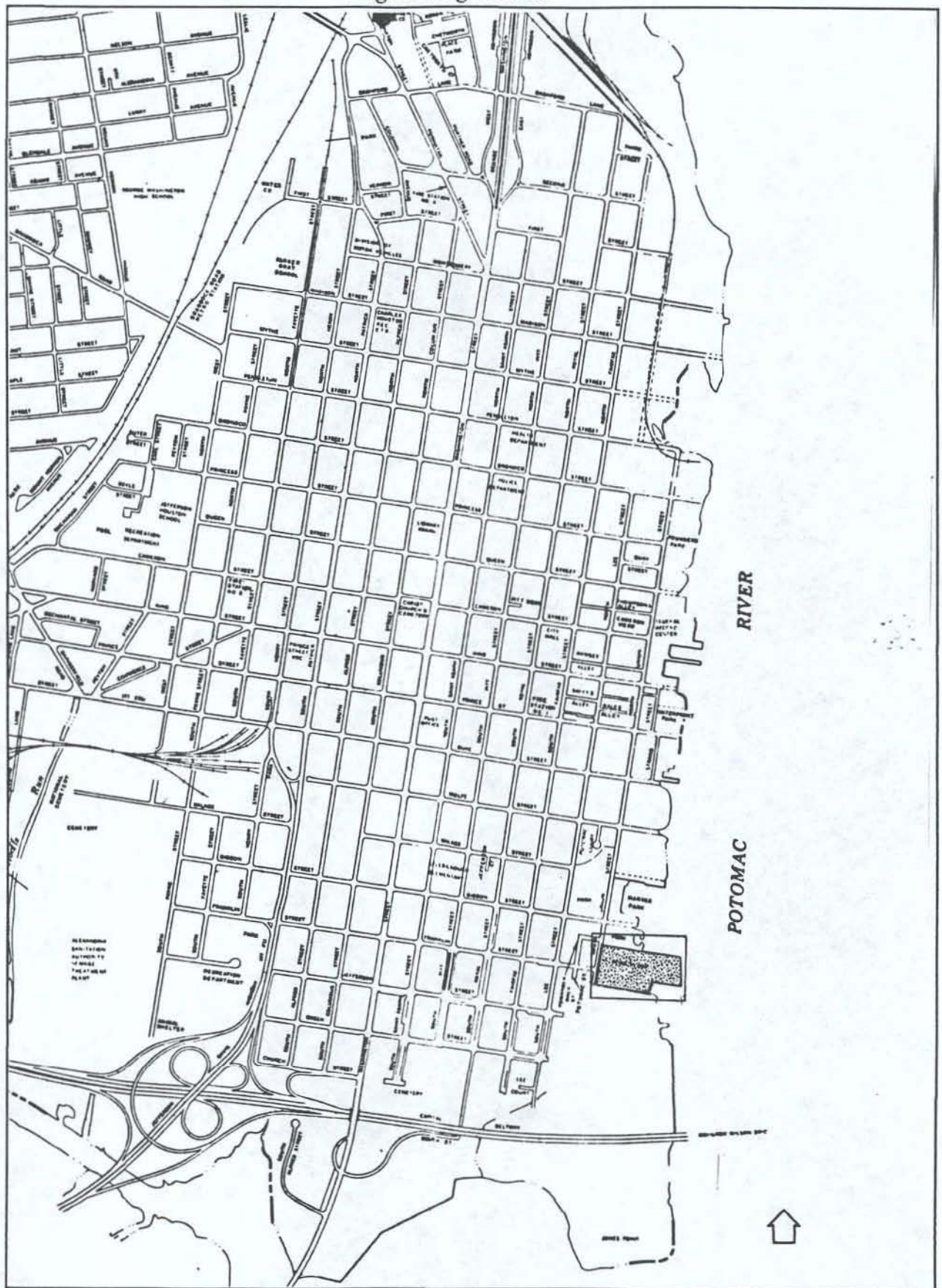
C. Environmental Setting

The project area is situated at the southern end of the Alexandria waterfront on a section of land reclaimed from the tidal flats along the Potomac River. Alexandria lies within the Atlantic Coastal Plain physiographic province, a region of



Source: USGS, 1983

Figure 1
Project Location



Source: Alexandria Department
of Planning and Community
Development, 1979

Figure 2
Alexandria Waterfront in 1979

flat, rolling topography. Geologically the area is composed of subsoils in the form of relatively unconsolidated sands, gravels and clays lying over bedrock of schist or gneiss containing occasional veins or outcrops of quartz. Quartz and cobble quartzite are the main locally available lithic materials, though chert and jasper, in pebble form, are washed down onto the Coastal Plain from the Piedmont uplands to the west, collecting on gravel terraces along major streams.

The primary hydrological force in the area is the Potomac River. Alexandria lies at the extreme northern end of the Potomac estuary basin, approximately eight to ten miles southwest of the fall line which separates the Coastal Plain from the Piedmont to the west. At this location, some 90 nautical miles from the mouth of the Potomac at the Chesapeake Bay, the river is characterized year-round by salinity described as tidal fresh (0.5 parts per thousand) at the surface and bottom. River sediments along the waterfront consist of firm mud and clay, well compacted and mixed with sands and gravels (Lippon *et al.*, n.d.) Increased erosion from farming and rapid urbanization in the Washington, D.C. metropolitan and surrounding areas have contributed to high sediment yields within the Potomac drainage basin, and have augmented naturally changing silt buildup and shoaling in the river. Channel modification, in the form of dredging, along the Alexandria waterfront has been carried out periodically since the late nineteenth century (Shomette 1985).

Alexandria is bracketed by two tributary streams flowing eastward into the Potomac: Four Mile Run to the north, and Great Hunting Creek to the south. While no streams are present within the city itself today, until the mid-nineteenth century a small creek known as Ralph's Gut drained into the so-called "Orinocco Marsh." Described by George Washington in 1748 as "A fine Improvable Marsh," the area was situated along the waterfront at the present Oronoco and Pendleton Streets (Stephenson 1981: Plate 9).

The regional climate is continental along this portion of the Coastal Plain, with well-defined seasons. Meteorological systems generally flow west to east, with summer and fall dominated by tropical air masses originating in the Gulf of Mexico and moving northward, while winter is characterized by cold, dry air streaming out of central Canada. Seasonal extremes are ameliorated to some degree by the presence of the nearby Chesapeake Bay and the Gulf Stream off the Atlantic coast.

The study area consists entirely of made land, reclaimed in several major episodes beginning in the late eighteenth century. As such, there are no natural floral or faunal communities within the area itself, other than the opportunistic grass, insect and rodent populations which flourish in disused urban settings. Directly south of the area, the National Park Service property surrounding Jones Point contains wooded areas with a mix of naturally and artificially seeded hardwoods, such as maple, poplar, sycamore, and elm. But in general, the amount of human alteration to the original soils and habitats in the area have all but eradicated pre-existing vegetation and wildlife.

II. CULTURAL HISTORY

A. Prehistoric Occupation and Land Use

The prehistory of the Mid-Atlantic region, within which the study area lies, can be divided into three main segments: the Paleo-Indian Period (ca. 10,000 B.C. - 7,000 B.C.); the Archaic Period (ca. 7,000 B.C. - 1,000 B.C.); and the Woodland Period (ca. 1,000 B.C. - 1,600 A.D.). These cultural periods represent a taxonomic device, a framework within which to describe the processional changes which have occurred through prehistory. The evidence for their demarcation is derived from transformations in technology, or material culture, as perceived in the archaeological record. Technology tends to be the major focus of archaeological studies because it is the most directly observable aspect of culture which remains, and, along with subsistence, is widely considered to be more completely articulated with the environment than other cultural subsystems. Thus, technological change, as evidenced in artifact variation, can be viewed as an adaptive response to a range of environmental variables (Allan and Stuart 1977). A study of the physical environment and its alterations during the time that the Mid-Atlantic region has been occupied can provide a means of insight into the nature and availability of habitats suitable to prehistoric populations, and thus a background for the description of cultural change.

When Paleo-Indians first entered the Mid-Atlantic some 12,000 years ago, the project area was a freshwater river valley dominated by a tundra and spruce forest. This environment supported the now extinct megafauna which are assumed, through analogy with Clovis and Folsom cultures in the west, to have been a subsistence base for early hunters. Smaller game and a variety of plants were also exploited during this period.

Archaeological sites dating to the Paleo-Indian Period are usually identified by the presence of the characteristic artifact of the tradition, the fluted stone point, often made of high quality lithic material such as chert or jasper. Relatively few sites are known throughout the Mid-Atlantic. It is probable that many of the sites from the period are located on the continental shelf, submerged by the rise in sea level accompanying the melting of the continental ice sheets at the end of the Wisconsin glaciation, ca. 14,000 B.P. (Kraft and John 1978).

Gardner's settlement model for the Flint Run Complex of Virginia may be applicable to the area in general. The use of two zones, floodplains and uplands, is suggested, and sites are assigned functionally to hunting and quarrying with a base camp related to a quarry site. For the central part of southern New Castle and Kent Counties, Delaware, Custer (1984) suggested that base camps were located on well-drained ridges in areas of maximum habitat overlap, with base camp maintenance stations at game-attractive locales nearby, and hunting sites at game-attractive locales farther removed.

Paleo-Indian sites generally are not found after 7,000 B.C. in most of eastern North America. The subsequent Archaic Period lasted from about 7,000 B.C. to 1,000 B.C. and is characterized by seasonal population migration, hunting and gathering subsistence, and small-scale egalitarian social systems.

From 7,000 B.C. until about 5,000 B.C. a pine zone began to supplant parkland. This zone is generally characterized by sharp decreases in the deposition rates

and percentages of spruce, fir, and larch pollen, and a rise in the deposition rates and percentages of pine and deciduous tree pollen. The red or jack pine was the dominant forest species. However, because the weather was warmer and drier than at present, stands of pine and oak occurred on well-drained upland areas, and hemlock and other deciduous trees occupied the lower, wetter regions (Davis 1958). Deciduous growth continued to increase, and the final pollen zones from 5,900 B.C. to the present are marked by increasing percentage of oak and hemlock (5,900 B.C. to 3,000 B.C.), of oak and hickory (3,000 B.C. to 1 A.D.), and finally of oak and chestnut. Regional and local variations in this pattern were determined by the micro-environment and its corresponding climate.

In general, there is evidence of extensive hunting and gathering populations on the Coastal Plain during the Archaic Period, with a progressive increase in population density (Turner 1978). Shifts have been noted in lithic raw material choice, with an apparent preference for quartz, quartzite or other locally available materials (Kinsey 1978).

Little information has been compiled concerning the Early Archaic Period. Adaptation was necessary due to the changes in the flora and fauna brought about by the retreat of the glaciers and subsequent climatic changes. Megafauna became extinct, grasslands diminished, and there was an increase in coniferous and deciduous tree species. Artifacts diagnostic of this period include Palmer, Kirk, LeCroy, and Kanawha point forms.

By the Middle Archaic Period, local populations were exploiting the vast new floral and faunal resources brought by the transformation, begun around 6,000 B.C., of the mixed pine-oak forest to a temperate oak-hemlock deciduous forest (Ritchie 1979). The diverse biosystem was based upon a wide range of consumable vegetation. Both large and small mammals, such as bear, white-tailed deer, squirrel and otter, along with various species of perching and prey birds can thrive in this environment (DeSanto *et al.* 1982).

The Middle Archaic artifact assemblage was broadened by the appearance of ground stone tools. Hunting and gathering was the main form of subsistence. With regard to settlement patterns, Gardner (1978) has postulated the existence of base camps with seasonally specialized, transient camps.

During the Late Archaic Period, site types and locations diversified, indicating that local populations were using a wider variety of resources. Gardner (*ibid.*) feels that the greatest size variation is on the Coastal Plain, where camps range from very small to very large. Camps in the Piedmont are usually small. By the end of the Late Archaic, steatite vessels were made as were a series of broad-bladed points. Also, there was an elaboration of mortuary practices, first introduced earlier in this period.

Like the Archaic Period, the Woodland Period in Virginia can be described in terms of three subperiods: Early Woodland (1000 - 500 B.C.), Middle (500 B.C. - A.D. 900), and Late (900 - A.D. 1600). The period begins with the introduction of ceramic vessels and ends with European contact. Plant domestication, more elaborate ceremonial rituals, and increased sedentism also characterized this period.

The earliest known ceramic in the area was a steatite-tempered variety referred to as Marcey Creek ware, after its type site on the Potomac River just outside of Washington, D.C. in Arlington County, Virginia (Manson 1948). The users of

this Early Woodland pottery probably followed a similar pattern of subsistence and settlement as their predecessors, but with an increase in sedentism. Gardner (1982:7) feels that this is related to

...increased efficiency in exploiting a variety of localized resources with settlement choice geared to enhancing such opportunities, the development of social institutions encouraging or enforcing the generation of surpluses, and the stabilization of particular local habitats and the radiation within these habitats of important sets of food resources.

Though horticulture was practiced in other areas at the time, there has been no concrete evidence of it found in the Mid-Atlantic.

The cultural history of the Middle Woodland appears to resemble that of its predecessor, with a hunting, gathering, and fishing subsistence. There is evidence of an abandonment of mortuary complexity. In addition, the location of base camps shifts from small creek floodplains to large river floodplains (Snyder & Gardner 1979:9).

By the Late Woodland Period, the development of horticulture began to achieve a significant role in the total subsistence system. This in turn assisted in the establishment of primarily sedentary villages located near the fertile soils of riverine floodplains (Barber 1979). As the Woodland Period progressed, the size and complexity of the village and settlement systems in the Mid-Atlantic increased, with fortifications, specialized societal roles, development of inter-tribal alliances, growth of inter-tribal governmental authority and a higher degree of complexity in the observation of religious and ceremonial activities (*ibid.*; Snow 1978).

B. Historic Occupation and Land Use

Alexandria began its development with the three prerequisites for a seaport: a good natural harbor, a large productive hinterland and an enterprising merchant class.

In 1608 Captain John Smith explored the Chesapeake Bay and the Potomac River, and sent home to England a graphic account of the natural beauty, deep waters and convenient harbors, as well as the abundant quantities of fish and game, endless forests with fertile soil, and tall trees appropriate for ships' masts. Smith noted Indian settlements on both sides of the Potomac, including Nameroughquen, Assomeck, Namassignakent and Tauxenant on the Virginia shore near present day Alexandria.

After Smith and subsequent explorers and traders departed, speculators followed in the newly opened land. During the period between 1646 and 1676, the population moved northward in Virginia from Jamestown. Northern Virginia was held as a proprietary colony after 1649 and patents were taken as early as 1651 in the area (Moxham 1974:4). In 1654, Margaret Brent patented 700 acres on the Potomac in the Great Hunting Creek Basin (*ibid.*) This land encompassed much of what is now Alexandria and was probably occupied by tenants or slaves to "seat" the land. This and other early patents were speculative ventures. There remained a general lack of interest in the area until the 1680s, which has been ascribed to the fact that it was found "to be infested with dangerous Indians" (Harrison 1924).

By the close of the seventeenth century, settlers, encouraged by the apparent lack of interference from surviving Indian groups, began to establish farms in the area. Clusters of homes formed around landing places on the Potomac River, such as that at Great Hunting Creek, where tobacco and other goods were brought for trade to Great Britain and stored in the warehouses adjacent to the landing.

The Old Ford Plant project area was within the *Howson Patent*, part of which became the town of Alexandria (Mitchell 1977:1). Ownership of a 500 acre tract of this patent was claimed by the Alexander family, and by the early eighteenth century, Philip Alexander (1704-1753) lived on the land where he had 'quarters' (*ibid.*). These quarters are illustrated on the bluffs above the waterfront (*Fairfax County Book of Surveys* 1746)(Figure 3).

Alexandria was settled on the banks above the waterfront between Great Hunting Creek and a creek to the north called Ralph's Gut (near Oronoco and Pendleton Streets). The Potomac River and the two inlets offered convenient access to inland resources, and both were the location of early tobacco houses, warehouses, landings and homes of the traders and merchants.

The warehouses at Ralph's Gut formed the nucleus of the town called Alexandria. Several dwellings were at this site, including that of Gabriel Adams by 1716 and of John Summers by 1703 (Mitchell 1977:36). There may have been others on the banks above the waterfront, situated advantageously for access to the landing.

About 1748, a survey of the site of Alexandria, before it was laid out as a town, was drawn by George Washington (Figure 4). The new town was intended to be a port, as noted by Washington,

...in the bank fine cellars may be cut from thence wharfs may be extended on the Flats with out any difficulty and warehouses built therein as in Philadelphia...

The Old Ford Plant project area was not included in the new town of Alexandria. The land was inherited by John Alexander in 1753, who also owned lots in the town. William Thornton Alexander acquired the property in 1775, after John's death. It is speculated that this land, south of the town and in Fairfax County, was used for maritime purposes by the Alexander family. Their homestead and quarters were on the higher elevations to the west, outside of the project area, but coasting vessels could have approached this landing, since they required little draft. This was not an official port as mandated by Virginia but some coastline activities may have taken place. It has been demonstrated that such activities took place on low-lying land adjacent to the upper Potomac River, and outside the town boundaries in Georgetown (Artemel *et al.*, 1987). Early efforts at providing a dry surface prior to bulkheading and construction of wharves included laying down of planking (*ibid.*).

Alexandria operated within the British mercantile system as a colonial tobacco port and became an important regional market prior to the Revolution. Manufactured goods were imported from London, Glasgow, Caribbean outposts, and ports along the Atlantic seaboard. In return, ships were loaded in Alexandria with tobacco, grains, pork, fish, lumber and other commodities (Preisner 1977; Rothgeb 1957). During the entire eighteenth century, Alexandria was dependent upon maritime activities and commerce.

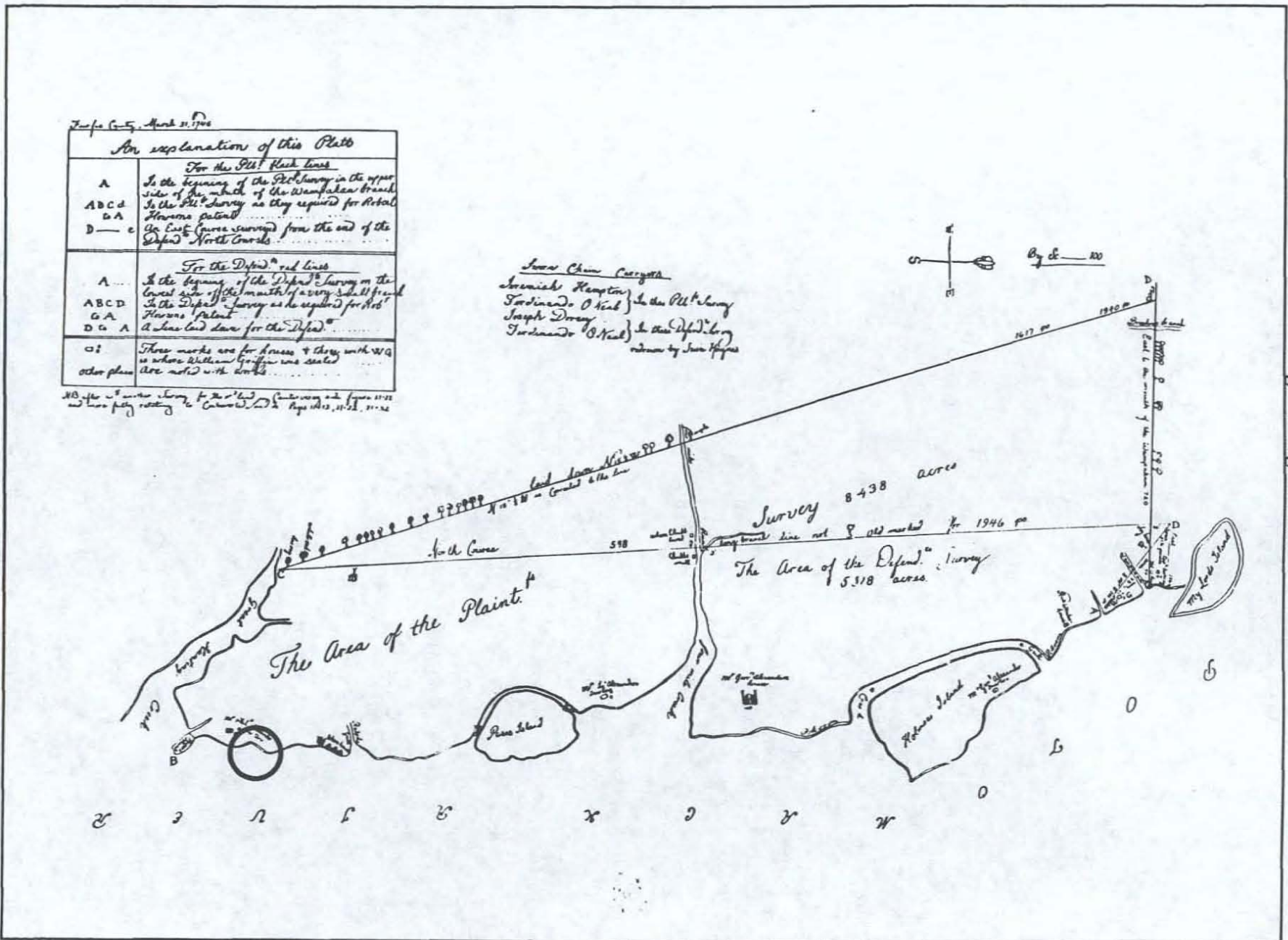


Figure 3
West Bank of the Potomac, 1746

Source: Hampton and Neal, 1746

Figure 4
Map of the Site of Alexandria,
1748

Craftsmen quickly found their place in Alexandria and by the 1760s included coopers, tailors, a baker, a weaver, cordwainer, shipwrights, saddlers, ship carpenters and shoemakers (Sweig 1978:71).

The town centered on the waterfront with a core that extended for seven blocks north and south along Fairfax Street, and from the waterfront west to Royal Street (*Figure 5*). Lowlying land was filled to create new land and several wharves were built by the major merchants of the town in addition to the public wharves at West Point and Point Lumley (Preisser 1977:213-220). Disputes concerning the right of usage for lowlying waterfront lots and the river frontage was settled in 1760 by the Trustees who stated that

[the petitioners had] ...the benefit of extending the said Lotts into the River as far as they shall think proper...(*Proceedings of Alexandria Trustees, Sept. 1, 1760*)

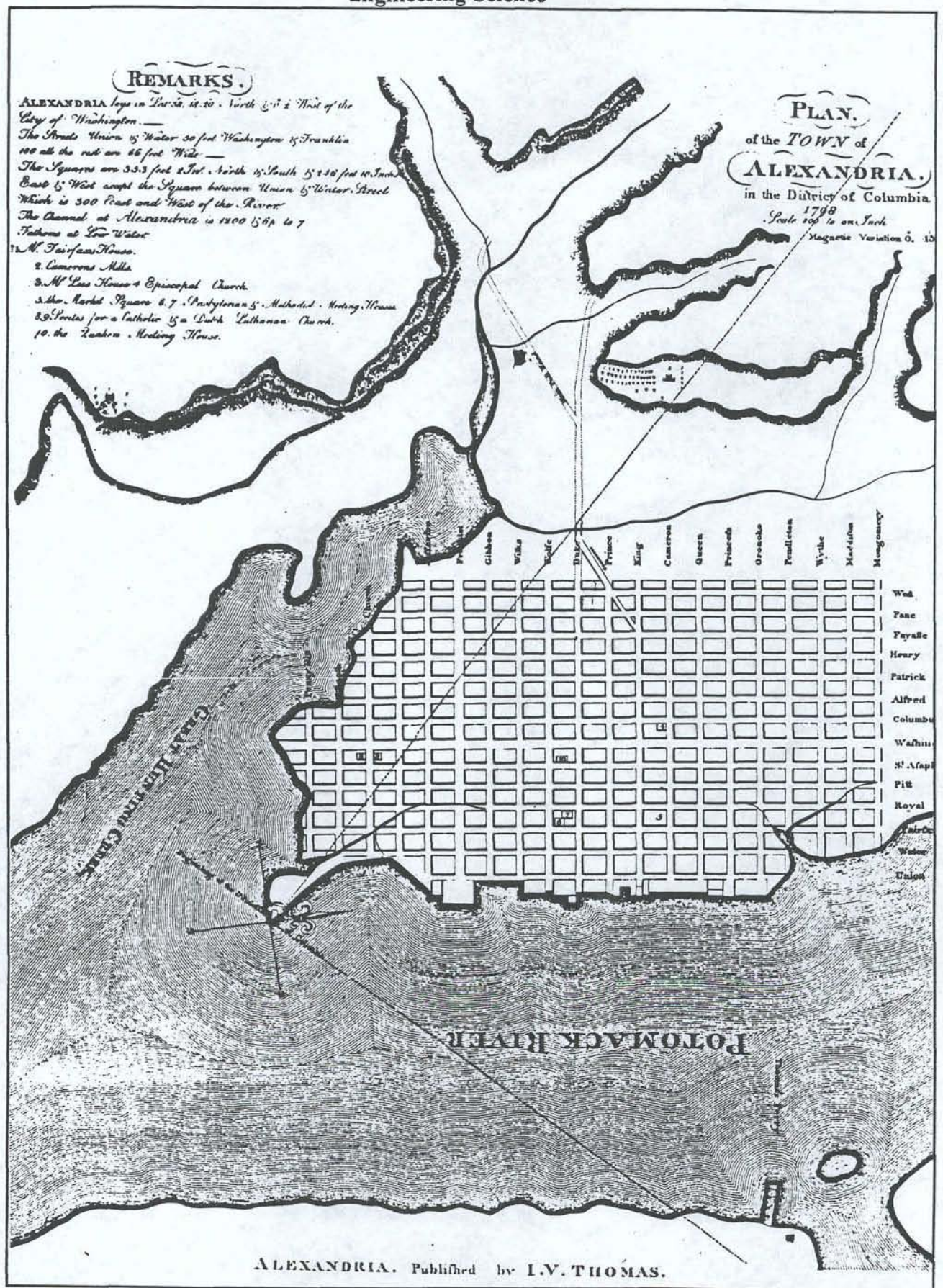
This became an important precedent for later development of the waterfront and extension of land into the former river.

Land transportation during this period was via roads to the hinterland where tobacco or grain was grown. The roads westward led to smaller farming communities such as Centreville, Haymarket and Leesburg. South, the road led to Colchester, Fredericksburg and Richmond. The roads were also connections to other waterfront loci, such as that northward to the Georgetown ferry and to the falls of the Potomac where there was another tobacco inspection house. Along these and other roads were clusters of houses, taverns, mills and blacksmiths.

Alexandria's economic development continued to be dependent on its maritime activities in the late eighteenth century. In 1780 a naval office was established in Alexandria for the inspection and registry of incoming and outgoing ships (Stoessel 1969). This was the busiest year of the war for Alexandria merchants and shippers, in spite of blockades offshore. Even in 1781, when there was a financial crisis in Virginia, local merchants survived through credit established with Philadelphia and Baltimore merchants (*ibid.*) By this time, Alexandria's trade was chiefly in wheat and flour, with markets in Atlantic coastal cities, European ports and the Caribbean. The tobacco trade was waning in northern Virginia, and after the Revolution new merchants were attracted to the port, anxious to fill the vacuum created by the departure of Scottish and English factors. Major improvements were made on the waterfront after 1783, and the merchants in the region, including those in neighboring Georgetown and Bladensburg, came to Alexandria for services, including ship building and repair (Mason Papers).

The Keith and Harper Wharf

It was at this time that a portion of the Alexander land, including the project area, was added to the town of Alexandria and lots created within the parcel. In 1782, the executors of John Alexander laid out a number of lots of ground adjoining the town of Alexandria, and within two years advertised their availability, as well as those to the north in prior additions to the town.



Source: G. Gilpin, 1798

Figure 5
Map of Alexandria in 1798

Will be let on ground rent, on the Fourth Tuesday in October next, at Mr. Lomax's Tavern, Forty Lots adjoining the town of Alexandria, by the executors of Mr. John Alexander, who will make proper titles.

William Alexander

W. Gibbons Stuart

N.B. Many of the Lots lie on the river.

(*Virginia Journal and Alexandria Advertiser*,
May 20, 1784; August 26, 1784)

and,

To be let on Ground Rent in Fee Simple, to the highest Bidder, on Monday the 3rd day of October next, One Hundred Lots of Ground, contiguous to the town of Alexandria, each lot containing half an acre, fronting on two streets, one 176 feet 6 inches, and on the other 123 feet 5 inches, some of which are water lots, and many of them fronting on a street 100 feet in width leading from the extensive wharf now building by Captain Harper and others into the country, intersecting Washington street which is likewise 100 feet in width; at the intersection of the two streets a space is left for a Market-House and other public buildings; the residue of the lots are adjoining the last mentioned lots, and the lots on the west side of Washington street.

William Alexander; William Gibbons Stuart; Executors of John Alexander, deceased.

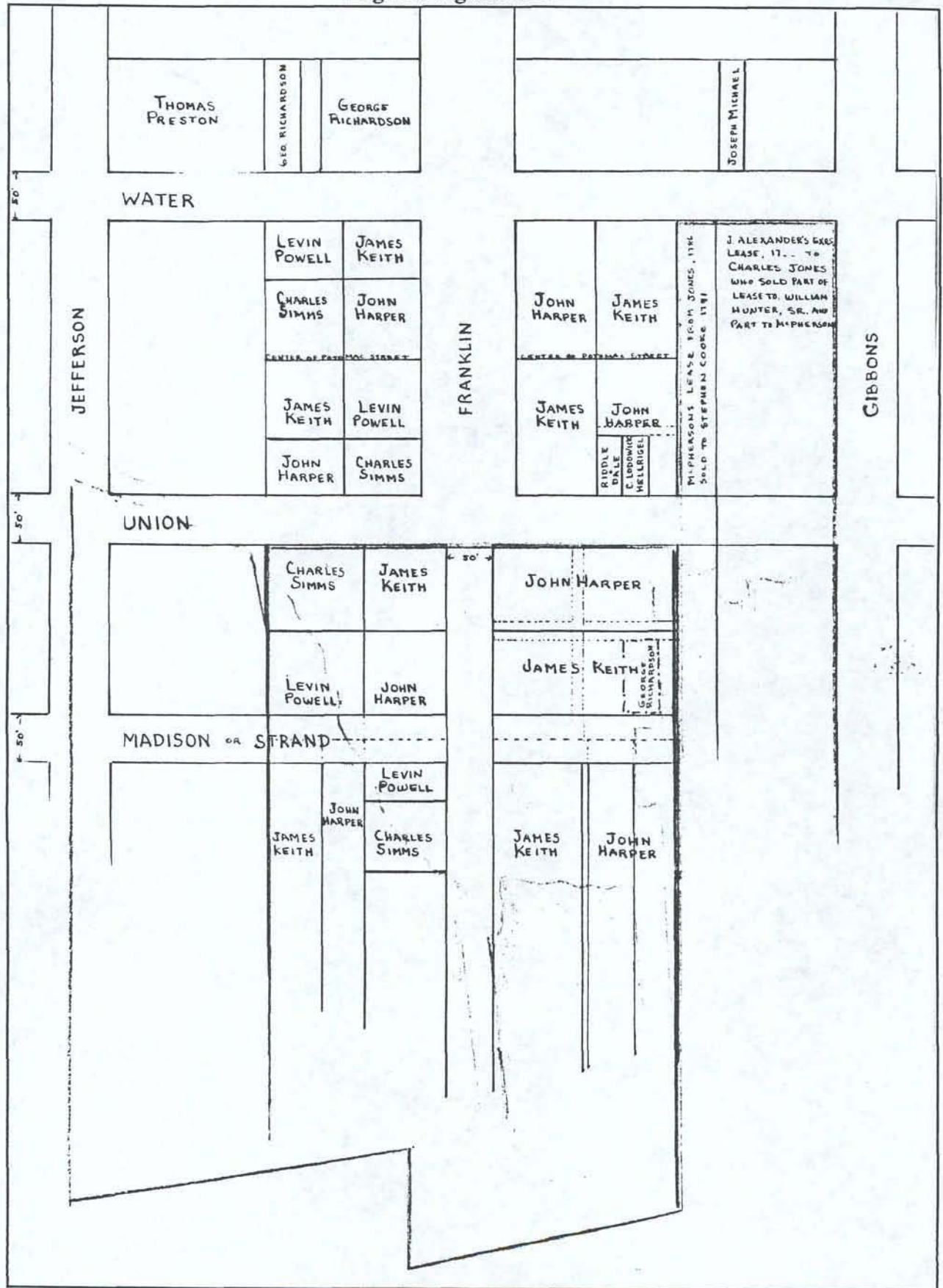
(*Virginia Journal and Alexandria Advertiser*, July 28, 1785)

It appears that John Harper, Charles Simms, Levin Powell and James Keith intended to purchase this property, through an agreement with the executors of the Alexander estate, and to promote development of the southern part of the town (*Figure 6*). The major street was to be Franklin Street, which was laid out to be one hundred feet wide, intersecting with Washington Street, where a market house was planned (*Virginia Legislative Petitions [VLP]*, November 15, 1785). At the foot of Franklin Street was the new wharf of Keith and Harper, under construction. The land was being extended four hundred feet forward into the river (*ibid.*). The 30-foot embankment above Union Street was cut down, and the earth used to fill Harper and Keith's new wharf. Banks up to thirty feet in height originally ran along the back of the waterfront (Preisser 1977). Notice was made in the local newspaper of an accident during this construction, when a worker on Harper and Keith's wharf lost his life (*Virginia Journal and Alexandria Advertiser*, September 15, 1785).

Soon thereafter, the wharf was ready to receive goods from the hinterland, and notices were placed in local papers for the sale of subdivided lots on the wharf. Construction of the wharf may have been by David Shaon of Baltimore, who advertised himself as a wharf builder in 1785 and that he...

being here for the present season and desirous to be useful...can command any reasonable number of good workmen from Baltimore...He professes also the capacity of building a complete pile driver...and recommends the driving of large piles on the outside walls of every wharf [which] is more peculiarly suitable here from the steepness with which the channel of the Potomack is formed. (from *Fireside Sentinel*, T. Michael Miller)

Engineering-Science



Source: Engineering-Science

Figure 6
Land Ownership in Project Area,
c.1800

This was a period of activity and growth in Alexandria's history. The development of the south waterfront included the buying and selling of lots, new street configuration, with attempts to control town growth by local investors and officials.

The wharf was subdivided into individual lots and leased to James Keith and John Harper (Alexandria Deed Books, Hustings Court, D:4) until 1791, when the executors of John Alexander's estate allowed their sale. The wharf was known as the Harper & Keith Wharf (*Figure 7*), and its location was used as a landmark in notices of other properties for sale, including that of Samuel Arell, at the foot of Gibbon Street and immediately north of this wharf.

For sale one undivided fourth part of a WATER LOT ...& a Lot or two to the northward of Harper & Keith's wharf.

Samuel Arell
(*Virginia Journal and Alexandria
Advertiser*, November 16, 1786)

The four petitioners, Harper, Keith, Simms and Powell, were each well known in local, regional and state affairs. John Harper is probably the same as Captain John Harper, who already was established at Harper's Wharf on the central waterfront, as described in local newspaper advertisements.

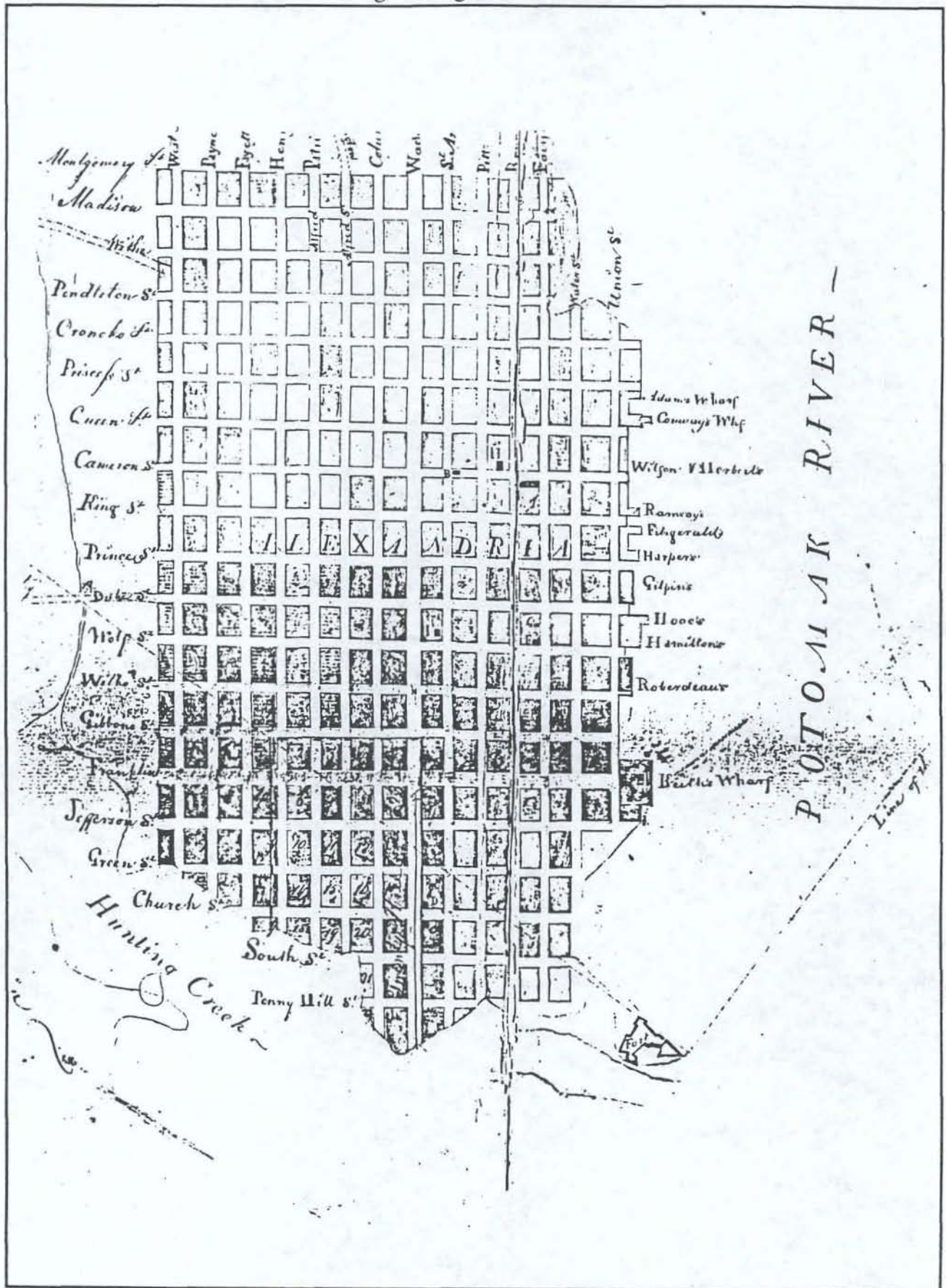
On Captain Harper's Wharf, a large and elegant assortment of European and East Indian goods, suitable for the season ... (*Columbian Mirror*, May 20, 1784)

John Harper was a member of the first City Council, a member of the Washington Lodge of Masons, loyal to the Federalist Party and the ideals of Washington, active as a landowner and developer, and described as a "valued citizen" and a member of "a wealthy class of merchants and farmers who added to the prosperity of the town" (Powell 1928:163).

James Keith was also prominent in local affairs. After studying law in Williamsburg (*Tyler's Quarterly*, 8:191), he served as mayor of Alexandria (1784-1790), sat on the Common Council, was President of the Patowmack Canal Company from 1790 to 1807, and was President of the Little River Turnpike Company. The latter two companies were formed in an attempt to facilitate transport from the hinterlands to Alexandria and other ports.

It is evident through his list of endeavors that Charles Simms was a public leader in Alexandria. He was an eminent lawyer who commenced his career as a student in George Mercer's law office in Fredericksburg. Simms received the title of Colonel during the Revolution, and was a strong Federalist and active in politics. He was a delegate to the Virginia Convention in 1788 and was chosen to vote on the adoption of a Federal constitution. In addition, he was a vestryman at Christ Church, and a founder of the Society of the Cincinnati. He was appointed to Collector of the Port of Alexandria by the President in 1799, and later served as mayor of Alexandria during the War of 1812.

*Appendix C for an abstract of Alexandria Deed D:4 and subsequent deeds related to the early subdivision of this area of Alexandria.



Source: Anonymous, 1803

Figure 7
Map of Alexandria in 1803

Colonel Levin Powell, who served in Grayson's Regiment during the Revolution, became an influential citizen of Loudoun County, and was a founder of both Centreville and Middleburg. He was involved in both local and national politics, and was a Justice of Loudoun County as early as 1770. In 1798, he represented the Loudoun District in the federal Congress. Like his associate, James Keith, Powell, as a director, was involved in the Little River Turnpike Company. This turnpike would have been attractive to Powell as his landholdings in western Fairfax County would thus have a direct link to the wharf on the Alexandria waterfront. Levin was also a Trustee of Matildaville, the town in Fairfax County adjacent to the Patowmack Canal, and founded at the time the canal was built (Artemel 1978:206).

Each of these four men, to varying degrees held positions of public office or held close connections with Alexandria. Because of this, they were in a position to make decisions that would affect the commercial scene in Alexandria. Simms was the Collector of the Port from 1799 to the early 1800s. Harper was on the town Council and well established in real estate and mercantile affairs. Keith was an eminent lawyer, as well as mayor until 1790. Powell's sons, Cuthbert and Levin, were engaged in a mercantile business near the waterfront district.

Their involvement with the transport of goods from the hinterlands to the port, was facilitated by their participation in the Pawtowmack Canal Company, the Leesburg Turnpike (Middle River Turnpike) and the Little River Turnpike Company. These enterprises were all attempts to broaden Alexandria's trade market and connect it with the western counties. This was increasingly important as grain began to replace tobacco as a trading commodity.

No definitive statement has been located that describes the dimensions or method of construction of the Keith and Harper Wharf, but some items are known from land deeds and advertisements. The original wharf measured 400' in length from the high water mark according to its builders (VLP November 15, 1785), or extended 124 feet east of Strand or Madison Street according to legal documents of the time. (Alexandria Land Deeds I:179). These two sources agree within 25 feet. It was constructed within a "frame" that was then filled in with earth, presumably partly the earth left on two the lots referred to in the petition (*ibid.*), and partly from earth from the embankment. The wharf itself was divided by streets and alleys, principally a 50-foot wide street, Strand or Madison Street. A review of land transactions, tax records, and insurance records has not yet revealed the nature of improvements on the wharfs, but the presence of the streets and alleys suggests anticipated development. Contemporary newspaper accounts and insurance records indicate that warehouses, counting houses, and stores were commonly constructed on the wharves of the town.

Of lots east of Union Street on Keith and Harper's Wharf, only a few were sold within the first fifteen years of the wharf's history. These include one subdivision on the northeast corner of the wharf to Thomas and John Vowell in 1798, and the transfer of the other half of that lot from John Harper to William Harper in 1802, and then to Gardiner Ladd in 1803 (Alexandria Deed Book I:179). Also on the north side of the wharf, but west of Madison/Strand Street, James Keith leased a lot to George Richardson in 1798 (Alexandria Deed Book I:329). Richardson's lot is distinguished by a reference to a line "of logs laid for the said wharf forming the northern boundary." This agreement also stated that,

It was agreed that he and they may during said term land upon the said 15' in front of the premises hereby demised him and upon Madison Street any stone for the use of his shop free from wharfage he and they taking care to remove the same when required so that those places be not incumbered in such manner as to prevent other articles being landed thereupon (*ibid.*).

Richardson may have been involved in the stone-cutting business, and the wharf used for loading and unloading, as well as temporary storage of the stone before transfer to a stone cutting yard. Alternatively, the stone referred to may have been ballast temporarily stored at this site.

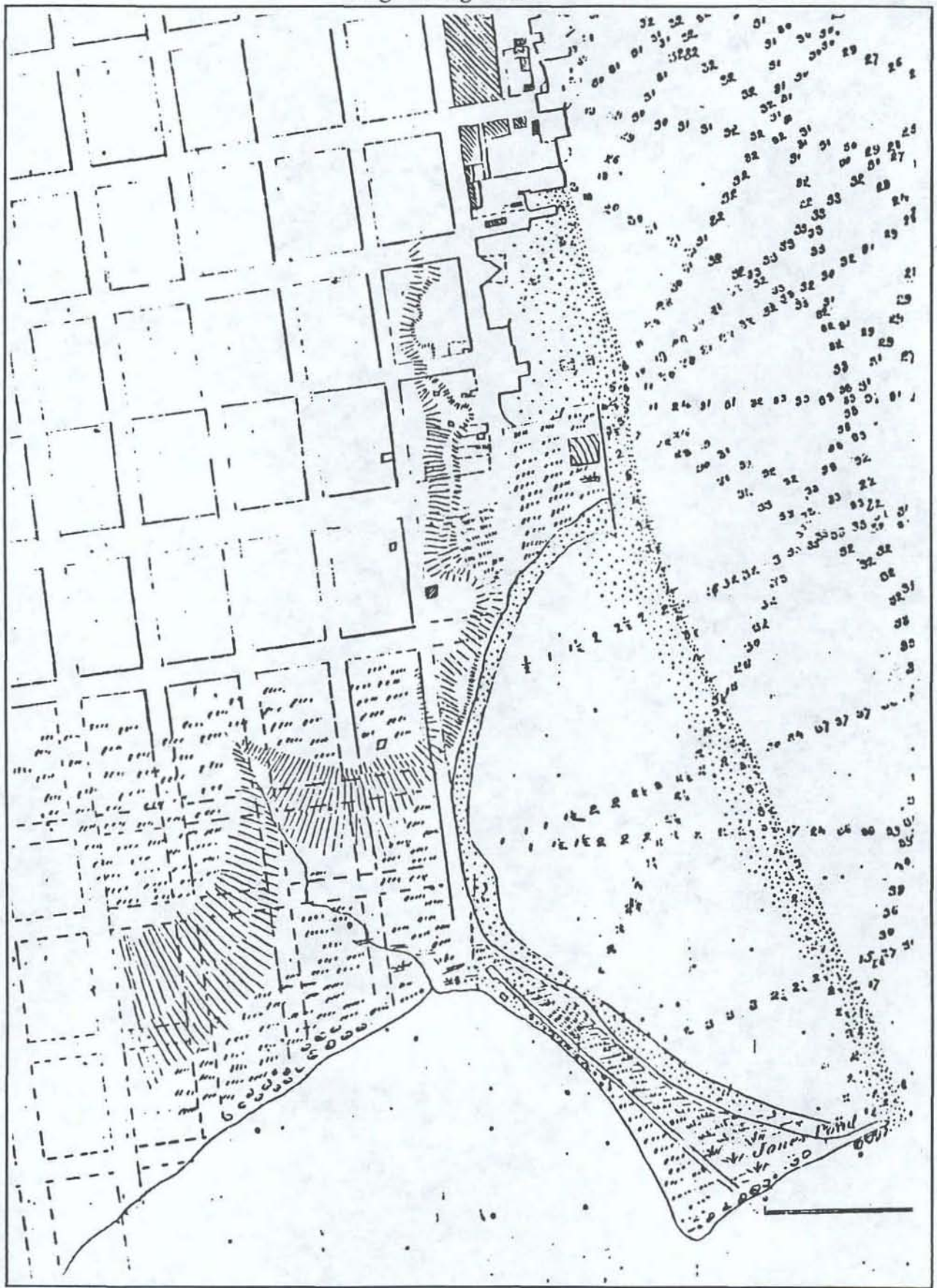
A section of the wharf, thirty feet wide, was "covenanted by proprietors ... to be left forever open as a passageway along the front of the wharf and a landing place" (Alexandria Deed Books K/2:575), in accordance with the intention of the wharf builders who stated in 1785 that they were "constructing commodious piers and docks in the front of their wharf for the reception of shipping" (VLP, November 15, 1785). One use to which the wharf was put was the sale of fish in 1804. The Superintendent of Police was reported to

... assign as a place for the sale of fresh shad and herrings, from and after the first day of April next, the wharf of Mr. James Keith, a little to the south of the present harbour of this town ... (*Alexandria Gazette*, March 30, 1804)

Keith also intended to use the wharf "to keep a public ferry from the lower point of his wharf to the opposite shore" (Alexandria Deeds G:399). At some point not yet clear, a tobacco warehouse was erected on the wharf. The 1830 Alexandria Tax Records indicate the presence of such a structure on the south side of the wharf, on property owned by James Keith. It seems likely that this tobacco warehouse would have dated from an earlier period but this is the earliest reference to it in the records. A large structure is illustrated on the wharf in an 1836 map (*Figure 8*), but unless this is the tobacco warehouse mentioned above, its use is unknown.

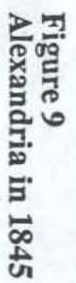
The Alexandria Marine Railroad Company was founded on 13 January, 1849 with Nathaniel Goodhand as President. Other investors in the venture included D. Boyd Smith, Richard C. Smith, Stephen Shinn, Edward Daingerfield, John T. Johnson and Joseph P. Grimes (Alexandria Deed Book K3:441). Little is known about this early venture. It was, however, a period of boom in shipping for Alexandria in general with 39 ocean-going vessels registered in Alexandria (Tilp 1978:82 and *Figure 9*). The company was probably founded to profit from this activity through the repair and refitting of Alexandria's fleet. The operation seems to have been a fairly small one, at least initially, probably limited to one marine railway, since the investors held only the north side of the wharf and part of the block bordered by Strand and Franklin. They may, however, have leased additional land on the wharf.

With the coming of the Civil War, the First Battle of Manassas revealed the weakness of the Union armies and underscored the need to interpose defenses between the victorious Lee and the defenseless Capital. This job fell to Major John G. Barnard of the Corp of Engineers. The defense strategy was to "build fortifications on commanding points within cannon range of each other so that cannon fire could sweep all approaches to the Capital" (Dickman 1980: 9). An



Source: Topographical Engineer
Department U.S. Army, 1836

Figure 8
Map of Potomac and Anacostia
Rivers (Detail)



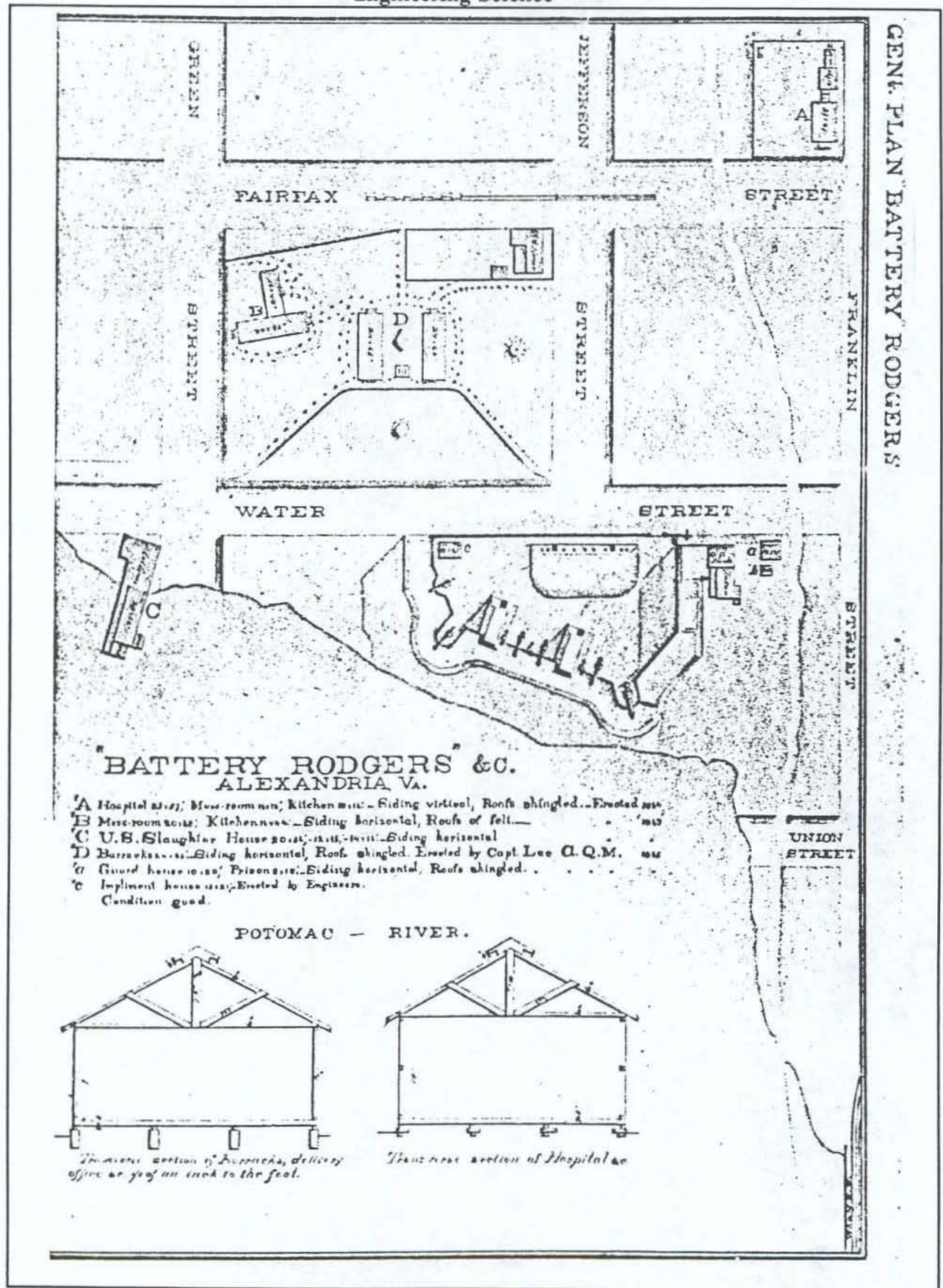
important aspect of these fortifications was a system of gun emplacements which would guard against forays up the Potomac. In a report to Stanton, the Secretary of War, made in October of 1862, Barnard states his inspection of defenses has indicated the need to "add a new feature to the defensive system by the construction of works to defend the river from maritime attack" (Barnard, Special Order 20, quoted in Dickman 1980: 10). It was for this purpose that Battery Rodgers was constructed in Alexandria, adjacent to the project area.

Battery Rodgers and Fort Foote on the Maryland shore were built to protect the Capital from attack at sea via the Potomac River (*ibid*: 15). Its location and layout were well recorded by army documents of the period (*Figure 10*).

During the War, Alexandria's railroads were operated by the United States Military Railroad. The Orange and Alexandria line's tracks, which ran down Union Street with a spur onto the Marine Railway wharf, became an important part of the Union supply effort. General Herman Haupt, commander of the U.S. Military Railroad, devised a method of loading railroad cars and engines unto specially constructed barges and, eight at a time, floating them down river to supply Burnside's army at Aquia Creek. Since the box cars did not need to be unloaded and their contents transferred to barges, then reloaded onto railroad cars at Aquia Creek, this represented a great saving of time and money for the Union. Haupt's system was used for a time and then discontinued. He had hit upon the idea of container shipping but there seems to have been no follow up to his idea until the mid-twentieth century.

Land use at this time is documented by a series of photographs, taken by Captain A.J. Russell of New York, assigned to special duty with General Haupt, and a series of maps showing Army installations in Alexandria during the War. A description of the wharf, as it existed during the war, can be drawn from these two sources. A wooden planked pier, measuring 196 by 53 feet extended east into the Potomac from the end of the wharf (*Figure 11*). A double set of railroad tracks ran out onto the wharf. Three "bridges", as Gen. Haupt termed them, served to facilitate the loading of cars onto the barges. At the near end of the pier, on its south side, was a small one-story wooden structure (*Figure 12*). The wharf itself was bare dirt on the north and south sides of the railroad tracks. Pilings visible in several of the photographs indicate the existence of a "T" or inverted "L" pier in the water north of the far end of the wharf. Photographs that seem to have been taken on the section of the wharf just north of the railroad pier show a marine railway with sailing vessels drawn up for refitting (*Figure 13*). To the west of the ships, a one-story wooden building is seen with a chimney just to its side. This could be the engine head for the railway, where the mechanical power to pull ships out of the river was generated. On both sides of the railway, a wooden fence separates the ship repair operation from the other activities on the wharf. A photograph taken from the end of the pier looking back toward Alexandria shows a open space in the building and trees of the townscape, presumably the foot of Franklin Street (*Figure 14*). Space on this portion of the wharf is open with no improvements or structures. The area at the intersection of Union and Franklin Streets appears to have been used for the construction of barges and maintenance of the wharf (*Figure 15*).

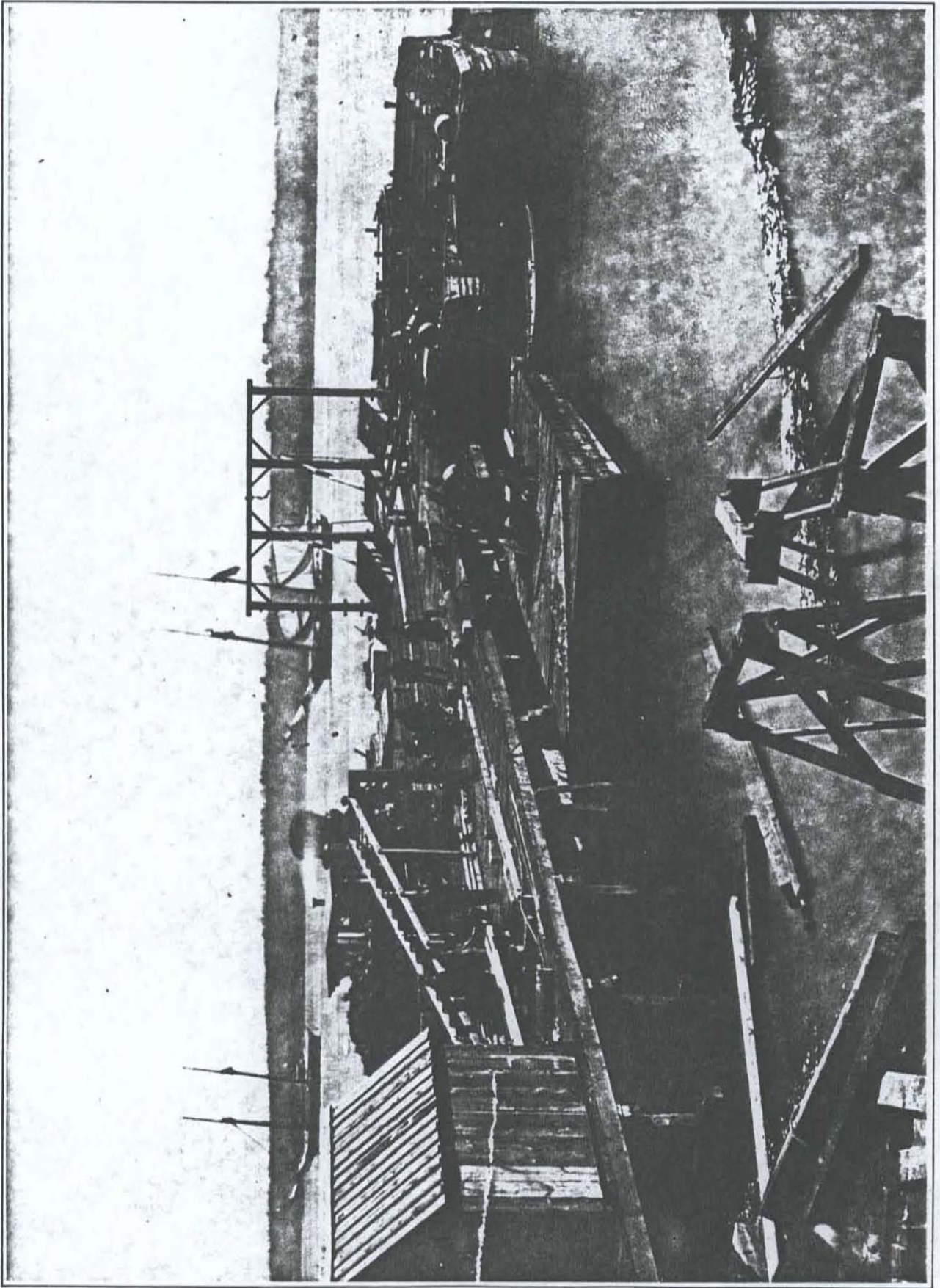
In 1874, despite a general economic slump, a group of Maine shipbuilders came south, looking for sites for new naval yards in which to build large schooners. In earlier years, framing timbers had been precut to size in Virginia and other heavily-wooded sites in the South and shipped to Maine for assembly and fitting. With their own yards established in close proximity to the source of the timber, the Maine



Source: National Archives

Figure 10
General Plan of Battery Rodgers

[illegible][illegible]



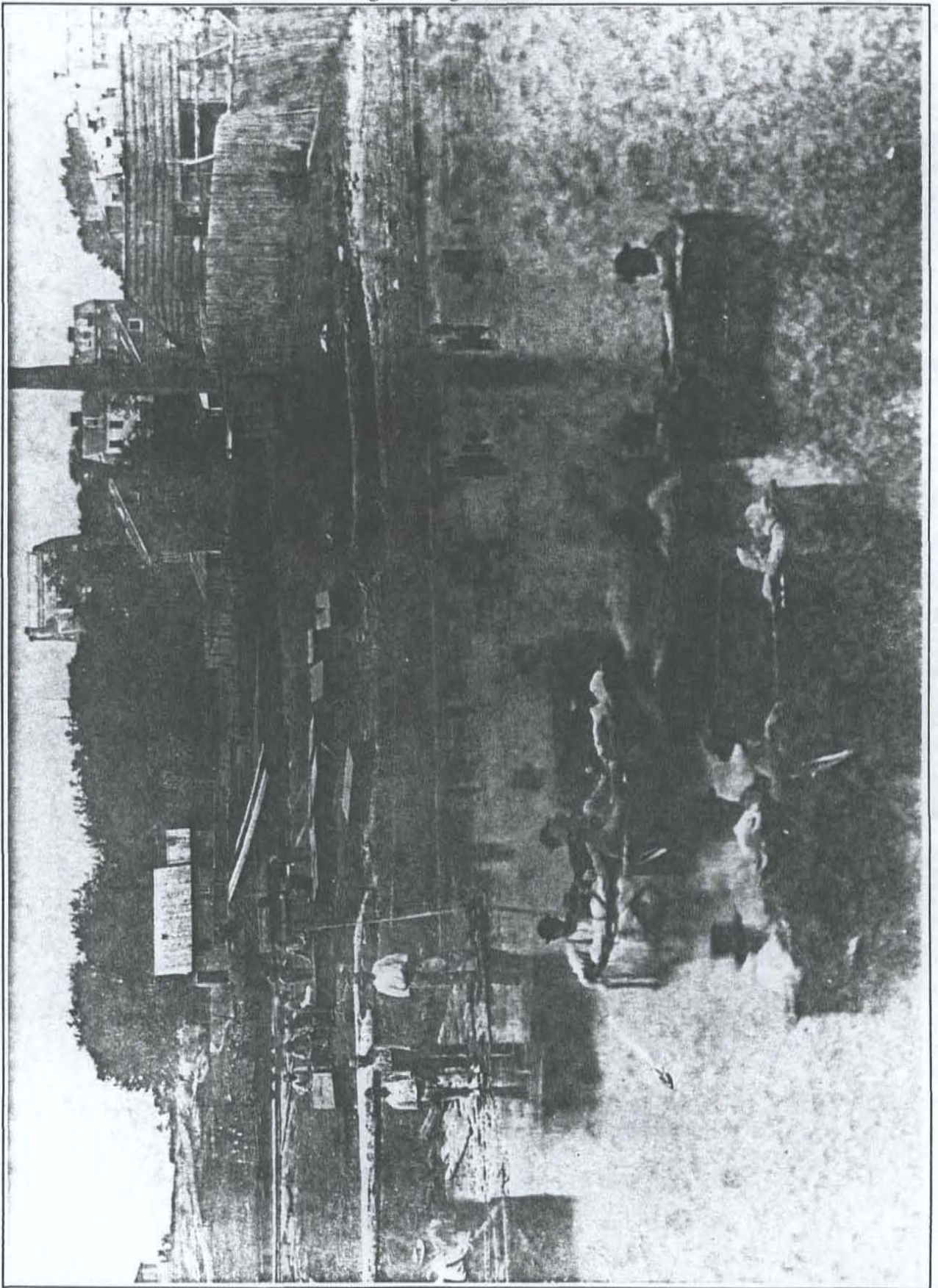
Source: A.J. Russell

Figure 12
U.S. Military Railroad Wharf,
1863



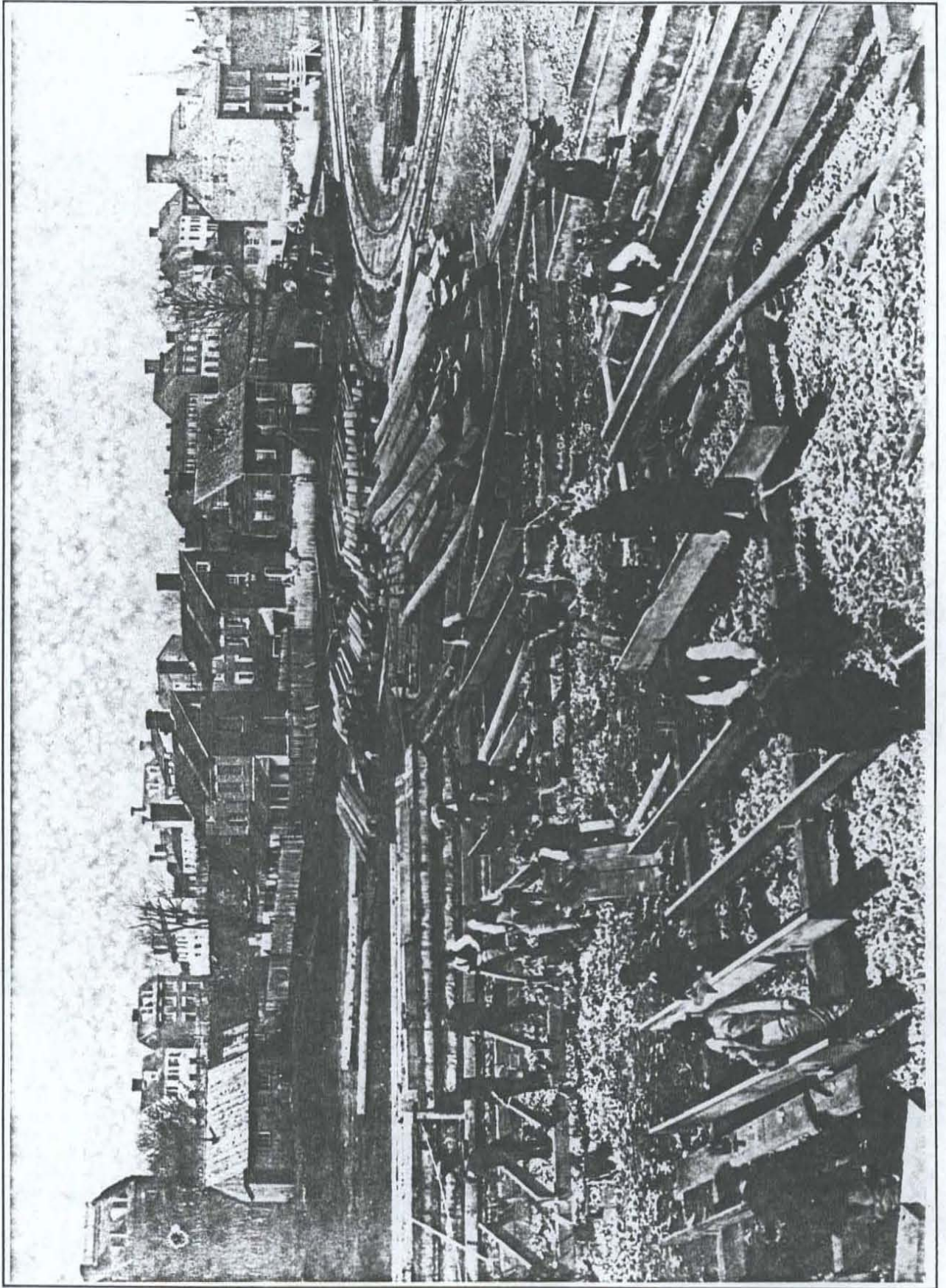
Source: A.J. Russell

Figure 13
Barge Building at Railroad
Wharf, 1863



Source: A.J. Russell

Figure 14
Barge Building at Railroad
Wharf, 1863



Source: A.J. Russell

Figure 15
Construction Activity at
Railroad Wharf, 1863

shipbuilders looked for increased profitability from their business, as well as tighter control over the timber which they intended to continue to ship to their home yards in the Northeast.

Robert Portner of Maine bought the Alexandria Marine Railway in 1874 and proclaimed his intention by changing its name to the Alexandria Marine Railway and Ship Building Company. He enlarged the yard through the purchase of additional lots within the project area, often paying with stock instead of cash, until he owned the entire wharf area (see Appendix C). Portner's main source of revenues continued to be the "meat and potatoes work of maintenance and repair of vessels" (Shomette 1985: 257). The Harbor Master Reports for the period from 1880 to 1900 show an average annual docking of 23 steamers with 44 tugs being employed for handling large sailing vessels and barges in the Washington-Alexandria harbor (Tilp 1978: 202). Large ships were constructed on all three of the railway then in operation and a sailmaker, J. W. Padgett, was working seven days a week to supply sail for the ships coming down the ways (*ibid.*: 83).

The first of the large ocean-going schooners to be built here was the 150 foot, 631 ton, three-master, **Robert Portner**, launched in 1876. The 168 foot **James B. Ogden** followed in 1880, a three masted schooner of 678 tons. The yard owned an eighth part of the **Ogden** and may have had a similar share in the **Portner**, to judge by the ship's name (Lyman 1952: 27). A notice in the Alexandria Gazette for 21 September, 1880 reported the common belief that the firm had lost money on its first two large ships. This loss, it reported, was due to the current Republican administration's tariff policy (*ibid.*)

In 1880 Henry Hall visited Alexandria and reported in his assessment of American ship building the Alexandria Marine Railway and Ship Building Company had, in the four years since its foundation, built two large schooners, one tug and had repaired a large number of Potomac River vessels (Hall 1884: 128). In 1881, the yard came under the management of John Parke Custis Agnew, a wealthy coal merchant, and in 1883, the yard was purchased by Agnew and Co (Alexandria Deed Books 14: 87 and 89). Agnew changed the name of the firm to Alexandria Marine Railway, Ship Building and Coal Co. His motives for acquisition of the concern are not hard to discern. He sought to build a fleet of schooners to carry his coal, which amounted to sales of a half million tons per year, to New York, New England and to Southern ports (Historical Review 1887: 56). The facilities at the foot of Franklin Street were to be used as general offices and wholesale shipping yards for the concern (*Figure 16*). The shipbuilding facilities covered four acres and employed

upward of 50 shipwrights and other hands... These yards are equipped with the latest improved machinery and appliances, and the company is prepared not only to effect any repairs, but to rebuild hulls and make estimates for the construction of new vessels, of any tonnage. There are here two of the finest ways in the United States; captains who have tried them say that they are the easiest in the country and can take up to a 1000-ton ship as readily as an oyster pungy. (*ibid.*)

The Sanborn Insurance Co. maps, beginning in 1885, provide a view of the business operating in the project area during this period. The northern edge of the wharf was approximately 75 feet further north than it was in the Hopkins map of 1877 (*Figures 17 and 18*). As for structures associated with the business, the first building encountered as one entered the property from Franklin Street was a two-story office building, measuring 20 by 40 feet. Storage sheds flanked the office on

ALEXANDRIA, VIRGINIA.

JOHN P. AGNEW. PARK AGNEW. A GREENLEES, Jr.

John P. Agnew & Co.,

Wholesale and Retail Dealers and Shippers of

George's Creek, Cumberland, & Anthracite Coals,

Corner Franklin and Union Streets,

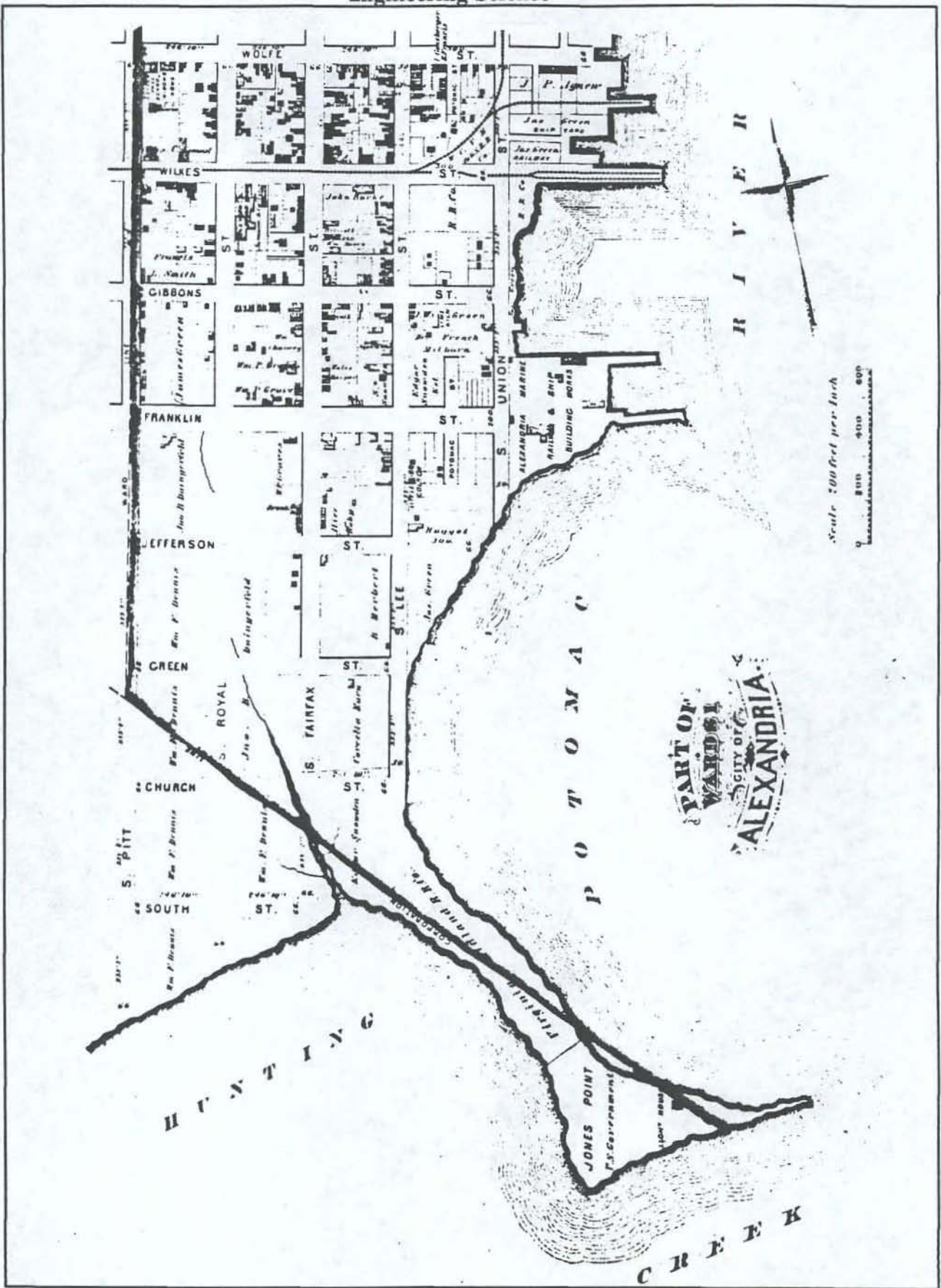
ALEXANDRIA, VA.

SHIPPING WHARVES :

GEORGETOWN, D. C., ALEXANDRIA, VA., BALTIMORE, MD.

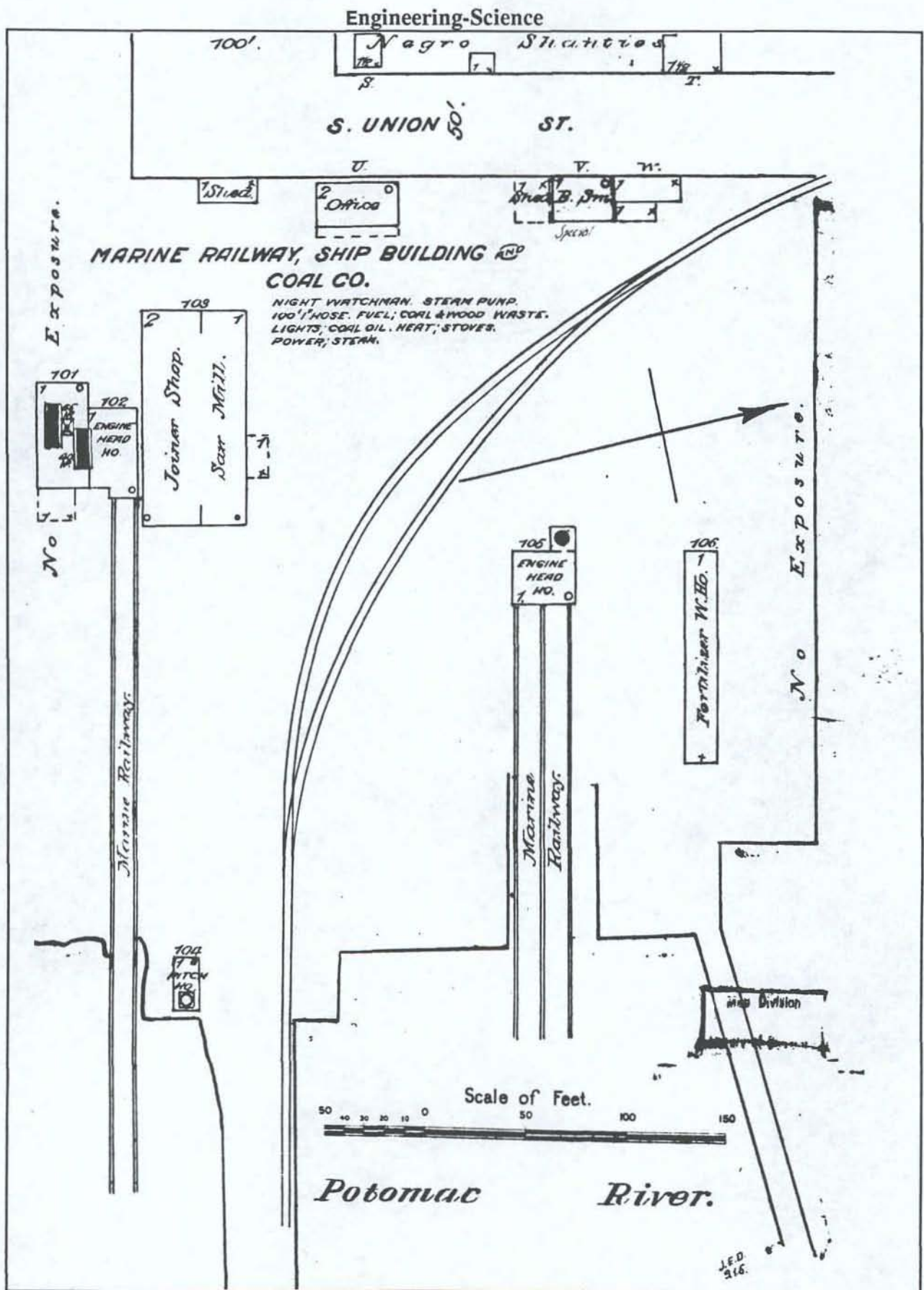
Proprietors of the Alexandria Ship Yard and Marine Railways.

P. O. BOX NO. 366.



Source: G.M. Hopkins, 1877

Figure 17
Alexandria in 1877



Source: Sanborn Insurance Co., 1885

Figure 18
Alexandria Marine Railway
Wharf in 1885

both the north and the south. Here, near the north edge of the property and fronting on Union Street, was the blacksmith shop. This would have been isolated from other structures to avoid fires. Immediately adjacent to the blacksmith shop was a storage shed which was used, at least according to the 1902 and later maps, for the storage of oakum and tools. Oakum was unbraided hemp, used to caulk between the timbers of a ship's hull.

Three marine railways were in operation in 1880, two of which were grouped together and shared a single engine head to the north and a single track along the southern edge of the yard. After 1891, this engine head was housed in a brick building. On the south of this head was a steam generating plant; on the north, a large two-story building (50 x 100'). This building probably housed the complete outfit of steam saws for squaring timbers which Henry Hall described in his census report (Hall 1884: 128). A separate building to the east of this joiner shop was used to heat pitch for caulking hulls of recently constructed or refitted ships. It was probably located away from other structures to reduce the risk of fire. Due to the location of the wood working facilities, it seems likely that ship were built on the southern railway; the two northern tracks would have been used for repairs. On later maps, the main woodworking shop is located between the two railways, with smaller shops adjacent to each.

Two piers are shown on the 1877 and 1885 maps. This would have provided ample dockage for the loading and unloading of cargo, probably coal. The larger of the two (labelled "planked wharf" on Sanborn, 1896) was probably the remains of the railroad wharf built during the Civil War.

In 1882, the **Ellwood Harlow** was launched. It had been constructed under the supervision of William H Crawford of Kennebunkport, Maine, who had leased a portion of the Agnew yards for the project. In 1883, on 21 July, the **William T. Hart**, the largest schooner ever built at Alexandria, was launched.

"LAUNCH OF THE SCHOONER WILLIAM T. HART.--The four masted schooner **William T. Hart** which has for some time been in course of construction at the shipyard of Messrs. J.P. Agnew & Co., having, so far as her hull is concerned, been finished and painted, was committed to 'its natural element' at twenty minutes to ten o'clock this morning (about the time previously announced) trimmed with flags on her decks crowded with people, in the presence of a goodly number of spectators--much larger than at the first launch--the temperature being lower, and the weather consequently more pleasant. In addition to the multitude in the yard and on vessels near by, Wind-Mill hill and all contiguous eminences were thronged with people, as were porches and windows wherever a view could be secured. The 'wedging up' having been completed at an early hour, the remaining work--that of cutting the blocks and props from under her--was begun, and when two thirds of the same had been removed there was a snap and a gentle crash of some portion of the stocks, when cries of 'here she goes!' rent the air, and the marine monster starting from its position, amid the hurrahs of thousands, the blowing of the whistles, ringing of bells, &c. glided into the water, sending swells in every direction, careening and shaking up the craft lying close by, and not stopping until nearly reaching the channel bank on the opposite side of the river where she was intercepted and towed back to the ship yard by the tug *Samuel Gedney*. As has always been the case with vessels built here, her symmetrical model caused her to float upon the water as gracefully as a swan, and the multitude on shore beheld in the vessel and surging crowd aboard.

'A city on the billows dancing.' The launch might be termed a slightly premature one, for while all knew the vessel was likely to be started by the incessant hammering and cutting away of her supports, yet her moving was not specially looked for, about sixteen men being under her at the time. All, however, retreated in good order, and no semblance of an accident occurred.

The occasion was a gala day to everybody. Being the largest vessel ever built here or in this vicinity, all had natural curiosity to see such a huge specimen of marine architecture consigned to the water, and the multitude was perceptibly enthused as they remarked how:--

"She walked the waters like a thing of life.
And seemed to dare the elements to strife."

"The spot over which the Hart was built is, we believe, the identical one on which formerly stood an old tobacco warehouse, the bowlshaped hole in the ground and a few bricks of the foundation of which had so long appeared as a sad reminder of an almost defunct Alexandria industry; but one, and all rejoiced to think that that trade had been superseded by one equally as important and that, too, at the same place (*Alexandria Gazette*, July 27, 1883.)

The warehouse in this report would be the one mentioned in the tax records for 1830 as belonging to James Keith. One last large ship was built at the wharf: the **Henry S. Culver** on 27 October, 1883. The company continued in business well into the twentieth century but no more large ships were built. Richmond's 1912 city directory for Alexandria lists the Marine Railway as belonging to the estate of Park Agnew and managed by Raymond E. Grover. This led to the firm being popularly known as Grover's Railway (Shomette 1985: 301; Tilp 1978: 84).

After 1900 the yard returned to building ships for the river trade only (*ibid.*). The **George**, a 50 foot longboat, was built in 1917. After 1896, the Sanborn maps show that the property was no longer occupied only by the Marine Railway, but was rented to a variety of other enterprises. In 1902, The Cheeseman Chemical Co. shared the wharf property. The northern railways are labelled as not operating. The one to the south may have still been operational but a note indicates there was no light or heat in the buildings on the property. The 1907 maps shows a portion of the yard leased to the National Electric Supply Co., a manufacturer of wooden insulator pins. Although Marine Railway seems to have still been in business, there again is a notice that there was no light or heat in their buildings and most of the structures on the property seem to be connected with the production of wooden pins. Even the steam generator was now fueled by wood shavings, a by-product of the National Electric Supply Company's operations. The 1912 map shows no tenant. Buildings shown earlier, which had been used in the manufacture of wooden insulator pins, are either gone or are labelled "no roof" and are clearly not in use.

Between 1910 and 1912, Battery Cove was filled in the by the U.S. Corp of Engineers. A suit was brought by Michael B. Harlow, the estate of Park Agnew, the estate of Cecelia L. Carne, and Southern Railroad laying claim to part of the newly created land. This suit created complications with the wartime formation, by the Groton Iron Works, of the Virginia Shipbuilding Corporation in 1917. Until the suit was settled, land was rented (rather than sold) to Groton and the rent money went into a depository account (National Archives, RG 77, 83810, 14). This case, *U.S. vs Marine Railway and Coal Co.* (At law No. 54, 872), was eventually heard by the U.S. Supreme Court which decided against the Railway on 21 October, 1921 (Court of Appeals, 24-25). In 1920, yard was sold to E.A. Livingstone who organized the

Marine Railway and Terminal Corp. with Livingstone as president and R.E. Grover as manager (Hill Directory, 1920).

After a period of disuse, the Aquia Creek quarry south of Alexandria was reopened in 1922 by the George Washington Stone Corporation. In June of 1923, this company purchased the Marine Railway from Livingstone (Alexandria Deed Books, Liber 77, p. 123) and held it as part of the Aquia Creek Quarries Corporation. The wharf was used to house heavy stone milling equipment and a pier, extending out 250 feet into the Potomac to a depth of 30 feet, made this stone mill the only one in the county which could accommodate ocean-going vessels at its docks (Tilp 1978: 248). In addition, the four acre site was served by trunk lines of six different rail lines. The survey conducted by the US Corp of Engineers of the port facilities in Washington, Alexandria & Baltimore lists the pier's use as "Unloading pulp wood: public use," and goes on to describe the wharf as having no transit sheds, no mechanical handling facilities, no lighting, and, generally, being in poor condition (U.S. Army Corps of Engineers 1926.) In 1931 the wharf was purchased by Ford Motor Company which immediately began the construction of a large building to be used as a assembly and parts facility (Alexandria Deed Books, 109: 70 and *Figures 19-21*). Due to the deepening of the Depression, the Parts Department closed on March 15, 1933 and all auto parts were sent direct to the dealers from Detroit. The Sales office remained open. On 1 April, 1934 the facility reopened as a parts, service and sales office.

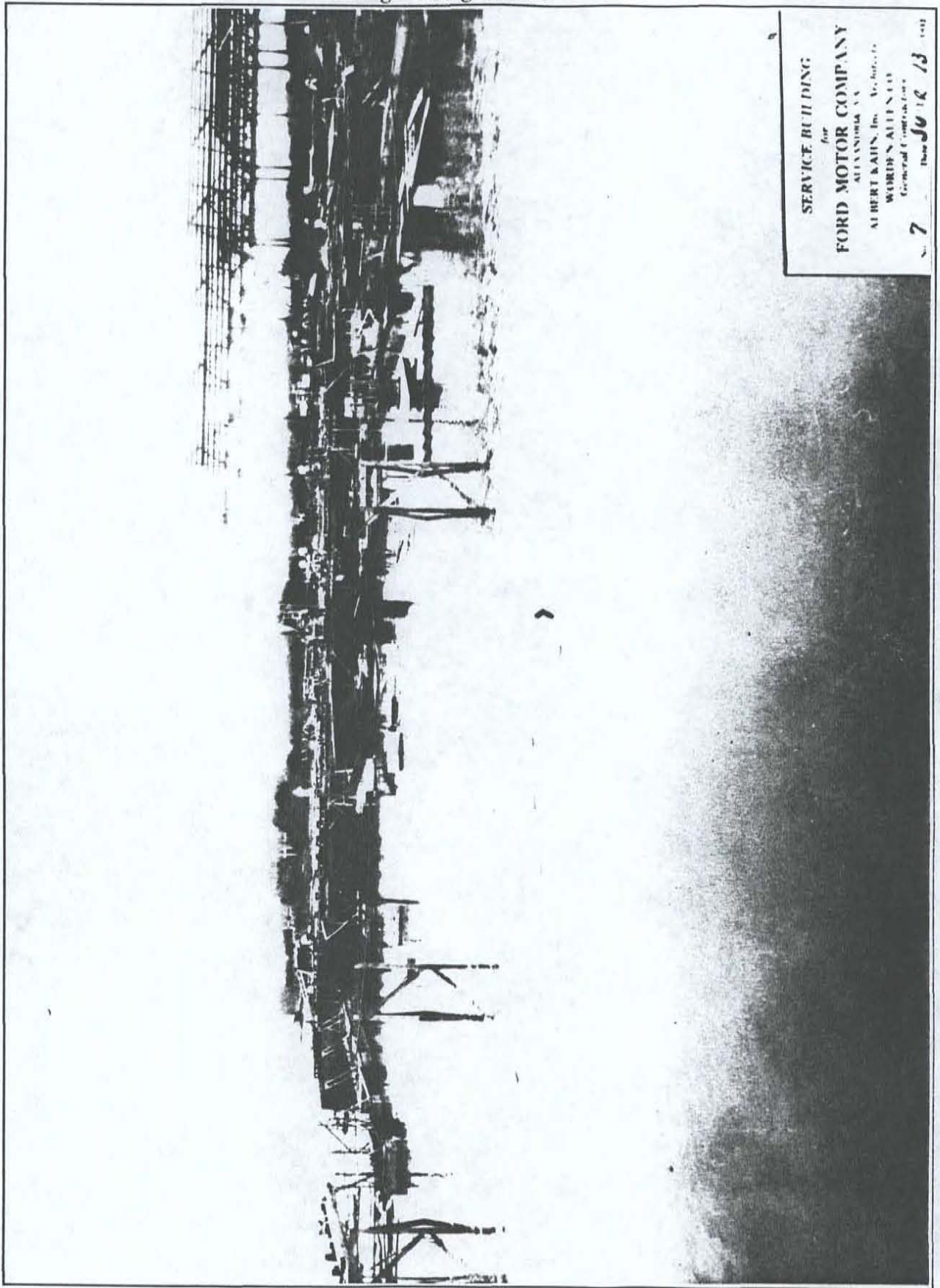
In 1942 the US Navy bought out Ford for 1.9 million dollars. The structures on the premises were readapted for use as an annex to the Torpedo Assembly Plant further north on the waterfront. In 1943 a large concrete structure was added to the west face of the Ford Plant.

During the forty years since its purchase by the government, the building has been used as a Naval Reserve facility, a GSA storehouse for a variety of items ranging from blank forms to evidence seized in tax cases, and a federal motor pool (Washington Post, 8/23/84).



Source: From the Collections of the
Henry Ford Museum Greenfield
Village

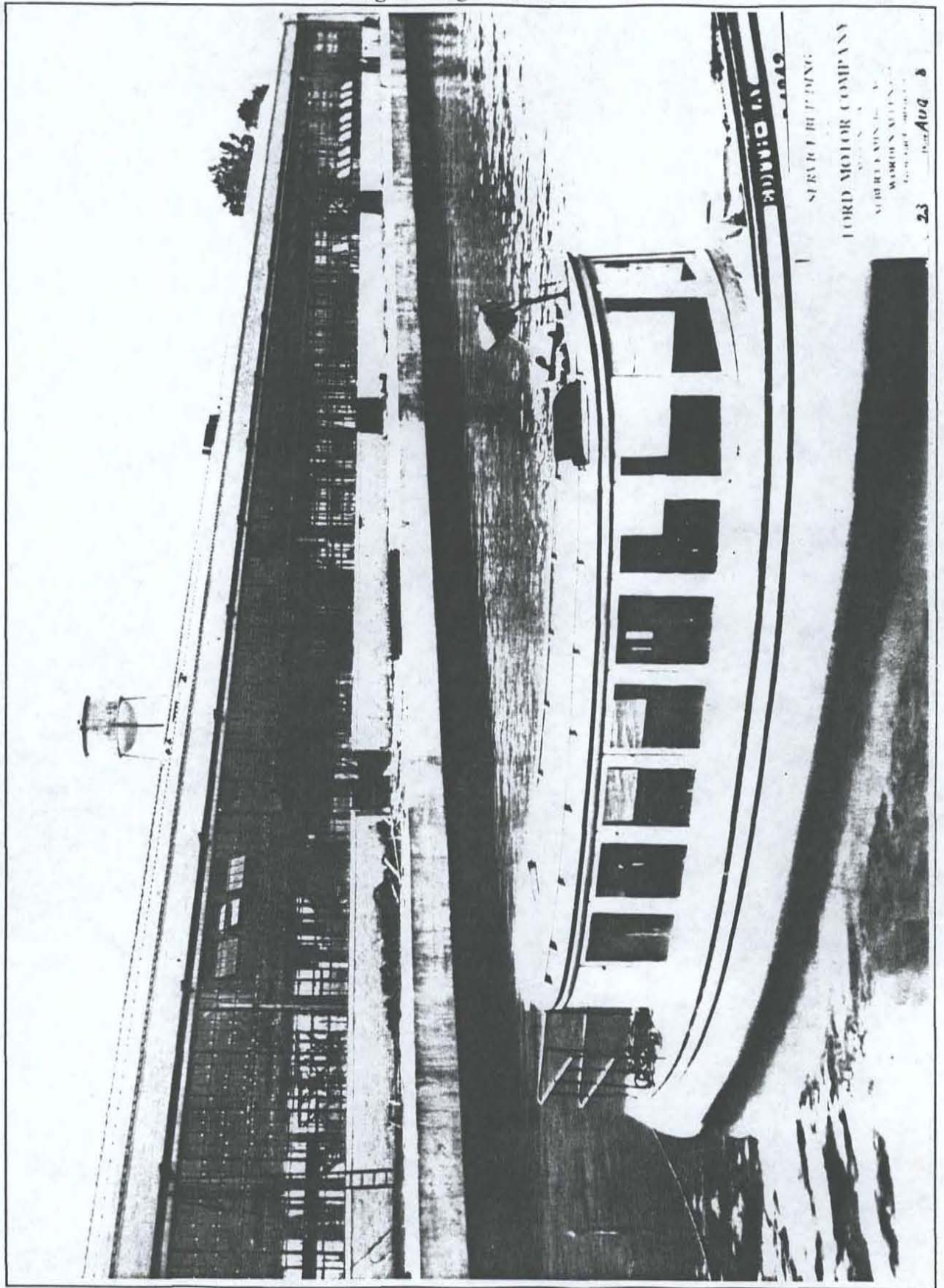
Figure 19
Construction of Ford Plant in
February, 1932



SERVICE BUILDING
for
FORD MOTOR COMPANY
ALABAMA
ALBERT KAHN, Inc. Architects
WURDEN ALLEN CO.
General Contractors
7 June 1932

Source: From the Collections of the
Henry Ford Museum Greenfield
Village

Figure 20
Construction of Ford Plant in
June, 1932



Source: From the Collections of the
Henry Ford Museum Greenfield
Village

Figure 21
Construction of Ford Plant in
August, 1932

III. PREVIOUS INVESTIGATIONS

Our knowledge of the prehistoric and historic occupation of the Alexandria area begins with John Smith's voyage up the Potomac in 1608. On his map of the region, Smith recorded the presence of four villages, inhabited by groups now referred to as Virginia Algonquinans, on the west side of the river near the present site of Alexandria (Feest 1978). The exact location of these villages is the subject of disagreement among scholars, but none of the villages seems to have been situated within the city itself.

Two late nineteenth-century studies indicate the presence of two prehistoric sites in the general region. One site was located north of the city along Four Mile Run (Proudfit 1889). The other lay to the south of Great Hunting Creek (Holmes, Dinwiddie and Fowke 1891).

The foundation of Alexandria Archaeology in 1977 prompted a survey of all known archaeological sites within the city. This survey noted 22 prehistoric sites, only one of which was near the city's waterfront. The remainder were located inland (Henry 1983). The shoreline site, 44AX53, was located immediately south of the project area near Jones Point, and has been the subject of a recent study by LeeDecker and Friedlander (1984). The lithic material and ceramics found during this investigation indicated the site was occupied during the Late Archaic and Middle Woodland periods (*ibid.*: 35)

Thirteen prehistoric sites have been located further to the south, along Great and Little Hunting Creeks (Inashima 1985: 21). A survey of Mt. Vernon Memorial Highway, undertaken in 1985 by the National Park Service, investigated four of these sites and identified a previously unrecorded site in the process (*ibid.*) The other remaining sites have not been fully explored.

Research into Alexandria's historic past has been shaped by the work of the Alexandria Archaeology. Emphasis has been placed on the concept of the "city-site," focusing on historical development within a city-wide context, and on the division of the city's history into three major periods: Mercantile Capitalism (mid-eighteenth century), Indigenous Commercial Capitalism (late eighteenth to mid-nineteenth century), and Industrial Capitalism (late nineteenth to early twentieth century) (Cressey *et al.* 1982; Cressey 1983.)

A Phase I study of the project area was conducted by John Milner Associates, Inc. in 1986 (Cheek and Glendening 1986). This investigation was limited to archival research and studies of settlement locations for prehistoric and historic sites, concluding that historic archaeological resources might exist within the project area, and that, in particular, portions of the project area possessed the potential for evidence of nineteenth-century shipbuilding activities. The study further predicted the possible existence of portions of the eighteenth century wharf structure itself and artifacts within the wharf fill.

IV. METHODOLOGY

A. Field Methodology

Testing in the field was conducted with the expressed goal of identifying existing historic and prehistoric site components. The horizontal and vertical extents and contextual relationships of existing resources were to be described through the exposure of existing structural remains and the establishment of site stratigraphy. Specifically, the procedures were directed toward defining site boundaries, and determining depths of deposits and the amount of disturbance present, in a manner which would cause the least degree of disturbance to intact resources.

A major methodological concern in the investigation of this as well as many other urban sites is the problem of land modification through the introduction of fill. Filling along this portion of the Alexandria waterfront has taken two main forms. The first consisted of major land acquisition projects, involving the importation of large amounts of fill dirt to raise surface contours over low-lying wetland areas and, in this case, to extend useable land outward toward the navigable channel of the Potomac. Since the entire study area consists of made land, an area known originally as Harper and Keith's Wharf, a key focus of field investigations was the determination of when and how infilling occurred. A second type of fill resulted from modifications to the surface of the filled area in the form of alterations to structures on the wharf site, such as the demolition of existing buildings during subsequent periods of construction.

It was predicted that relevant archaeological materials would lie at depths ranging from one foot or less below present ground surface to as much as three or four feet, depending on the amount of recently deposited, overlying fill. Intact soils with potential significance to prehistoric activity in the area were assumed to lie at depths of up to seven to eight feet or more below grade.

To achieve the stated ends of maximum resource identification with minimum disturbance, emphasis was placed on monitored mechanical excavation using a backhoe with an extending arm. Excavation was to consist of a series of long and, where feasible, continuous trenches, as a means of most efficiently exposing structural or non-structural materials and of allowing examination of extended stratigraphic sections. A non-systematic, selective sampling procedure was adopted, with test intervals based on predicted locations of historically significant architectural remains and buried early historic and prehistoric topography.

Present site conditions precluded excavation in a number of immediately obvious areas. For example, it was impossible to work in the area covered by the Ford Plant building itself and by the so-called Federal Building, the western extension to the original Ford building. To the south of the main building, a boiler house, a series of underground tanks used to store oil, gasoline and other unspecified materials, and a large water tower and the footing of an earlier tower combined to disturb deposits across a wide area. A railroad siding running along the loading dock at the west end of the Federal Building blocked excavation on much of the west edge of the property. A concrete slab of undetermined thickness skirted the north edge of the Federal Building, and almost the entire remainder of the study area was capped by a layer of asphalt, possibly masking further obstructions or

disturbances.

Of additional concern were two interrelated matters: groundwater and safety. Proximity to the river and the low-lying nature of the infilled wharf area made the influx of water from potentially saturated deposits an ongoing problem. With the limited means at our disposal, the problem when encountered was dealt with by the use of pumps and buckets, and by increased efficiency in data recording. Securing trench walls for safe entry was of primary concern in deep excavations. Depending on the type of soil matrix--its consistency, the amount of water it held and its degree of compactness--deep trenches were truncated or the side walls stepped to decrease the chance of cave-in.

On the identification of archaeological resources, a field determination of significance was made, the trench stabilized if necessary, and documentation carried out. Careful backhoe excavation allowed potentially significant fill deposits to be kept separated. These deposits were trowel sorted after removal. Exposed features and stratigraphic profiles were photographed and drawn to scale on standard metric graph paper.

Trenches were numbered consecutively across the site in order of excavation. Artifacts were placed in resealable polyethylene bags along with a label containing complete provenience information written with indelible marker. Bags were numbered consecutively, and all information from each bag recorded on a bag inventory sheet.

B. Laboratory Methodology

Upon their arrival in the laboratory, all artifacts were cleaned. Non-organic historic artifacts, such as ceramics, glass and iron, were washed. Organic materials, such as shell and bone, were lightly dry brushed if they were removed from a dry soil environment; otherwise they were gently rinsed to remove wet clay. Damp wooden artifacts were rinsed, placed in resealable polyethylene bags, and refrigerated to retard the formation of mold until final disposition of the artifact assemblage was settled.

Artifacts were dried on mesh screens and inventoried directly onto computer disk. All processed artifacts were stored in resealable polyethylene bags by type, in order to facilitate retrieval and minimize damage to fragile artifacts. Each bag was labeled with site name and bag number. An acid free tag with complete provenience information was placed in each provenience bag. Bags were stored by bag number order, in archival quality "Hollinger" boxes. An acid free label was attached to each box with Site Name and the number of the box in the series.

V. ARCHAEOLOGICAL FINDINGS

A. Introduction

Subsurface testing consisted of the excavation of nine backhoe trenches of various lengths in sections of the study area which 1) were accessible, 2) appeared undisturbed, and 3) were predicted to contain archaeologically significant materials. Trench orientations and depths varied depending on localized conditions (*Figures 22-24*).

Disturbances had been previously documented across much of the eastern portion of the study area, from approximately the western end of the Ford Plant structure eastward to the river. Thus, the main focus of investigation was within the western quarter of the property. After further study of historic maps, preliminary areas were chosen for investigation, including the ground northwest of the Federal Building extension, which was the presumed location of a late eighteenth-century stonecutter's shop, and the area southwest of the Federal Building, reportedly the location of Keith's tobacco warehouse.

A major impediment to trenching was discovered when removal of the asphalt parking surface began. Directly beneath the blacktop lay a 3 to 6 inch slab of reinforced concrete. The first stage of excavation became, then, a process of pulling up patches of asphalt in order to map the edges of the slab. In the end, when the extent of the concrete, along with two extensive rail spurs, was fully revealed, it was apparent that relatively little unobstructed ground was available for testing.

B. Trench Excavations

Trench 1 was located southwest of the Federal Building extension in a narrow stretch of open ground between the west edge of the concrete slab and a rail siding running north-south from the Federal Building loading dock. Approximately 60 feet south of the building, the tracks diverged from the edge of the slab, curving westward to a junction outside the study area, providing a thin strip of clear ground for excavation. The area lay within that portion of the wharf marked as property belonging in the late eighteenth-century to James Keith.

The trench, also running north-south, parallel to the western property line, was excavated in two sections. The first was approximately 8 feet in length and 2 feet wide. It was excavated to an average depth of 20 inches through several layers of mixed fill consisting in the main of oily gravels. At this depth, the trench rapidly filled with water seeping in from the west profile section. Water at this relatively shallow depth was unexpected. It was eventually determined that the trench, having been excavated close to the railroad siding, had disturbed water trapped within the heavy gravels laid as a track bed.

Trench 1 was continued 4 feet further to the south, where the tracks had diverged enough that the gravel bed would not be disturbed by further backhoe work. From this point, Trench 1 measured 33 feet in length and 2 feet in width. The northern half of this portion of the trench was excavated to an average depth of 25 to 30 inches below grade. Water seepage was still a problem, so that deeper testing was attempted only in the southern half of the trench, the portion farthest from the

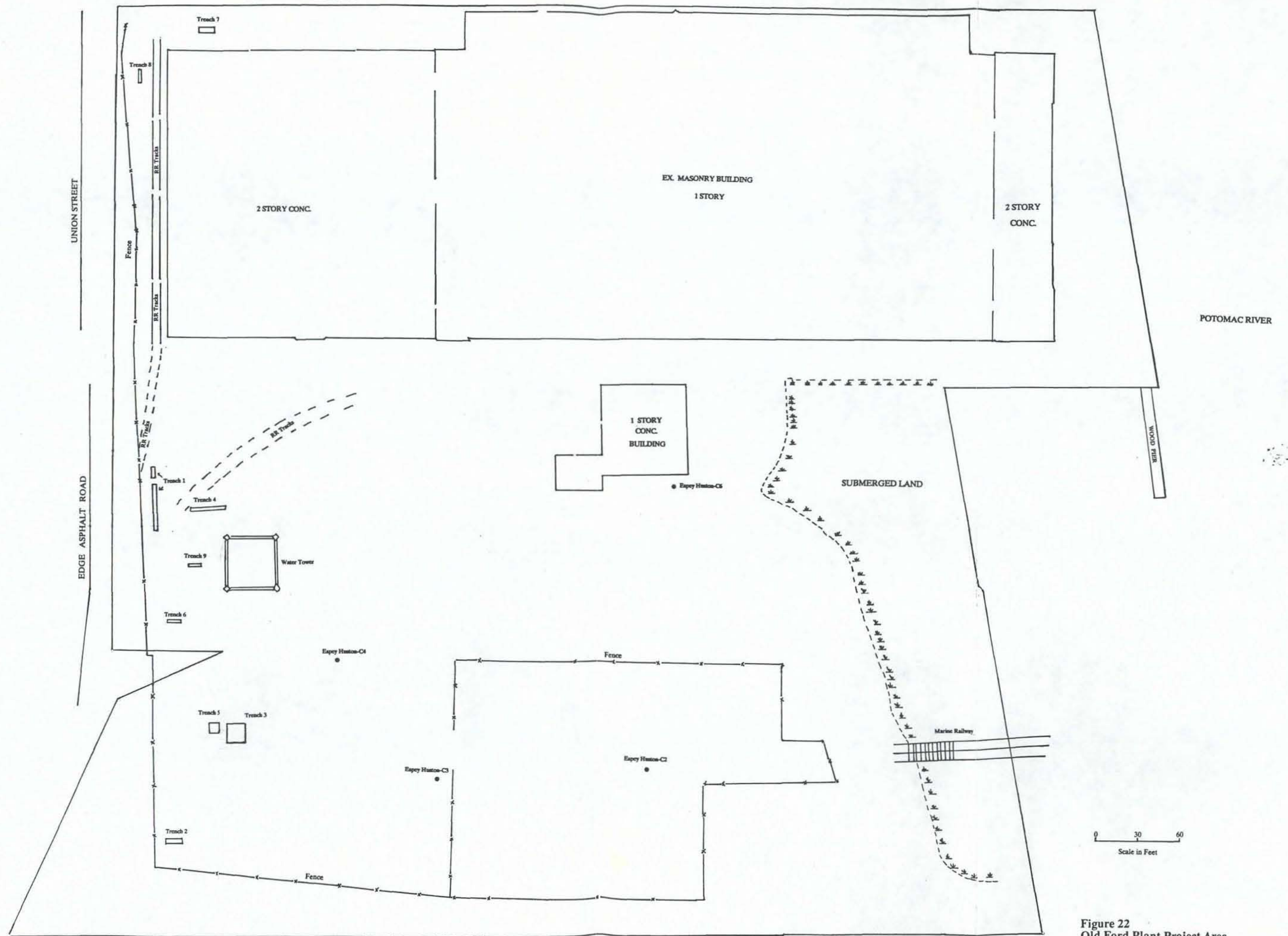
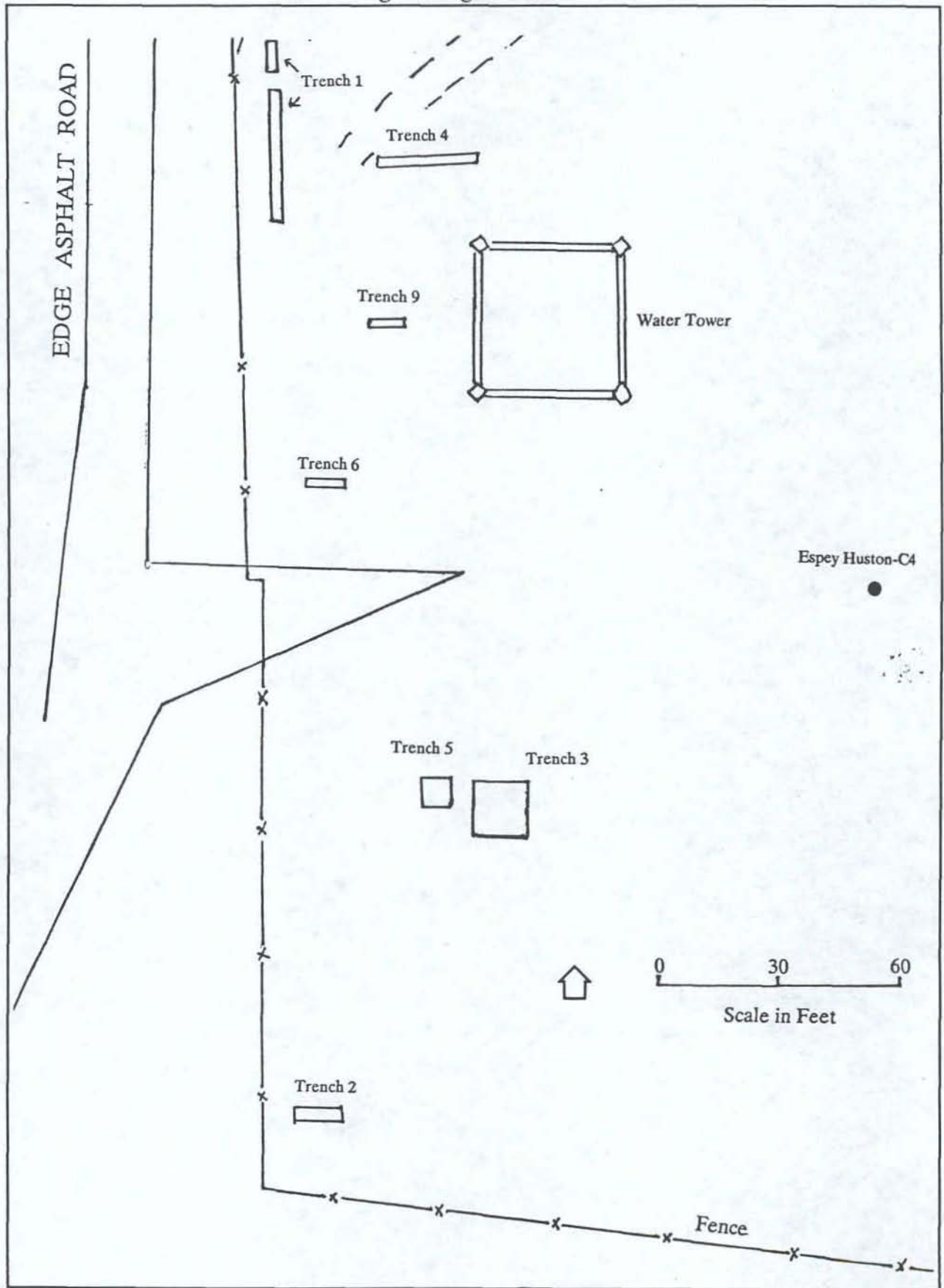
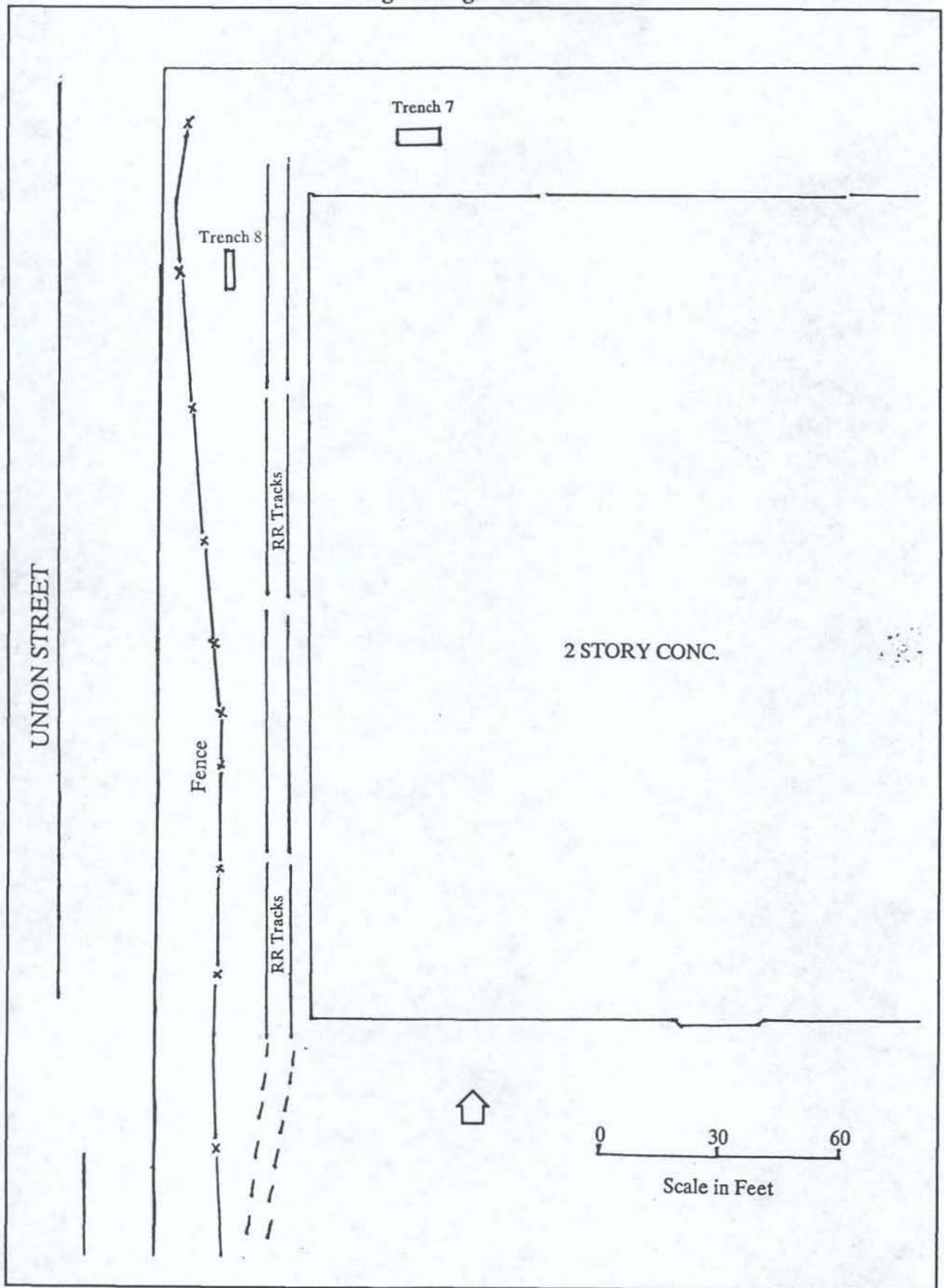


Figure 22
Old Ford Plant Project Area



Source: Engineering-Science

Figure 23
Subsurface Testing Location:
Trenches 1-6 and 9



Source: Engineering-Science

Figure 24
Subsurface Testing Locations:
Trenches 7 and 8

track bed, where the average depth excavated was 4 feet.

The profile revealed in Trench 1 showed a series of continuous and discontinuous layers of fill of largely undetermined age, characterized by gravelly sands layered with coal and cinder deposits atop a bed of redeposited clay subsoil (*Figure 25*). The major fill deposits included Stratum B, a 3 to 6 inch layer of medium brown sandy clay containing gravels and small amounts of modern demolition debris in the form of brick fragments, wire nails and splintered lumber. Beneath Stratum B was a layer of black, coal-stained sandy fill, Stratum D, ranging in thickness from 4 to 12 inches and containing a small amount of domestic debris, including fragments of porcelain, bottle glass, shoe leather and cow bone. Below Stratum D, Stratum E consisted of a 1 to 6 inch layer of dark brown decomposed wood. Beneath this woody stratum lay Stratum G, a 6 to 12 inch layer of black sandy loam heavily mixed with coal and cinder. Stratum H, below, was a brown sandy clay, probably a redeposited subsoil, which was not fully excavated due to the discovery of Feature 1, lying at a depth of 48 inches.

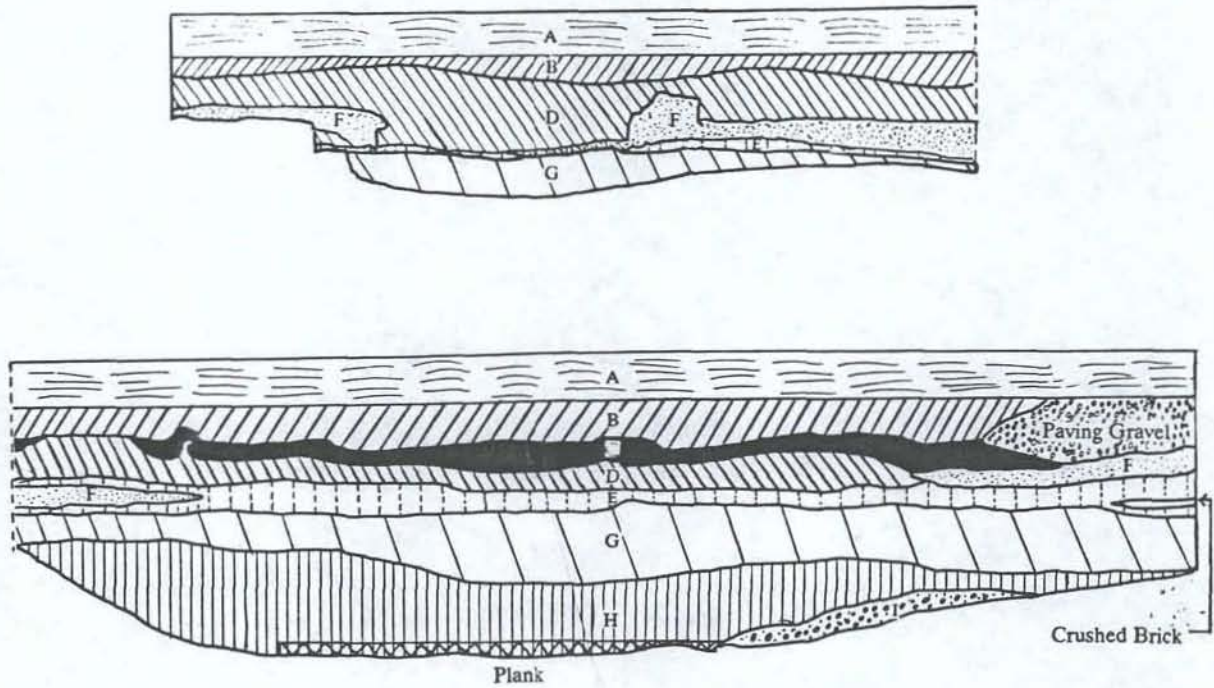
Interspersed with these major fill layers were several discontinuous strata or lenses. Between Strata B and D in the south half of the trench, Stratum C was a thin, 2 to 4 inch stratum of redeposited gray clay subsoil. In the northern half of the trench, Stratum F was an irregular lens of sandy ash and gravels lying between Strata D and E. At the base of the trench profile, at its extreme south end, Stratum I was a section of lighter brown sandy clay underlying a portion of Stratum H.

Feature 1. Of greatest interest in Trench 1 was a pair of parallel timbers, designated Feature 1 (*Figure 26*), lying at a depth of 48 inches below grade in the brown sandy clay fill of Stratum H. The timbers were oriented at a 5 to 10 degree angle to the trench wall (the trench running parallel to the current property line) and first appeared 15 feet 6 inches from the north end of the trench. Neither beam was fully exposed by trench excavation. One extended outward from the west wall of the trench, visible for only about 4 1/2 feet of its length, at which point it re-entered the wall. The second extended out from the east wall running 17 1/2 feet and disappearing beneath the south end of the trench, at which point the beam was at least 18 inches in width.

Both beams appeared to have been saw-cut on the horizontal plane, while the exposed vertical planes appeared rough hewn. In the portion of the trench where both timbers were visible, they were separated by a distance of between 8 to 10 inches. Two smaller pieces of wood were noted within this space, one a 2 foot section which may have been a fragment randomly pressed into the clay fill, and the other a roughly circular, saw-cut, post-like section with an average diameter of 5 inches. Two cut iron spikes were recorded in association with the feature, one loose in the fill (Stratum H) and the other embedded in one of the beams, securing a rotted plank of undetermined size.

Trench 2 was located in the southwest corner of the property, in a portion of the study area which lay outside the eighteenth-century wharf site. Testing in this location was aimed primarily at the investigation of buried natural surfaces, in hopes of ascertaining their depths and depositional integrity, and testing for the presence of prehistoric cultural materials. Trench 2 measured 12 feet by 3 feet, oriented east-west.

The profile of Trench 2 revealed a series of sandy loam fill layers mixed with either coal and cinder or heavy demolition debris, such as brick and iron fragments,



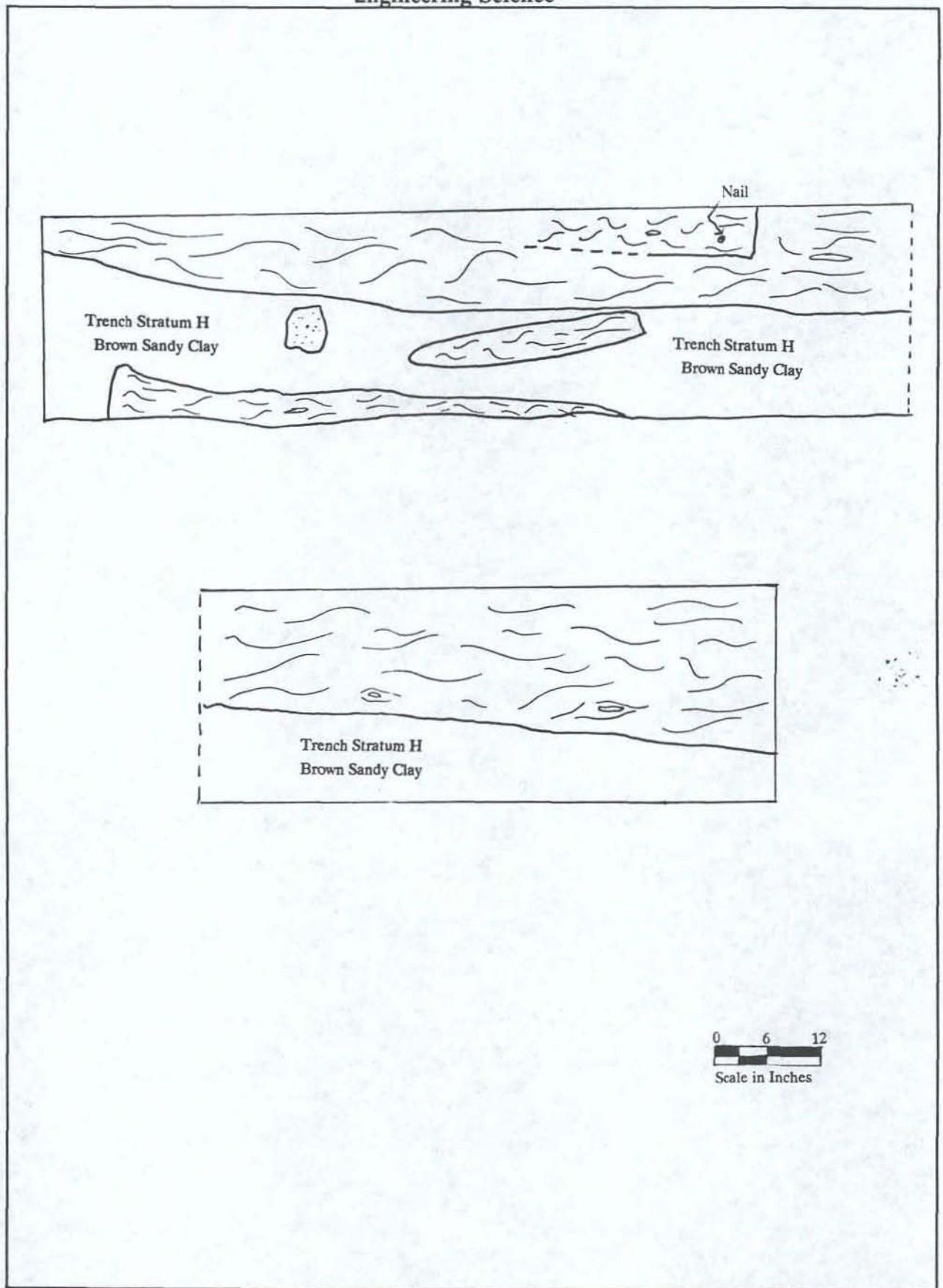
Key:

- A. Edge of Concrete Slab
- B. Brown Sandy Clay
with Gravel and Debris
- C. Gray Clay
- D. Black Sand, Gravel and
Cinder with Domestic Debris
- E. Dark Brown Decomposed Wood
- F. Light Brown Sand, Gravel
and Ash
- G. Black Sand with Coal
and Cinder
- H. Brown Sandy Clay
- I. Orange Brown Sandy Clay

0 1 2
Scale in Feet

Source: Engineering-Science

Figure 25
Trench 1: East Profile



Source: Engineering-Science

Figure 26
Trench 1: Plan View of
Feature 1

and large chunks of concrete, all under a thin surface layer of gravel and iron slag. Beginning at an average depth of 2 1/2 feet were several layers of dark greenish gray sands and silts: initially, a fine grained sand and silt mix combined with small mussel shell fragments to 3 feet 8 inches below grade; a coarser, dark gray sand and gravel layer containing whole, unopened mussel shells to 4 feet 9 inches; and more fine grained sandy silt with mussel shell bits to 7 feet. At this depth, coarse grained gray sand was encountered. Excavation was halted at 8 feet due to rapidly rising ground water and slumping trench walls. No artifacts were observed below the sandy rubble strata.

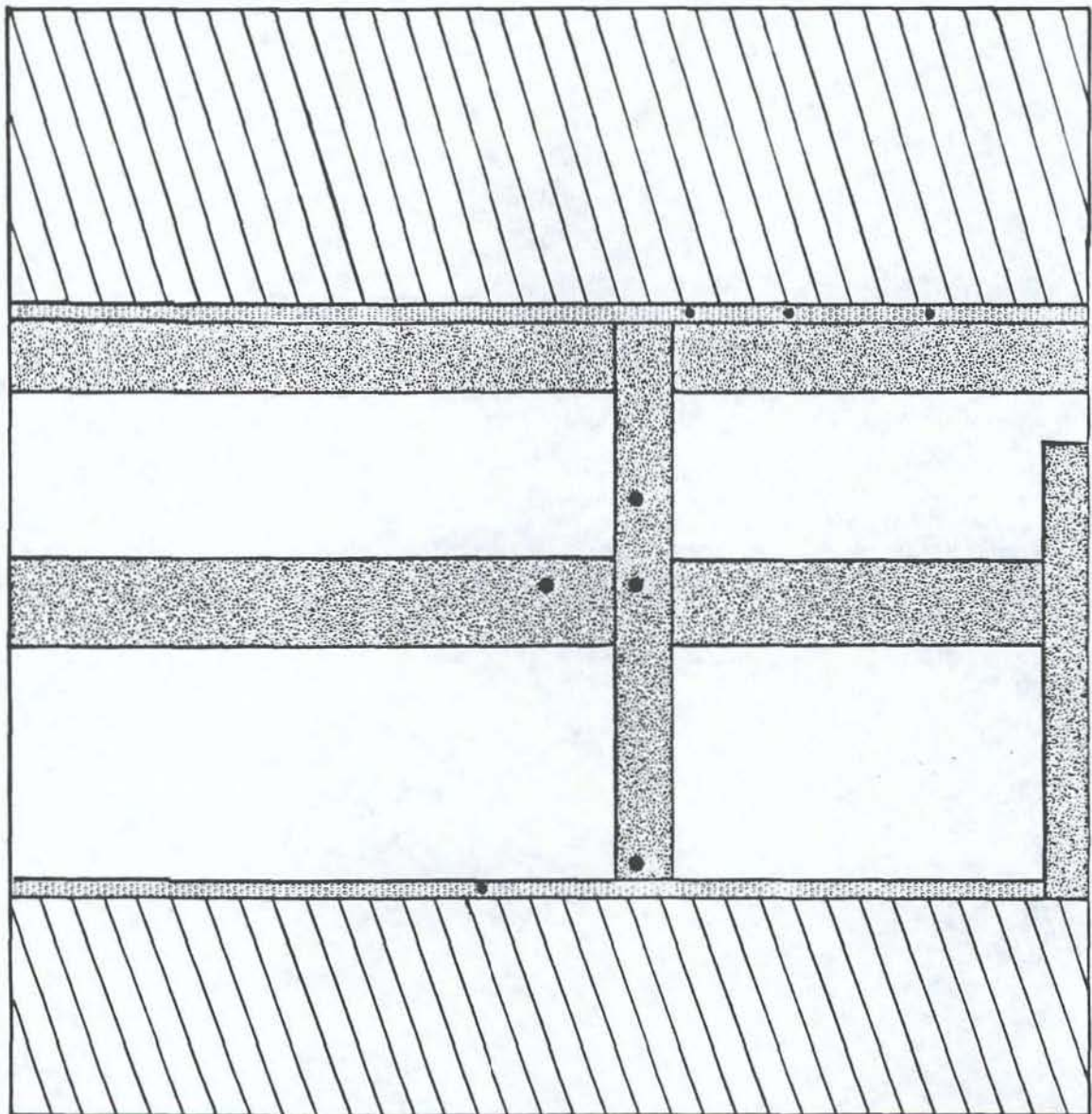
Trench 3 was placed 70 feet northeast of Trench 2 to further examine fill sequences in the area south of the early wharf. Originally excavated as an 8 foot by 3 foot trench oriented north-south, Trench 3 was eventually extended to a 14 foot by 14 foot square.

The fill layers revealed in excavation were almost identical to those in Trench 2, with strata of black, coal-stained sands and gravels interbedded with layers of yellow brown gravels mixed with heavy demolition debris to a depth of 2 1/2 feet below grade. At this point, greenish gray sandy silts occurred. At a depth of approximately 40 inches below grade, Feature 2, an apparent section of timbered cribbing, was encountered within the green silt. Excavation was continued to a final depth of 5 feet, a level at which the feature filled the bottom of the trench.

Feature 2 (*Figure 27*) consisted of a series of horizontal, perpendicularly laid timbers forming part of a crib-like structure lying in sandy silt fill at the base of Trench 3. Two 8 inch by 6 inch (width x thickness) beams were visible approximately 5 feet apart and running roughly north-south. Directly below, lying at right angles, were three larger beams, two of which measured 12 inches in width (the third was not fully excavated from the south wall of the trench). All three were 6 inches thick. A number of cut iron spikes were embedded in the wood, some at junctions between beams, while others appeared to have secured now missing attachments. Running parallel to the lower beams (east-west) were two 3 inch by 18 inch planks, set on their sides in the manner of bulkheads, lying approximately 10 feet apart, one at either end of the trench excavation (north and south). They were held in place by 1 inch diameter ferrous alloy rods. The wood was in a poor state of preservation, so that it was impossible to tell if the rods had been driven through the wood, or if guide holes had been drilled and the planks fitted over the rods, though the latter seems most likely. Similarly, the larger timbers were not well-preserved, but from general appearance they seemed to have been mill-cut. Fill between the cribbing sections was greenish gray sandy silt, very wet, heavy and unconsolidated. The initial depth of the feature, at the top of the bulkhead planks, was 40 inches below grade. The heavy cribbing lay at a depth of up to 60 inches.

Trench 4 was located 25 feet east of Trench 1, between a section of curved railway siding and a rectangular footing, the remains of an earlier water tower. The site was chosen as a location close to Trench 1 yet beyond nearby obstructions, enabling further investigation of the buried timbers of Feature 1. Trench 4 measured 24 feet by 2 feet, oriented east-west, perpendicular to Trench 1.

Stratigraphy in Trench 4 was similar to that in Trench 1, with a series of continuous gravel, cinder or ash deposits lying under a recently deposited crushed gravel surface (*Figure 28*). Stratum A, the surface deposit, extended to an average depth of 4 inches. Stratum B was a 6 to 9 inch layer of grey sand and gravel lying over Stratum C, an orange brown sandy clay fill 12 to 21 inches thick, containing

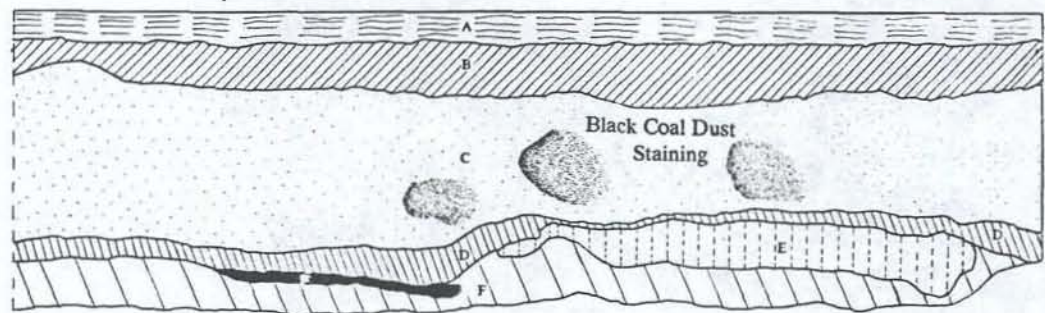
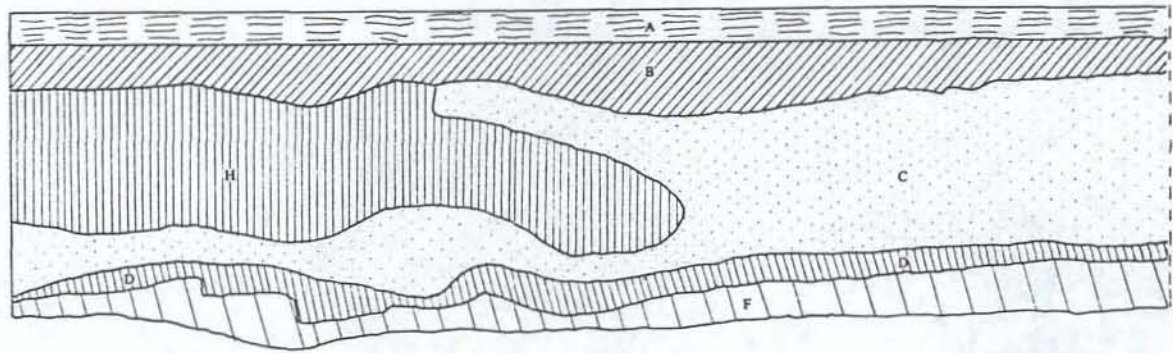


Key:
A. ●-Spike
B. ●-Pole

0 1 2
Scale in Feet

Source: Engineering-Science

Figure 27
Trench 3: Plan View of
Feature 2



- Key:
- A. Light Brown Sand and Gravel
 - B. Gray Sand and Gravel
 - C. Orange Brown Sandy Clay
 - D. Dark Brown Sandy Loam with Crushed Coal
 - E. Light Gray Ash
 - F. Dark Brown Decomposed Wood
 - G. White Clay
 - H. Black and Brown Mottled Sandy Clay with Gravel and Wood Debris

0 1 2
Scale in Feet

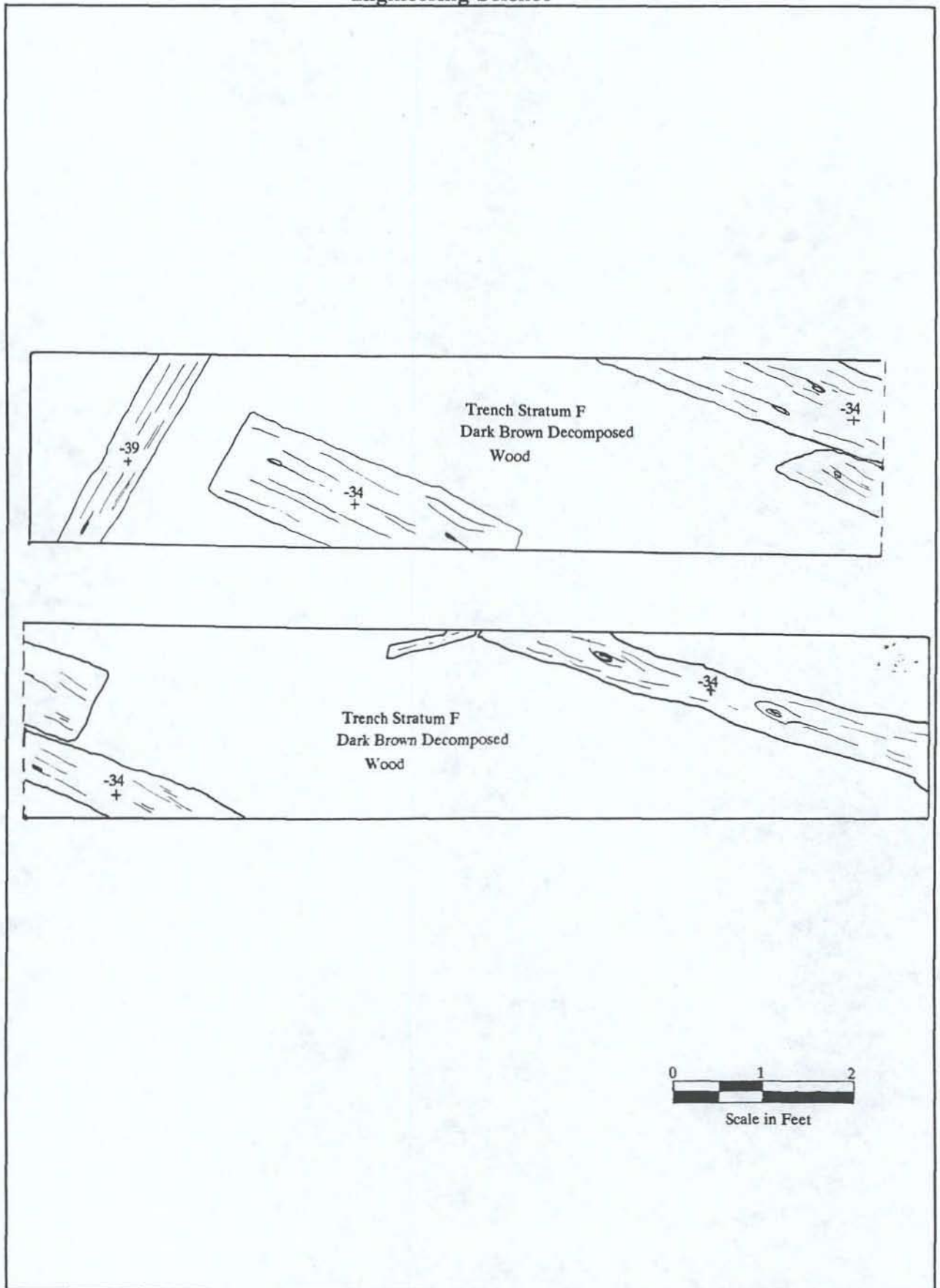
brick fragments and mottled areas blackened by coal dust. Stratum D was a thin, 2 to 4 inch deposit of dark brown to black sandy loam mixed with coal and cinder lying below Stratum C. At the base of the trench, Stratum F consisted mainly of dark brown decomposed wood. Excavation was halted within Stratum F, at a depth of between 34 and 39 inches below grade, upon the discovery of Feature 3, a series of roughly parallel timbers.

Interspersed with the continuous fill strata in Trench 4 were several irregular, lens shaped deposits. Stratum E was a 6 inch lens of gray ash lying between Strata D and F in the western half of the trench. The deposit contained a small amount of gravel, cinder and bottle and window glass. Further east along Trench 4 between Strata D and F was a thin, 1 inch layer of white clay, Stratum G. At the eastern end of the trench, Stratum H, an extensive 12 to 15 inch deposit of black and brown mottled sandy clay and gravel containing large amounts of splintered lumber and other woody debris, appeared as an intrusion between Strata B and C.

Feature 3 (*Figure 29*) consisted of a series of parallel timbers embedded in a layer of dark brown decomposed wood, trench Stratum F. The beams ranged in width from 6 inches to 12 inches, and lay at a depth of 34 inches below grade. Only two beams, near the center of the trench, were contiguous. The space between the others ranged from 2 to 3 feet. At the east end of the trench, a 5 to 6 inch wide beam was oriented approximately perpendicular to the other beams, and lay at a depth of 39 inches. No artifacts were found in association with the feature in the west end of the trench, but numerous fragments of bottle glass, window glass and domestic ceramics, along with several cut nails and brick fragments, were recovered from the woody fill (Stratum F) in the east end of the trench. In addition, 4 tapered wooden pegs were recovered from the same area. Though not well preserved, they appeared to have measured 8 1/2 inches in length and to have been between 1 1/2 and 1 3/4 inches wide at the widest point, near the center of the peg. The tapered ends showed evidence of threading. Considering the symmetry exhibited by the better preserved pieces, the pegs are presumed to have been lathe turned. These pegs most probably are example of the wooden insulators manufactured on the site during the early 1900s by the National Electric Supply Company.

Trench 5 was excavated 6 feet west of the northwest corner of Trench 3 to test the extent of Feature 2, the wooden cribbing at the base of that trench. Trench 5 measured 8 feet by 7 feet and was excavated to a depth of approximately 7 1/2 feet.

Stratigraphy in this location was nearly identical to that in Trenches 2 and 3, with gravelly sands containing heavy demolition rubble (Stratum B) interbedded with a layer of coal and cinder (Stratum C) also containing rubble. The surface deposit (Stratum A) consisted of a thin layer of gravel and iron slag. The rubble fill layers ran to a depth of 2 1/2 to 3 feet below grade, at which point there was a comparatively sharp break to a green to gray brown sandy silt containing mussel shell fragments and a fragment of blue bottle glass. This deposit (Stratum D) was wet and relatively unconsolidated, and extended to a depth of 7 feet below grade. Stratum E, below, consisted of medium brown, coarse grained wet sand mixed with small bits of what appeared to be decomposed brick, and a fragment of blue transfer printed whiteware. Excavation was halted at approximately 7 1/2 feet due to uncontrolled groundwater influx and wall slump. No wooden cribbing was observed in Trench 5.



Source: Engineering-Science

Figure 29
Trench 4: Plan View of
Feature 3

Trench 6 was located along the southern edge of the concrete slab, 60 feet south of Trench 1. The trench excavation was oriented east-west and measured 13 feet by 2 feet.

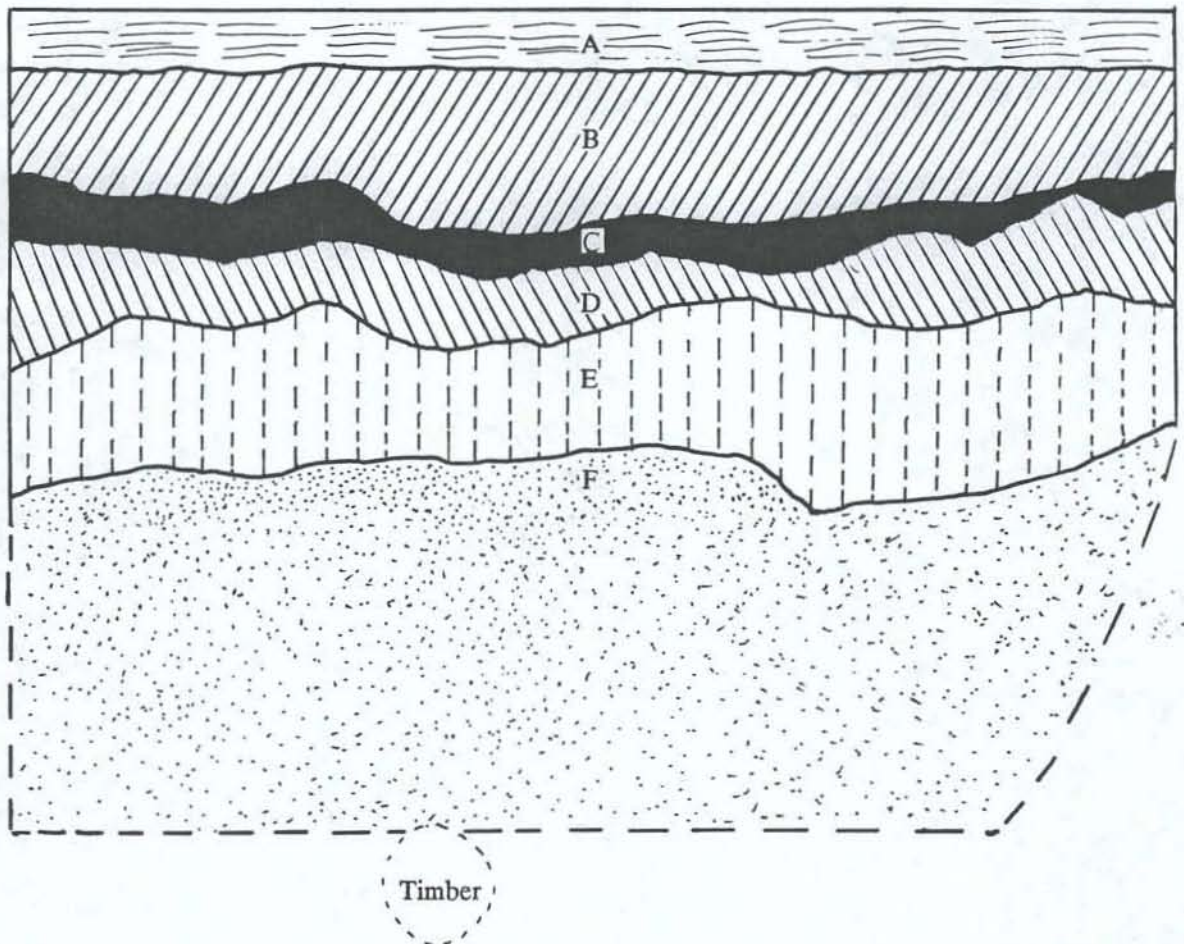
The stratigraphic section revealed in Trench 6 indicated the presence in this portion of the study area of several continuous layers of gravelly fill atop a base of silty sandy clay. The surface layer, Stratum A, consisted of crushed gravels and sand to a depth of 4 inches. Below, Stratum B was a 6 inch layer of smaller gravels and sand stained black by large amounts of coal and coal slag. Stratum C was a 2 inch layer of orange brown gravel and clayey sand lying over Stratum D, a 7 inch deposit of yellow gray sandy clay and gravel. Stratum E consisted of approximately 10 inches of cinder, crushed coal and coal slag, holding groundwater which had been unable to percolate through the underlying clays. Stratum F, below, was described as a greenish gray silty sandy clay. The final depth of excavation was 5 feet, leaving the base of Stratum F unexcavated. Other than coal and cinder, no cultural materials were observed in Trench 6.

Trench 7 was located in the northwest corner of the study area, along the north wall of the Federal Building extension. The trench measured 11 feet by 4 feet, oriented east-west, and was excavated to a depth of approximately 7 1/2 feet.

The ground surface in this portion of the project area was covered by a 6 to 7 inch layer of partially reinforced concrete which was badly cracked in some spots. A section of concrete large enough to allow trenching was laboriously removed by the backhoe (at the cost of two of the teeth from the digging bucket). Below lay a 12 to 18 inch layer of brown gravelly loam, Stratum B, mixed with architectural debris such as brick, mortar, concrete and iron hardware (*Figure 30*). Stratum C was a 4 to 6 inch layer of compact gray brown sandy clay. Below Stratum C was a 6 to 14 inch layer of black sandy loam mixed with crushed coal and coal slag, Stratum D. This deposit contained late nineteenth and early twentieth century domestic debris including fragments of pearlware, yellow ware, ironstone, porcelain, whiteware, porcelain doll and kaolin pipe fragments, various types of bottle glass, window glass, butchered animal bone, and clam and oyster shell. Stratum E, below, consisted of gray brown clayey sand containing gravels and small pebbles, in a deposit ranging from 12 to 18 inches thick. Underlying Stratum E, Stratum F was a medium brown silty sand which appeared very wet and unstable.

Excavation was halted at a depth of approximately 4 1/2 feet so that the trench could be safely entered for documentation of the upper portions of the profile section. With that accomplished, excavation of Stratum F continued. The deposit was increasingly loose and watery with depth, eventually attaining the consistency of wet cement. At a depth of 7 1/2 feet, a large round timber was revealed, extending north-south into the side walls of the trench. The excavation was not sufficiently stabilized at this point to allow close inspection, and before any further work could be done, the walls of the trench caved in, filling the excavation with soupy, silty sand which could not be completely re-excavated. It was estimated that the beam at the bottom of the trench measured between 12 and 18 inches in diameter.

Trench 8 was located in the northwest corner of the study area between the rail spur running north-south along the Federal Building loading dock and a parallel retaining fence along the western property line. The trench measured 10 feet by 2 feet, oriented north-south, and was excavated to a depth of 5 1/2 feet.



Key:

- A. Concrete Slab
- B. Brown Sandy Loam,
Gravel and Debris
- C. Gray Brown Sandy Clay
- D. Black Sandy Loam with
Cinder and Domestic Debris
- E. Gray Brown Clayey Sand
and Gravel
- F. Brown, Unconsolidated
Silty Sand

0 6 12
Scale in Inches

Source: Engineering-Science

Figure 30
Trench 7: North Profile

The ground between the rail line and the fence was covered by approximately 5 inches of deteriorated concrete, which was removed with some effort by the backhoe. Below lay 5 inches of yellow brown sandy clay fill, Stratum B, which contained numerous small quartz and quartzite cobbles. Stratum C, below, consisted of dark gray brown sandy clay containing gravel and brick rubble. Stratum C extended to 2 feet below grade and lay atop a 5 inch thick layer of brown coarse-grained sand, Stratum D. The final layer excavated was Stratum E, the same brown silty sand identified as Stratum F in Trench 7, a deposit which became increasingly wet and unconsolidated with depth. At a depth of 5 1/2 feet, the walls of the trench collapsed in a manner similar to the cave-in Trench 7.

Trench 9 was placed 40 feet south of Trench 4, midway between the property line fence to the west and the standing water tower to the east. The location was chosen to test the amount of disturbance in this portion of the site and the possible extent of the timber alignments in Trenches 1 and 4 (Features 1 and 3 respectively). The excavation measured 10 feet by 2 feet, oriented east-west, and was taken to a depth of approximately 8 feet.

The surface layer, Stratum A, consisted of 8 inches of crushed gravel. Stratum B, below, was a 3 to 4 inch layer of yellow brown sand and gravel mixed with small quantities of coal slag. Below, Stratum C consisted of 7 inches of gray brown sand with brown clay mottling. Stratum D was a thin, 2 inch layer of gray clay lying over Stratum E, which consisted of black sandy loam containing coal, cinder, brick and other architectural debris, bottle glass and a fragment of undecorated porcelain. Below Stratum E lay a series of cleaner sands and clays. Stratum F, a gray and brown mottled sandy clay, began at 28 inches below grade and ran to 36 inches in the west portion of the trench and 41 inches in the east. Stratum G, a gray and dark brown mottled clay sand deposit, continued to a depth of 60 inches. The final layer, Stratum H, was a gray and orange brown mottled silty clay which was damp and plastic. Excavation ceased at approximately 8 feet below grade without reaching the base of Stratum H.

VI. ANALYSIS OF FINDINGS

The southwest corner of the study area lies within the northern bounds of Battery Cove, reclaimed between 1910 and 1912 by the Army Corps of Engineers for the eventual construction of the Virginia Shipbuilding Corporation. Testing was carried out in this location with the expectation that previously existing topography would be more easily accessible than in the area immediately to the north; i.e., there were no predicted wharf structures here, and no concrete slab or rail sidings covered the ground surface. Excavation was directed toward determining the nature and depth of fill deposits, and toward testing the underlying intact surface for evidence of early historic or prehistoric cultural activity.

The uniform stratigraphy revealed in Trenches 2, 3, and 5 in this area suggests that filling was accomplished in only a few wide-ranging episodes, with large amounts of similar fill materials spread across a broad area. The first 2 1/2 to 3 feet was comprised of dry fill, containing gravels, coal and cinder, and heavy demolition rubble. Judging from the nature of the structural debris present, consisting in part of brick bonded with Portland cement, concrete, wire nails, and plastic insulated electrical wiring, these deposits were probably related to the demolition of the shipyard in the second quarter of the twentieth century. Presumably, much of the larger debris had been hauled away, while the remainder was used to slightly raise and level the ground for later use.

Underlying the rubble fill strata were deep greenish gray silts, which first appeared to be natural alluvial deposits. The silt contained layers of medium grained sand, suggesting periods during which the river channel ran closer to the shoreline bringing in and depositing heavier suspended materials. Closer inspection showed the presence of mussels in the form of both small fragments and complete, closed shells. Normally a shallow burrowing mollusc, these mussels were observed at depths of as much as 7 feet, suggesting that the silts were in fact redeposited. In addition, the limited artifactual material from Trench 5 (Stratum D) appears to provide further evidence of redeposition.

It is not possible to say, at present, whether the coarse sands lying below the silt strata, at a depth of 7 feet or more, were intact, natural sands. Questions exist as to the nature of the artifactual materials within the deposit. The brick-like fragments found in Trench 5 (Stratum E), for example, were in such a state of deterioration that identification was not positive: the material could, in fact, have been bits of natural clay within the sand. Likewise, the single ceramic fragment found in this stratum may have been intrusive: a measure of uncertainty remains on this point as well, since at such depths, tightly controlled backhoe excavation is impossible, no matter how skilled the operator. Finally, only a small portion of the stratum was excavated, due to groundwater influx and wall slump, making the sample size quite small.

At the same time, the deposit could indeed represent the natural shore bottom as it existed before twentieth century reclamation began. The artifacts would, in such a case, have been deposited by any of various means during earlier periods of heavy activity in the wharf area. Support for such a theory may come from work conducted by Espey Huston, environmental consultants, done simultaneously with the current archaeological survey. Soil testing for hazardous wastes was carried out in the south and southeast sections of the property, beyond the buried storage tanks and well into the area occupied by the twentieth century

shipyard (Raymond R. Rose, personal communication 1988). In general these test borings revealed sandy, gravelly fill and rubble to an average depth of 3 feet, followed by sands and clay silts interpreted as riverbottom deposits to a depth of 12 feet or more, followed by 6 feet of coarse sand, and, finally, silty clay to 19 feet, the lowest depth required by the testing criteria. In three separate bore-holes, wood, in one case charred, was encountered as a 4 to 6 inch thick layer at a depth of 15 to 16 feet. The slope indicated by the relative depths of the coarser sands, as recorded in Trenches 2, 3 and 5 (7 feet) and in the Espey Huston borings (12 feet), is not improbable as the original cove bottom. The base of the sand deposit, at 18 feet or more, is as much as 12 feet below mean sea level, well below the expected riverbottom at this point.

It appears, then, from the evidence at hand, that the upper rubble fill layers sit atop river silts dredged from the Potomac channel by the Corps of Engineers in the early twentieth century, and that the underlying sands may form the basin of the original cove.

Feature 2, the section of timbered cribbing in Trench 3, was encountered at a depth of 3 1/2 feet, embedded in the greenish gray silty fill. A wharf was not expected in this portion of the site, so far from the eventual waterfront. It is possible that this feature may have served as an understructure set to stabilize the silt fill for an unrecorded wharf, perhaps a temporary structure built during the initial phase of the filling of the cove for use as a staging point for later operations. The timbers in Feature 2 have the appearance of a cribbed wharf, roughly analogous to wharves excavated in, for example, Boston, at the Charlestown Navy Yard (Pendery 1982), or the Carlyle-Dalton wharf further north along the waterfront in Alexandria (Heintzelman-Muego 1983). But the visible construction techniques, such as saw-cut or milled wood, and heavy metal rods supporting vertical planks, suggest a later construction date than these examples.

Another possibility is that the feature is not in primary deposition, but was part of an earlier wharf or pier which was only partially disassembled and later placed in its current position as a means of disposal, either before or during the reclamation of the cove. Previously mentioned photographs of the study area taken in the mid-nineteenth century by Russell (*Figure 15*) show similar beams and planks being prepared for wharf construction during the early days of the Civil War. It is unclear from the photos whether the planks, which appear to be of similar dimensions to these in Feature 2, were set on edge as portions of bulkheads or as joists under a wharf or pier surface, or were used in the decking itself.

The wood fragments recovered from the Espey Huston bore tests can be accounted for in one of several ways. They may, for example, represent the positions of more deeply buried wharf structures. If so, the structures were probably associated with the early twentieth century shipyard complex. Alternatively, it is reported that sections of one or more barges, sunk in the main river channel, may have been disposed of in the cove area during the filling process (Steven J. Shephard, personal communication 1988). The wreckage fragments may, then, have settled several feet into the sandy bottom under the weight of the overlying fill. And finally, the wood samples could be nothing more than a layer of general structural debris lying below the silt fill.

Trenches 6 and 9, to the north of Trenches 2, 3 and 5, lie within the area of the early wharf. Both excavations indicate that the stratigraphy in that area consists of recent demolition rubble lying over layers of coal, coal ash and cinder. The

presence of considerable deposits of coal is probably related to late nineteenth century activity on the property. Coal was a major fuel source for the pumps and capstan engines operated by the marine railway. In addition, a coal merchant, J.P. Agnew, owned the railway after 1883 and shipped a reported half million tons of that material per year to New England and the South, much of it through Alexandria. Thus, large mounds of coal and coal residue must have been situated in various spots around the property (one such pile is, in fact, recorded on a late nineteenth century site map: Sanborn 1891). The coal-rich fill strata observed in the several trenches excavated in the current survey, including Trenches 6 and 9, are likely the remnants of these piles, eventually spread across the site as fill.

Underlying these fill layers, the clay strata in Trenches 6 and 9 would at first appear to be well-structured, undisturbed subsoil. Yet if the hypothesis as to the depth of silt fill further south, in the cove section of the study area (Trenches 2, 3, and 5), is correct, either the original land surface, before the creation of Harper and Keith's Wharf, sloped up dramatically from the cove, or the clay is merely another layer, albeit quite deep, of fill.

Trench 7 was originally planned for excavation further east along the north side of the Federal Building extension, near the mapped location of Madison Street and George Richardson's eighteenth century lot. The eventual position of the trench was dictated by flaws in the modern concrete slab, which allowed its partial removal using the backhoe bucket. The domestic debris found in the trench, mixed with coal and coal residues in Stratum D, could be of site-local origin. While there is no record of domestic structures on the wharf, there may well have been one or more families, of marine railway personnel, for example, living on the property periodically, their refuse eventually finding its way into later fill deposits.

The wood at the base of Trench 7 was only briefly glimpsed before the walls of the excavation abruptly caved in. Yet the timber appeared to have been round and between 12 and 18 inches in diameter. It seems to lie too far west to have been part of the "line of logs" along Richardson's dock, though, despite maps of the wharf, the precise location of the dock itself is uncertain. The log may also have been an interior cross-member in an early crib wharf, or merely wood disposed of in the original wharf fill. One other possibility is suggested, again, by the Russell photographs of the area in the early 1860s. The pontoon barges which Haupt constructed for the transshipment of rail cars to Aquia Creek employed timbers of apparently similar size and shape as upper cross-members. It is possible that Trench 7 lies within a band of fill representing a northern extension of the wharf constructed in the late nineteenth century. Should this be the case, the timber at the base of the trench may have been part of one of the barge sections used as wharf fill.

The materials revealed in Trenches 1 and 4 are potentially the earliest encountered in the present investigations. The upper layers in the trenches are typically 1) early-to-mid-twentieth century demolition debris, such as the sandy rubble layers observed in both trenches (Strata B and C), or the gravel and rubble intrusion at the east end of Trench 4 (Stratum H), or 2) nineteenth and twentieth century industrial waste (coal and coal slag). The limited amount of chronologically diagnostic artifactual material makes specific depositional periods difficult to determine. The strata of decomposed wood may, like the coal deposits, be associated with the marine railway use of the property. Several maps from the late nineteenth century indicate wood shavings were used as an alternative fuel source, and that "stove wood" was stored in the open alongside the railway. Similarly, the National Electric Supply Co., who occupied the property at the end of the first

decade of the twentieth century, produced large amounts of wood shavings in the manufacture of wooden insulator pins. These pins were also used as fuel. Thus, while no clear-cut artifactual evidence was observed in the deposit, the buried wood strata may be the remains of old, rotted wood ricks or mounds of shavings mixed into the fill after the marine railway was finally abandoned and dismantled after 1912.

At 4 feet below grade, the timbers which make up Feature 1 (Trench 1) lay at a level consistent with the expected location of the early wharf structure. The size and horizontal placement of the beams indicate that the feature is probably in primary deposition, but little else could be ascertained. Too little of the beams was exposed to allow a determination of the extent of the feature, or to provide data on structural characteristics which might suggest the type or portion of the structure represented-- wharf decking, or the interior of a solid crib wharf, for example. The date of deposition is also uncertain. The cut spikes associated with the feature do not necessarily appear to be an integral part of the structure; i.e., they could have attached later additions to an original wharf deck.

The timbers in Trench 4 (Feature 3), were encountered approximately 1 foot higher than those making up Feature 1. Except for their apparent alignment, the beams would seem to be in secondary deposition, thrown into the fill as a means of disposal. They were embedded in a layer of woody fill, which was possibly related to wood used as fuel for the marine railway and which contained what appear to be early twentieth century artifacts. The threaded, lathe turned pegs found at the east end of the trench were probably not trunnels used in wharf construction, but rather the insulator pins reportedly manufactured by the electric supply company in the early twentieth century. In the end, further excavation is needed to determine the extent and possible articulation of the timbers before a definite assessment of their significance can be reached.

CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

The Phase I study of the Ford Plant property completed by John Milner Associates, Inc. (Cheek and Glendening 1986) was solely an archival study involving no on-site field investigations. Thus, the current Phase IIa project included initial site testing to determine the presence or absence of archaeological remains, as well as preliminary efforts aimed at the determination of site significance. Due to the amount of surface obstruction encountered at the site, the scope of Phase II significance assessment was somewhat limited.

As indicated earlier, the Alexandria waterfront may have seen its earliest human inhabitants in prehistoric times. The presence of intact, natural deposits, with potential significance to prehistoric activity, was suggested by trenches excavated in the southern portion of the property. Prehistoric deposits may also exist farther north, in the area occupied by the historic wharf, but the discovery of significant historic materials in the trench excavations there made sufficiently deep testing impossible. Considering the relatively small number of prehistoric sites known in the Alexandria area, and in particular within the city itself, any additional data which might be available at the Ford Plant site would considerably increase our understanding of Alexandria's prehistory.

Alexandria's historical development began with a maritime focus, the early settlement operating as a colonial tobacco port and becoming an important regional market for the shipment of other products such as grains, livestock, fish and lumber. The study of the city's historic development has been enhanced by the research approach adopted by the staff of Alexandria Archaeology, an approach which considers Alexandria's growth on a city-site basis, and subdivides the city's history analytically into several politico-economic episodes (Cressey 1978; Cressey *et al.* 1982). The city-site concept concentrates on a broad, areal view of urban development, viewing the city and its environs as a single context:

City-site is a term which denotes the area within an urban settlement and the areas which are tied to it spatially, socially, and economically. Using this city-site approach it is possible to inquire into urban developmental processes and into how the parts are distinguished and how they articulate in the whole (Cressey 1985: 12).

Within this city-site context, three analytical periods have been delineated: Mercantile Capitalism (mid-eighteenth century); Indigenous Commercial Capitalism (late-eighteenth century to mid-nineteenth century); and Industrial Capitalism (mid-late nineteenth century to early twentieth century) (Cressey *et al.* 1982). The archaeological resources which were shown to remain on the Ford Plant property, both the fill deposits and possible structural features, have the potential of contributing to the understanding of the development of the city with regard to all three of these periods.

Physical evidence of the earliest period, Mercantile Capitalism, may be fragmentary, but its research potential can be predicted through analogy with studies at other ports; in particular at Charlestown (Pendery 1982), New London (Artemel *et al.* 1984), and at the Carlyle-Dalton wharf in Alexandria (Heintzelman-Muego 1983). For example, the timbers comprising Feature 1 and the surrounding

fill, as well as other materials, such as the George Richardson dock should it be present north of the Federal Building, could provide insights into early construction and commercial activities along this section of the waterfront.

Viewing the matter more specifically, it has been shown that patterns of trash disposal in waterfront communities can be useful tools in the interpretation of land use and development (Artemel 1983). One of the most important physical features in such communities is, of course, the wharf. Wharves, slips and docks are informative archaeologically in that they tend to function in a manner similar to that of a trash pit, privy or well; that is, they are sealed deposits, containing refuse laid down during a specific period, often by the property owner or occupant. These features may often be constructed from or, possibly more relevant to this investigation, may contain structural materials either from nearby buildings or earlier wharf or pier construction, or timbers from wrecked or sunken boats or ships. Material used to fill the wharf structure may also contain locally generated refuse. An excavation in New York City, for example, revealed a large quantity of cut leather discarded by a shoemaker who had occupied the site (Pickman and Rothschild 1983). Similarly, fill removed from the nearby Carlyle-Dalton wharf in the center of Alexandria contained artifacts from the early days of settlement in the city (Cheek and Glendening 1986). Much of the fill for Harper and Keith's wharf was derived from the embankment above Union Street. As such, it would be expected to be fairly clear of cultural debris. Yet from the earliest periods, houses have been situated along the bluffs overlooking the waterfront, and the slopes below provided convenient, if unsanitary by today's standards, trash disposal areas (Miller 1983). Thus, artifacts from the early Mercantilist period of the city's development may have found their way into the wharf fill at the present location.

Within the city-site context, data garnered from the wharf deposits in the current study area, which lies south of the city center, may be compared with those from the central Carlyle-Dalton wharf and from other waterfront excavations. Comparisons on a broad and sufficiently detailed scale have the potential of increasing our understanding of the sectoralization process described in the so-called Core-Periphery relationship, which contrasts the changing wealth and power bases in the center and peripheral areas of the city (Cressey 1983; Cheek and Glendening 1986).

With regard to later analytical periods, it appears that abundant materials remain from nineteenth century activities on the wharf site and in surrounding areas. While no deposits were specifically dated within that period, fill deposits and structural or non-structural features are present. Most abundant are materials related to the marine railway use of the property, use which began in 1849 at the transition point between the periods of Indigenous Commercial Capitalism and Industrial Capitalism. Data recovered from further investigations of these nineteenth century deposits thus offers insight into the development of the Industrial Capitalist era of the city's growth, and in particular its evolution from the preceding Indigenous Commercial configuration. Research into this dynamic period of Alexandria's history would use as a base existing studies of nineteenth century socio-economic change in the city (e.g., Cressey 1985; Shephard 1985).

B. Recommendations

Evaluation of the significance of archaeological sites is based on the criteria adapted for the National Register of Historic Places (36 CFR 60.6). The criteria are as follows:

National Register Criteria for Evaluation. The quality of significance in American history, architecture, archaeology and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and

- a) That are associated with events that have made a significant contribution to the broad patterns of our history; or
- b) That are associated with the lives of persons significant in our pasts; or
- c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant or distinguishable entity whose components may lack individuals' distinction; or
- d) That have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.6 and 800.10).

Site significance with respect to these criteria is generally addressed through a Phase II program of archival research and extensive on-site archaeological testing. Due to the lack of preliminary fieldwork carried out in the Phase I study, and to the amount of heavy obstruction encountered at the site, the current Phase IIa testing program was limited in its ability to fully assess the significance of the deposits on the Ford Plant property.

The research potential for archaeological resources within the project area is substantial. It has been demonstrated that data relating to the area's prehistory and to the several periods of historical development of the city may exist. Previous land use along this stretch of the Potomac appears to have left much of the information intact. Yet some, if not most, of these resources would be disturbed by proposed development. Thus, the following recommendations for the treatment of the cultural resources on the property are extended.

It is recommended that further testing be carried out in several sections of the property after the removal of concrete and iron rail obstructions. Testing should be conducted, for example, in selected portions of the southern section of the property, to more extensively investigate the natural soils in that locale and assess their significance in terms of area prehistory, as well as to further examine the timbered cribbing encountered in the current investigations. Further testing is also needed in the western and northern sections of the project area where subsurface features have been identified, to more fully explore those deposits, and in areas which were unavailable for testing during current work.

The proposed testing program should consist of backhoe assisted trenching to expose stratigraphy and subsurface features, and open excavations where necessary to reveal sufficiently extensive portions of discovered features to allow determination of their character and significance. All excavation planning should include the use of appropriate water control equipment for deep excavations. Testing would in part follow recommendations made as a result of Phase I research (Cheek and Glendening 1986), but would concentrate as much as feasible on early wharf deposits, the materials remaining from the construction and use of the late eighteenth century wharf which lie south, southwest and north of the Federal

Building extension. In addition, testing should be carried out in the area beneath the Federal Building when it is removed, to determine the amount of disturbance the erection of that struction caused to the underlying wharf deposits.