ARCHAEOLOGICAL INVESTIGATIONS OF THE ROBERT PORTNER BREWING COMPANY SITE (44AX0196), ALEXANDRIA, VIRGINIA

Prepared for:

Saul Centers, Inc.
Chevy Chase, Maryland

Prepared by:

Parsons Engineering Science
10521 Rosehaven Street
Fairfax, Virginia 22030

December 2002

EXECUTIVE SUMMARY

In the Fall of 1998 and Winter of 1999-2000, Parsons Engineering Science (Parsons ES) conducted Phase I and II archaeological investigations at the Portner's Brewery Site, located in the parking area at the rear of 600 North Washington Street in Alexandria, Virginia. The property was bounded by Wythe Street on the north, Pendleton Street on the south, St. Asaph Street on the east, and Washington Street on the west. The Portner's Brewery Site existed on this property during the mid-nineteenth and into the twentieth centuries. This study was conducted in compliance with the City of Alexandria Archaeological Standards, May 1990, *Guidelines for Preparing Archaeological Resource Management Reports*, and *The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*. All work was carried out in consultation with and overseen by the staff of Alexandria Archaeology.

Parsons ES conducted Phase I archaeological investigations in October and November 1998. The purpose of these studies was to determine if archaeological resources remained intact beneath the parking lots. After the analysis of historic maps of the project area, 11 trenches were excavated using a backhoe monitored by an archaeologist. These trenches were placed on the property where they could best intercept potential archaeological resources. Archaeological testing revealed the presence of 15 architectural features related to the use of the property as a brewery, including: the beer vault, where lager beer was produced; walls from several associated structures; and two deep features (wells or privies) that would have provided and stored water for use in the beer making process. However, no artifacts were found in direct association with any of the structures.

A Phase II archaeological study on the property in December 1999 and January 2000 utilized a backhoe to remove the asphalt parking surface and overburden from above intact archaeological resources. Forty-one additional features were identified and recorded in areas representing the 1868 brewhouse, the 1894 brewhouse and the north beer vault.

As part of the project, Timothy Dennée, a recognized local expert on brewing and breweries, conducted documentary research on both Portner's Brewery and the brewing process in general. Mr. Dennée's report comprises a separate document entitled *Robert Portner and His Brewery*. The interpretation of the features discovered at the Portner's Brewery site was based upon the findings of Mr. Dennée's research.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

I. INTRODUCTION

In the Fall of 1998 and Winter of 1999-2000, Parsons Engineering Science (Parsons ES) conducted Phase I and II archaeological investigations at the Portner's Brewery Site, located in the parking area at the rear of 600 North Washington Street in Alexandria, Virginia. The property was bounded by Wythe Street on the north, Pendleton Street on the south, St. Asaph Street on the east, and Washington Street on the west (Figure 1). The Portner's Brewery Site existed on this property during the mid-nineteenth and into the twentieth centuries. This study was conducted in compliance with the City of Alexandria Archaeological Standards, May 1990, *Guidelines for Preparing Archaeological Resource Management Reports*, and *The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*. All work was carried out in consultation with and overseen by the staff of Alexandria Archaeology.

Parsons ES conducted Phase I archaeological investigations in October and November 1998. The purpose of these studies was to determine if archaeological resources remained intact beneath the parking lots. After the analysis of historic maps of the project area, 11 trenches were excavated using a backhoe monitored by an archaeologist. These trenches were placed on the property where they could best intercept potential archaeological resources. Archaeological testing revealed the presence of 15 architectural features related to the use of the property as a brewery, including: the beer vault, where lager beer was produced; walls from several associated structures; and two deep features (wells or privies) that would have provided and stored water for use in the beer making process. However, no artifacts were found in direct association with any of the structures.

A Phase II archaeological study on the property in December 1999 and January 2000 utilized a backhoe to remove the asphalt parking surface and overburden from above intact archaeological resources. Forty-one additional features were identified and recorded in areas representing the 1868 brewhouse, the 1894 brewhouse and the north beer vault.

As part of the project, Timothy Dennée, a recognized local expert on brewing and breweries, conducted documentary research on both Portner's Brewery and the brewing process in general. Mr. Dennée's report comprises a separate document entitled *Robert Portner and His Brewery* (Dennée 2002). The interpretation of the features discovered at the Portner's Brewery site was based upon the findings of Mr. Dennée's research.

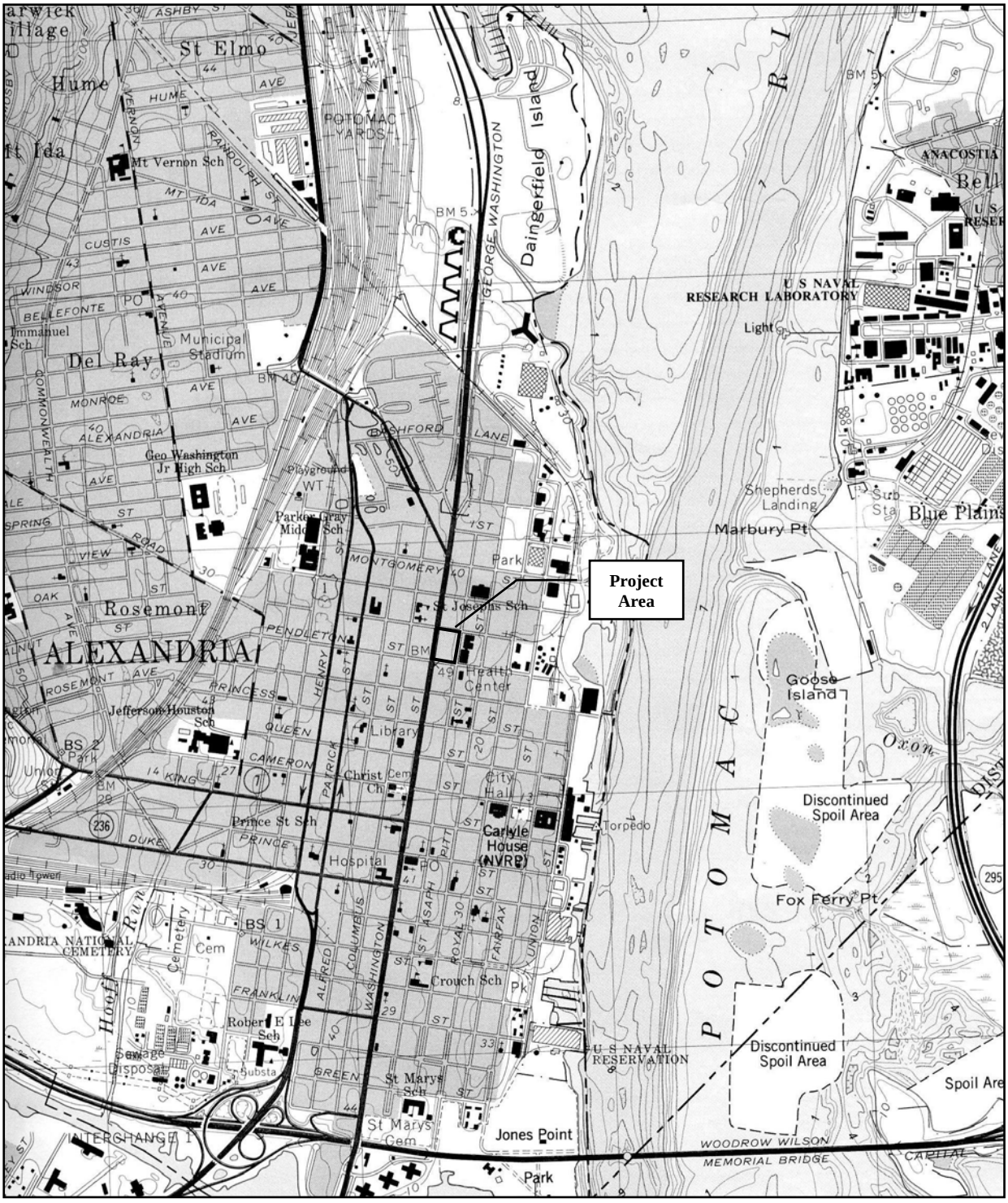

Figure 1. Project Area, 600 Block of North St. Asaph Street, Alexandria, Virginia

II. HISTORICAL BACKGROUND AND PREVIOUS INVESTIGATIONS

A. Historical Background

The Brewing Industry in Alexandria

Alexandria was established as a port town (incorporated in 1779) to benefit the inland tobacco farmers of Northern Virginia. The city quickly diversified and evolved into a mercantile center with small-scale industry by the late-eighteenth century. Alexandria was an urban center within a predominantly agrarian region. Initially dependent on slave labor and attracting relatively few immigrants, Alexandria failed to grow at the same rate or to the same extent as many other mid-Atlantic cities.

Through the early-nineteenth century, Alexandria boasted the range of businesses typical of a port town. In the early years, industrial organization typically consisted of the artisan, often in a home/shop environment, assisted by slave, apprentice, and/or wage labor. Entrepreneurs attempted to provide goods which, if shipped from Europe, were expensive or perishable (a protectionist tariff made American products more competitive with European items). It was in such an environment and for such a purpose that the native brewing industry arose.

During the eighteenth and early-nineteenth centuries, much of the beer and ale consumed in America was produced in the British brewing centers of London, Burton-on-Trent, and Glasgow. Although British ales were regarded as superior and could be produced cheaply, shipment across the Atlantic increased costs and permitted spoilage. Thus, American brewers hoped to compete with the British market on the basis of cost, freshness, and availability of their supply, though their efforts were often hindered by the limited availability of ingredients, skilled labor, and bottling supplies.

The origins of brewing in Alexandria date to as early as the 1730s when area plantations produced beer for their own use (Netherton 1982; Washington n.d.). By 1771, Andrew Wales established a commercial brewery in a leased public warehouse on Point Lumley at the foot of Duke Street (*Virginia Gazette* November 23, 1769 and July 16, 1770; Moore n.d.:69). Likely by 1775 he relocated to a site along what came to be known as Wales Alley, between present-day Lee and Union Streets (Moore n.d.:70,84,85,88; Fairfax Deed Book J:429). The Wales brewery, despite undergoing several changes of ownership in the 1790s, continued to produce "Strong and Small Beer," perhaps as late as 1809 (*Alexandria Gazette* January 4, 1790, May 26, 1801, November 16, 1802, and August 2, 1809; Miller 1991). By that time, two other breweries also opened: the Potowmack Brewery at the foot of Oronoco Street, and the Union Brewery at the southwest corner of Union and Wolfe Streets (Fairfax Deed Book X:593; *Alexandria Gazette* March 14, 1793). These companies closed in 1807 and 1821, respectively (*Alexandria Gazette* May 27, 1807 and July 14, 1821; Miller 1991).

Success for early American brewers was difficult since they not only competed with British imports, but with a multitude of other fermented and distilled beverages available such as wine and cider. Hard spirits, especially rum and whiskey, remained more popular than beer until the mid-nineteenth century (Clark 1929:481). Brewery proprietorships were often short-lived as

turnovers and advertisements offering to rent or sell breweries were common occurrences during the Federal period. One Alexandria brewery open for only a short period was that of John Oates, supposedly a former maltster to the King of England's brewery, and located on the outlying estate called Howard, now the Episcopal High School property (*Alexandria Gazette* November 25, 1817). Begun in 1817, Oates' operation closed the following year (Fairfax County Personal Tax Assessments). Apparently, brewing also took place around the same time at the Globe Tavern of Joseph Milburn and his successor, John Lawson (*Alexandria Gazette* May 24, 1814 and September 14, 1822; Miller 1991:334).

For most of the 1820s, there was no beer commercially produced in Alexandria. About 1831, however, brothers James and William Henry Irwin established an ale brewery on the waterfront at the foot of Wolfe Street, across from the former Union/Entwisle brewery (Alexandria Deed Book T-2:56). Their business grew quickly and, at an eventual 3,000 barrels annual production (one barrel equals 31 gallons) and a regional market area of about 1,000 square miles, it perhaps became the largest brewery in the South (*Alexandria Gazette* June 14, 1843 and May 4, 1839; Hurst 1991:12, 15; Elliott & Nye 1852). The Irwin brewery also exported ale to the West Indies. Although there were already larger breweries even in America, by the standards of the day this was indeed a large operation. At the time, American breweries that made "not more than 150 or even 100 barrels a year were not uncommon. It was quite a sizeable business that made 300 or 400 barrels annually" (Siebel and Schwarz 1933:62). Unfortunately, the Irwin plant was lost to fire in 1854 (*Alexandria Gazette* November 4, 1854).

Only a few years elapsed before new establishments took the place of the Irwin brewery. Henry S. Martin, possibly a former Irwin employee, opened a small ale brewery at the corner of Commerce and Fayette Streets in 1856 (Alexandria Deed Book R-3:414; *Alexandria Gazette* March 15, 1860; Barber 1988:9; Boyd 1870). And in 1858, two Germans, Alexander Strausz and John Klein, leased an old frame building on Duke Street in the "suburb" of West End, and commenced the construction of a brick-vaulted beer cellar (Fairfax Deed Book A-4:347). The Shuter's Hill Brewery (later known variously as Klein's, Englehardt's, or the West End Brewery) was significant because it was the first to introduce the brewing of lager beer to Alexandria and to the state of Virginia (within its post-Civil War boundaries) (Bull, Friedrich & Gottschalk 1984; Van Wieren 1995; H.S. Rich & Co. 1903). Compared to the ales and porters popular until after the Civil War, lager beer required a different type of yeast and colder temperatures for fermentation and aging. The requisite methods and yeast were introduced to America from Germany about 1840 (H.S. Rich & Co. 1903:99,100,207).

The Civil War was a time of rapid but temporary expansion in the local brewing industry. The presence of Union troops created an unprecedented demand for alcoholic beverages of all types, despite the prohibition of the sale of liquor and beer within the city limits (*Alexandria Gazette* August 25, 1862; United States Senate 1864:2). The two existing breweries increased production and capacity accordingly. A third brewery, Portner & Company, was established in 1862 by a partnership of four men who had arrived during the Union occupation hoping to prosper from wartime demand for provisions (Internal Revenue Assessment Lists; Portner n.d.:6; Erickson 1988:21). In fact, between September 1862 and October 1865, these three breweries produced and sold nearly 9,000 barrels of lager beer and ale (Internal Revenue Assessment Lists). Also capitalizing on wartime prosperity, two other entrepreneurs, Christian Pogensee and George Steuernagel, opened very small restaurant/brewery operations after hostilities had ceased

(Internal Revenue Assessment Lists 1862-1866; Alexandria Deed Book X-3:430; Fairfax Deed Book F-4:434). These latter two businesses were short-lived, one apparently failing, and the other parlayed into a larger restaurant at a new location. John G. Cook briefly had a small operation in Fairfax County, possibly in the vicinity of West End (*Alexandria Gazette* July 8, 1868; Boyd 1870:430, 434; Fairfax Deed Book G-4:219; Alexandria Deed Book A-4:215; United States Census 1870).

The collapse in demand following the war ruined or threatened all of the brewing firms. By the mid-1870s, while the Martin, Steuernagel, Pogensee and Cook breweries were no longer in operation, the others were in substantial debt (Boyd 1870; Fairfax Deed Book G-4:219). The former Shuter's Hill Brewery, now under the proprietorship of Henry Englehardt, a former employee of John Klein, continued its operations, though at considerably decreased levels (*Alexandria Gazette* September 23, 1869, May 5, 1877, August 18, 1893; J.H. Chataigne 1876; Internal Revenue Service 1862-1866; Internal Revenue Service 1874-1910). Portner & Company dissolved, and Robert Portner, now sole owner, purchased a new site on North St. Asaph Street and constructed a large modern brewery and cellars.

These two breweries, Englehardt's and Portner's, would illustrate the contrast between the new and the old in the late-nineteenth century American brewing industry: small versus large scale; conservatism and tradition versus innovation; stasis versus expansion; high unit costs of small-batch production versus economies of scale and vertical integration; local versus regional marketing; and inadequate versus adequate capitalization. As the Robert Portner Brewing Company evolved into one of the greatest Southern breweries prior to Prohibition, the Shuter's Hill Brewery shuffled along for two decades due in large part to the leniency of its creditors. While annual production of the former eventually exceeded 75,000 barrels, the latter's never reached 500 barrels. Portner thrived since he broadened his market by establishing depots in distant cities, constantly improving and enlarging his brewery, and installing the most updated brewing, refrigeration, pasteurization, and bottling technology to increase production. A fire in 1893 ultimately claimed Englehardt's brewery (*Alexandria Gazette*, August 18, 1893).

Upon the turn of the twentieth century, Alexandria's port had mostly died. While larger ports such as Baltimore emerged as the termini for the bulk of mid-Atlantic shipping, the railroads provided an increasing share of domestic transport. Alexandria's waterfront and Old Town district deteriorated as the middle and upper classes moved to Washington and Alexandria's western suburban developments. The remaining important industries were few, and included Portner's Brewery, glass bottle factories, lumber mills, a tannery, and large wholesale florists (Wedderburn 1907). By the end of 1916, when Virginia became one of the 23 states to adopt Prohibition, the Robert Portner Brewing Company, Alexandria's largest employer and last brewery, finally closed its doors.

Project Area Land Use

Robert Portner purchased the north half of the 600 block of between North Washington Street and St. Asaph Streets along Wythe Street in 1865. Portner constructed lager cellars containing 36 large fermenting casks on the North Washington parcel to support his brewery on King Street (Alexandria Circuit Court Deed Books X-3:513, Y-3:204 and Z-3:58). No archival evidence was uncovered to verify the location of these early lager cellars. It is possible that they may have been along North Washington Street, associated with one of the two buildings which were standing on the property by 1867 (Alexandria Real and Personal Property Assessments). During the excavations for the foundations of the 1952 Woodward & Lothrop department store along North Washington Street, foundations were encountered and identified as possible beer vaults (Dennée 2002:45); however, the foundations may have been the old Portner residence constructed in 1872. It seems unlikely that Portner would construct cellars in 1865-1867 along North Washington Street and then abandon those cellars and construct new ones along St. Asaph Street.

In 1868, Portner began construction on a new brewery along North St. Asaph Street; he personally designed the plans and blue prints (Portner n.d.: 14). The roughly 60-foot by 160-foot brewery was built along the west side of what is now the 600 block of North St. Asaph Street. It was constructed of load-bearing brick arches and walls reaching thicknesses of two-and-a-half feet. It was clearly Victorian, designed in the Gothic Italianate style, popular among brewers of the period, and not dissimilar to the circa 1850 main buildings at the Virginia Theological Seminary a few miles away. Near the center, however, rose a tower more than 56 feet high capped by a Second Empire mansard roof and apparently constructed for aesthetic reasons. The plant was divided into six sections, three- to five stories tall, running north and south along the northern half of the block. Each section almost certainly connected to the others at each floor level to expedite the movement of ingredients. Brewing was conducted in the southernmost section, a four-story structure surmounted by a cupola and louvered window openings for cooling and ventilation. The third story contained hoppers or storage bins for barley malt. The malt was elevated there by mechanical hoists, readied to drop through chutes into the mash tuns on the floor below. The second floor, the center of brewing activity, contained probably two copper brew kettles and at least one mash tun. The first floor housed the wash room. Immediately behind the brewhouse was an attached structure containing an eight-horsepower steam engine and boiler, ventilated by a smokestack (United States Census 1870; Sanborn Map Company 1885). The next section to the north held the coolers used to reduce the temperature of the freshly brewed wort. Because the coolers were located on the third floor, the wort had to be pumped upward from the brew kettles. The rest of the floor area was devoted to malt storage. The next section, surmounted by the central tower, also contained hops and malt storage on at least the third floor. (This description of the interior arrangement is based mainly on the 1885 Sanborn insurance map, the first map to clearly suggest an arrangement. By 1885, however, the arrangement would have been modified after Portner added air-conditioning. Most of the northern sections of the plant were then devoted to above-ground cold fermentation and storage.) The brewery clearly possessed room for expansion, and probably housed some of the functions, like cooperage or bottling, which were later spun off into subsidiary buildings.

During the fall of 1872, Robert, having paid off his debts began building a new, larger home to accommodate a large family. It was erected in middle of the block on the east side of Washington Street, between Pendleton and Wythe Streets, that is, just behind the brewery buildings. The brick house was designed in the fashionable French Second Empire style. Its main block stood three stories tall, including its mansard-roofed upper story, and had a large, attached, two-story, rear ell.

One of the first enlargements to the Portner Brewery facilities was the construction of an ice house, partly complete in the spring of 1871. The structure appears to have been located to the west of the brewery near the center of the block. It was probably originally used simply for the storage of ice, but possibly also for beer storage. Before he installed his air-cooling system, Portner continued to expand the ice house (Portner n.d.:15). After that, it was devoted to general storage and was finally demolished sometime between 1885 and 1891. The introduction of artificial refrigeration also allowed Portner to ferment his beer above ground; most of the northern half of the main block of buildings was thereafter devoted to beer fermentation, aging and storing up to 25,000 barrels of beer at a time (Sanborn Map Company 1891, 1896; *Alexandria Gazette* 1894).

By the late 1870s, in addition to the main brewery buildings and the ice house, Portner had constructed at least one stable and as many as four other accessory structures, likely including a cooper's shop (Figure 2; Hopkins 1877). At the time of incorporation, the brewery properties, until then owned solely by Robert Portner, were conveyed by him to the company. Always expansion minded, Portner had acquired the last piece of the brewery block in 1880 and then immediately began to buy and aggregate lots across St. Asaph and Wythe Streets. The properties now included seven lots: the entire block bounded by Washington, St. Asaph, Pendleton and Wythe Streets, upon which stood the main plant; a quarter of a block plus improvements at the southeast corner of St. Asaph and Wythe Streets; a lot and improvements at the northwest corner of Wythe and Washington Streets; three lots on the east side of St. Asaph Street; and a parcel at the north end of town, partly bounded by First Street, the Alexandria Canal and the Washington & Alexandria Turnpike (Alexandria Circuit Court Deed Book 12:583; Alexandria Circuit Court Deed Books 9:9, 11:589, 12:57 and 12:180).

The southeast corner of St. Asaph and Wythe Streets became the bottling center, with a two-story, brick wash house and the first identifiable bottling works—plus associated sheds and loading docks. To the south of these was constructed the brewery's main office, a two-story, three-bay-wide, Italianate-style brick building (Figure 3; Sanborn Map Company 1885*;* *Alexandria Gazette* 1894). At the rear of the office was a small dwelling, possibly originally occupied by one of Portner's nephews (and clerks), Christian Valaer or Carl Strangmann (Chataigne 1881).

Portner had an office constructed for Paul Muhlhauser, brewmaster and superintendent, immediately behind the brewery and near the former icehouse. He also acquired some dwellings on the east side of St. Asaph Street, in which a succession of employees lived over the next three decades. The remainder of the outbuildings included sheds and a stable along the 600 block of Pendleton Street (Figure 3; Sanborn Map Company 1885).

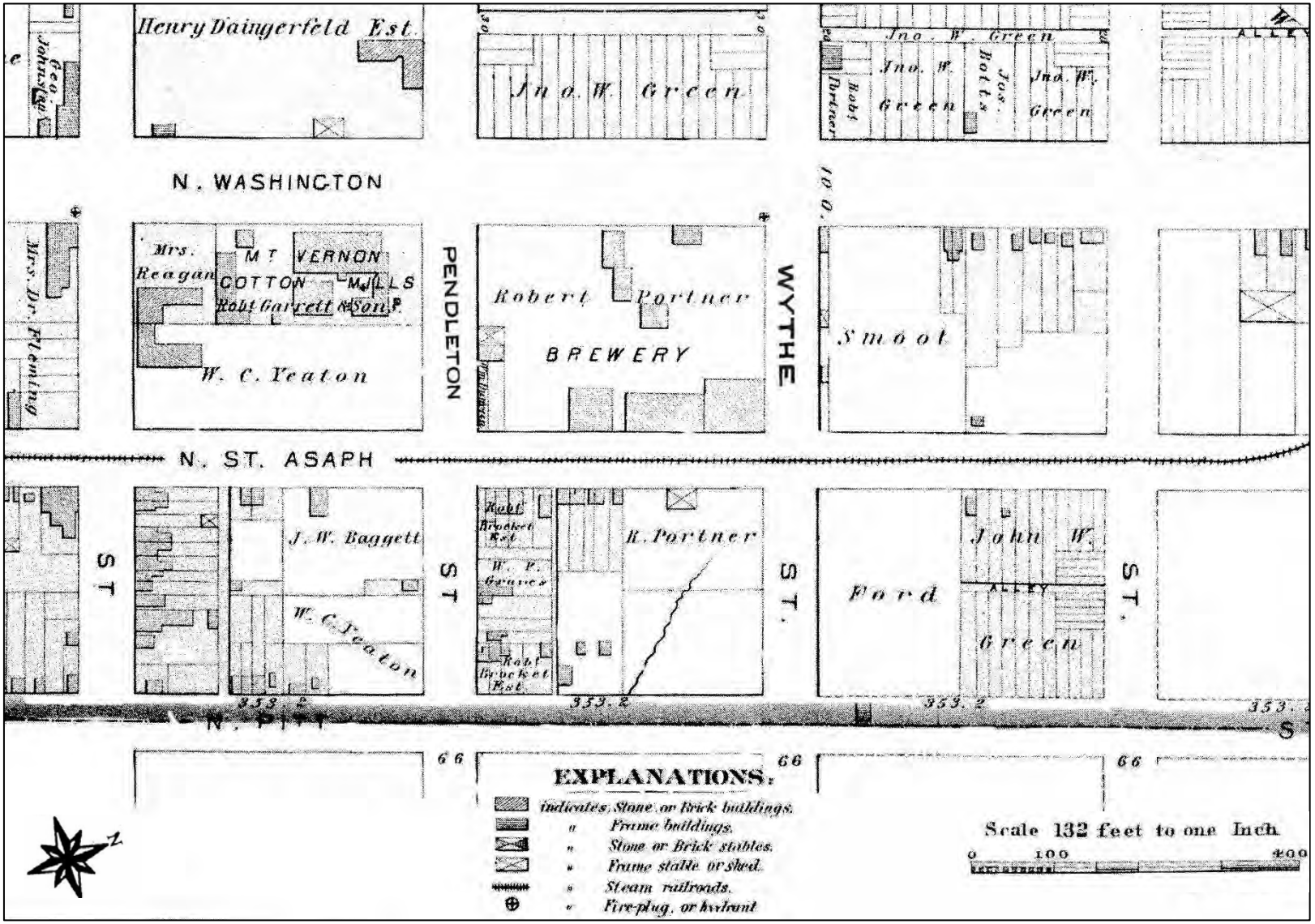

Figure 2. 1877 Hopkins Map Showing the Robert Portner Brewery

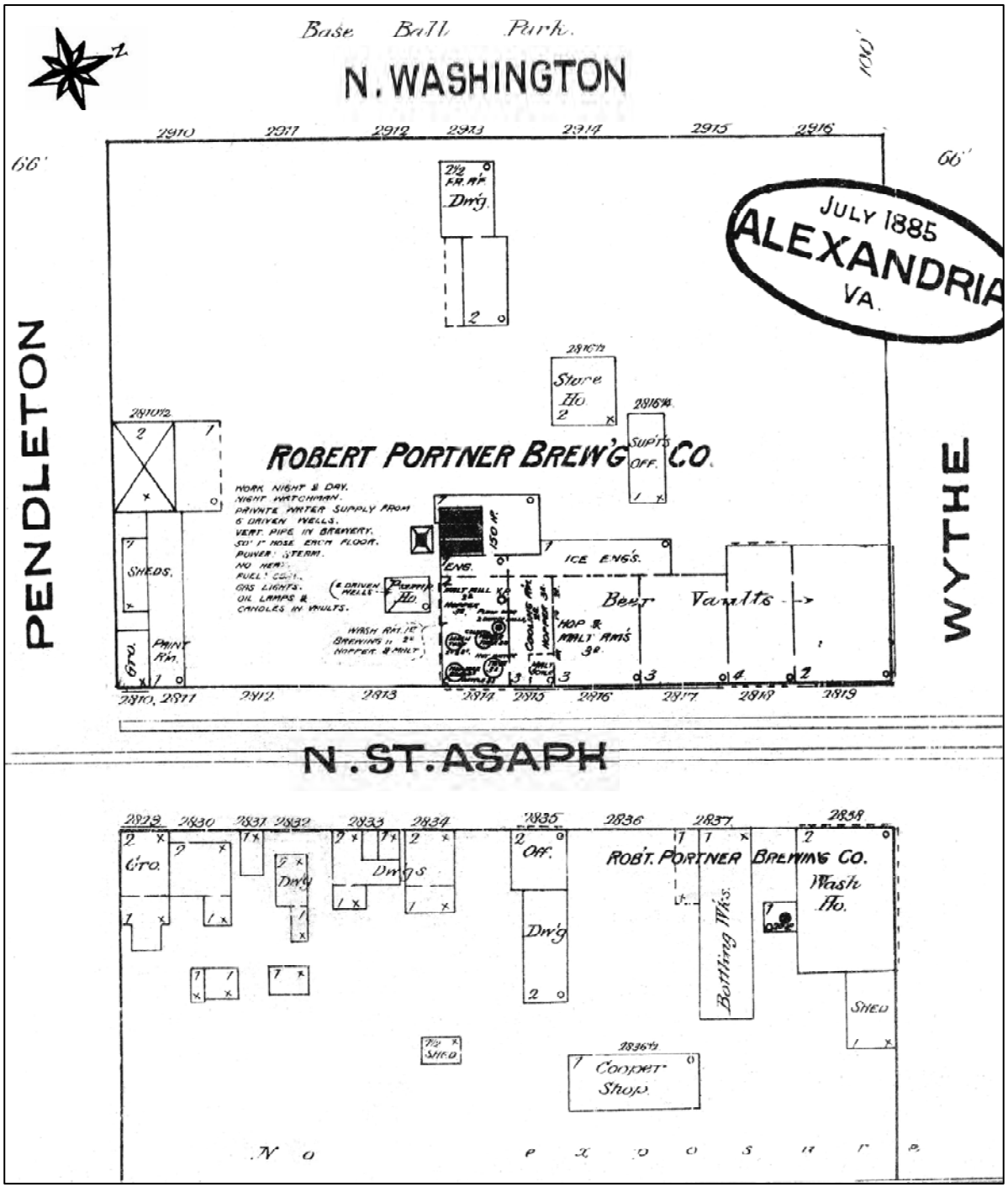

Figure 3. 1885 Sanborn Insurance Map Showing the Robert Portner Brewing Company

In 1885, new additions at the rear of the 1868 brewhouse reflected technological advancement and the increase in production. Two one-story structures contained a 150-horsepower steam engine and its boilers, and the "engines" or compressors that cooled the wort after brewing, kept the vaults cold, and possibly manufactured ice. A large smokestack vented coal smoke from the boilers' fireboxes (Figure 3; Sanborn Map Company 1885; Brockett and Rock 1883:66). In 1886, electric lighting was beginning to replace the gas jets, oil lamps and candles which illuminated the work space and beer vaults (Miller 1996).

In 1891, the plant showed still more changes: a new pump house and wells; a new "ice box" between the wash house and bottling house; an addition to the bottling house; relocation of the cooper shop; new bottle and keg storage sheds; and a new, 50-foot smokestack. The steam power had been beefed up to a total of 225 horsepower contained in a larger addition. Portner had directed a rearrangement of the brewing fixtures. The 1868 brewhouse now contained hop bins on the fourth floor, mash tuns and water tanks on the third, the brew kettles on the second, and the wort coolers on the first. Malt and additional water could easily be fed from the upper stories of the adjacent section of the plant (Figure 4; Sanborn Map Company 1891). This rearrangement rationalized and improved the process; taking better advantage of gravity, it reduced the amount of hoisting and pumping of ingredients and product.

In the spring of 1893, the management decided that it was time to go ahead with the new brewhouse (Figure 5), despite a depression which had set in after the financial panic of 1892 (Miller 1987:364; *Alexandria Gazette* April 18, 1894; Portner n.d.:26).

> Plans were prepared and building operations commenced shortly afterwards. The object was to increase the present capacity of the brewery and also simplify and facilitate the different operations by means of constructing a plant which should combine all the best features developed during the last ten years. The architect was directed to use only the best quality of materials and workmanship throughout but to leave off all unnecessary and expensive embellishments. That these conditions were thoroughly fulfilled and the result sought obtained will be seen by an examination of the buildings now completed and the appointment of their contents.
>
> The new buildings which adjoin the company's old brew house are 40 feet 4 inches in width with a total length of 60 feet. The brew house proper, of 40 feet 4 inches by 44 feet 8 inches, has three main stories with a height of 54 feet from the street level to the top of main cornice, and a total height to apex of ventilator over lantern of main roof of 80 feet. The structures are entirely built of brick, stone, steel and iron, lumber only being used for windows, doors, the purlins and top layers of roofs. All walls are carried up with bricks laid in Portland cement mortar on a concrete footing, the thickness of walls above ground being 21 1/2, 20 and 16 inches respectively. The trimmings to fronts are of brown stone [undoubtedly furnished by Portner himself from his Manassas quarry], all other projecting courses, panels in recesses, etc., are of moulded brick. The large windows in the second story have ornamented cast iron mullions and lintels

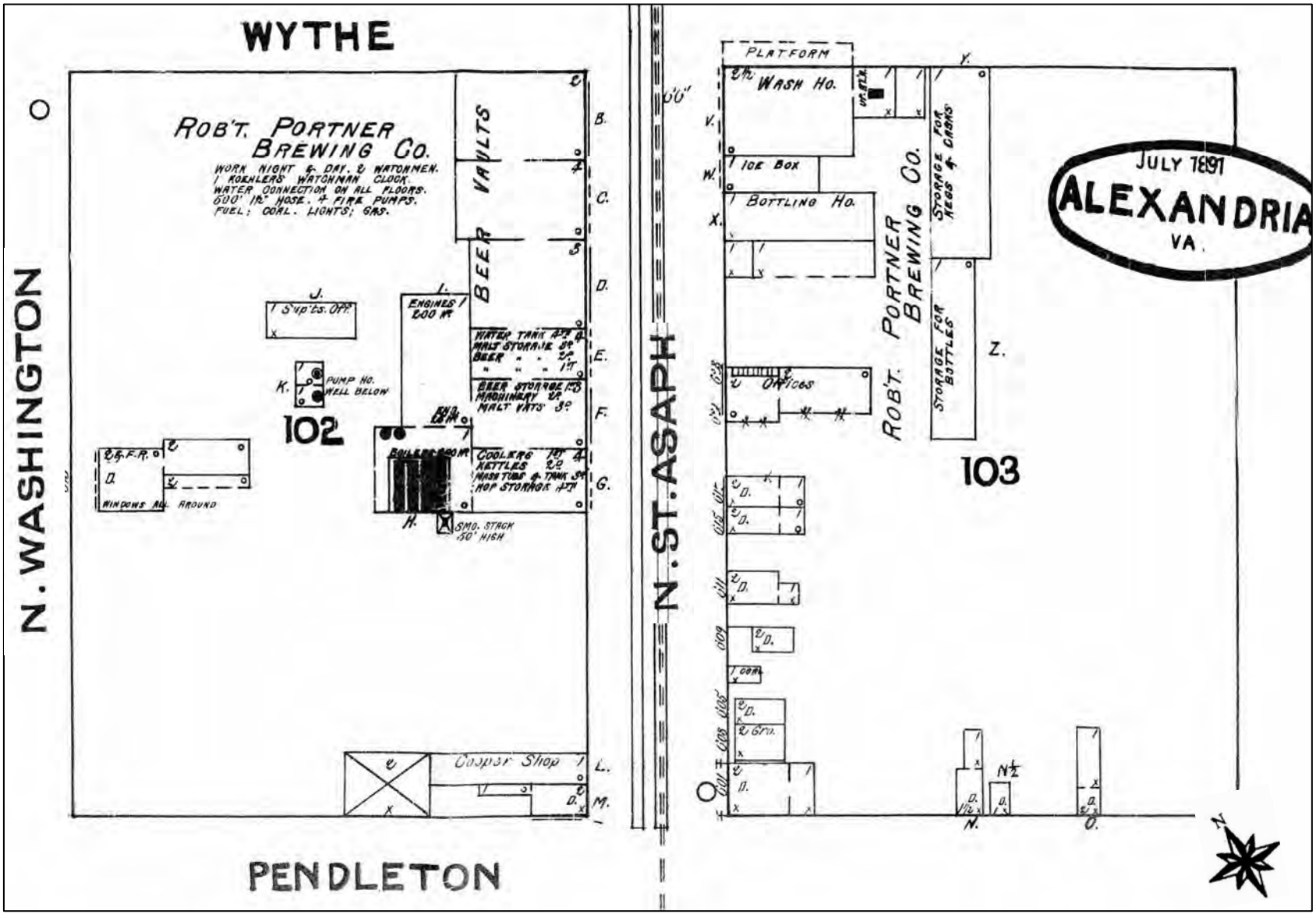

Figure 4. 1891 Sanborn Insurance Map Showing the Robert Portner Brewing Company

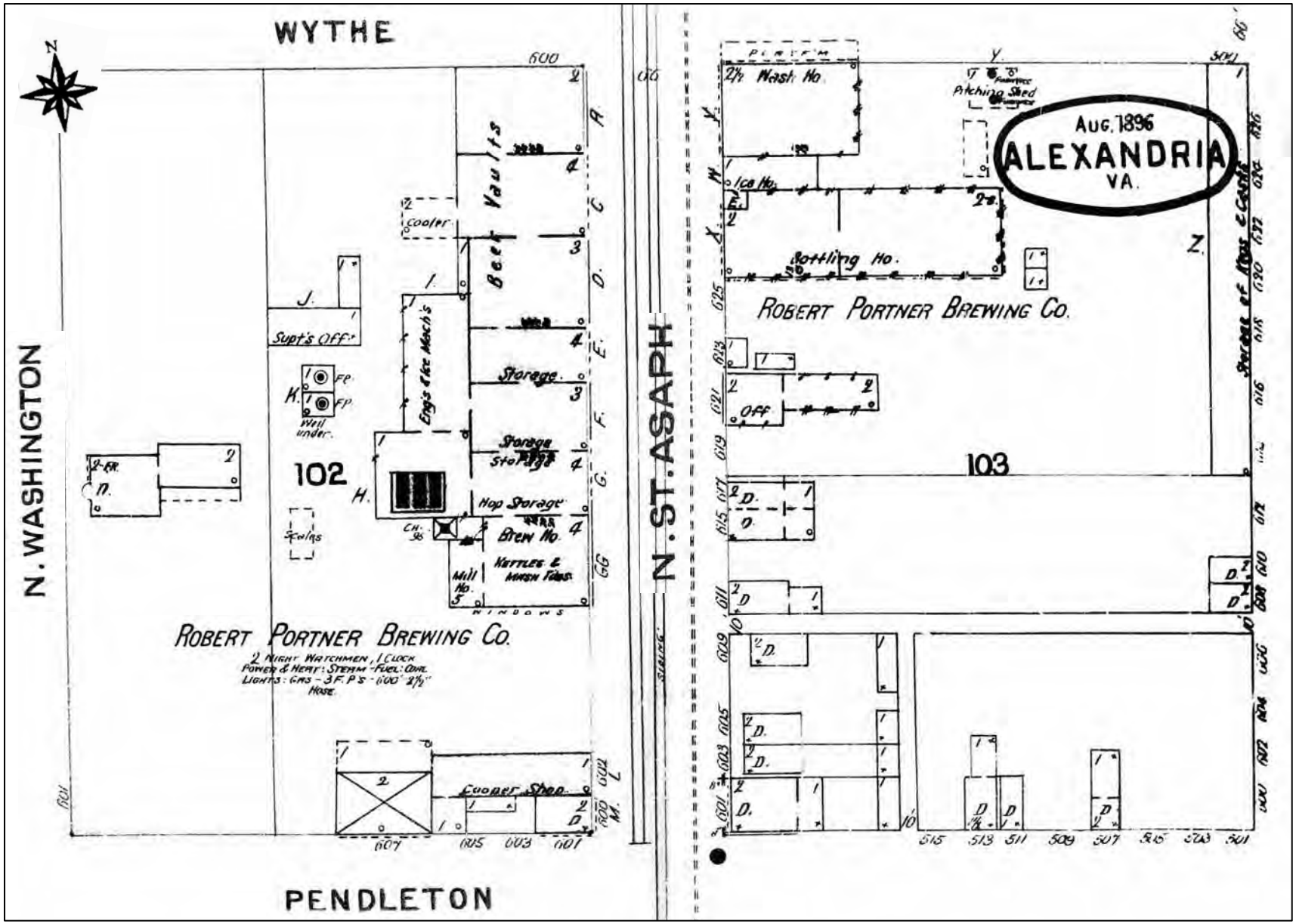

Figure 5. 1896 Sanborn Insurance Map Showing the Robert Portner Brewing Company and New Brewhouse (1894)

overhead. The entire interior framing for floors, platforms, galleries and other supports, also main roof, is of steel, the floors being filled between beams with concrete arches. There is an unobstructed view from one point to another at all levels, and also light in the remotest nook and corner through the large windows. The rooves are covered with slate, and all guttering is done with copper. Base, pilasters to windows, and cornice are of galvanized iron. Broad flights of iron stairs lead from floor to floor and a power elevator of two tons' capacity furnishes access to all main levels. All the tanks, tubs and hoppers throughout are built entirely of steel, with the exception of the hot water tank and the brew kettle, which are constructed of copper. On the ground floor of the brew house is the big hop jack and in the rear is the receiving tank holding 350 barrels. On the same floor is the new Corliss steam engine of 65 horse power, fitted with a pulley weighing four tons, and an eighteen inch wide belt. The whole driving system is arranged so as to transmit the power in the most direct way and at the same time not interfere with the overhead or passage room anywhere. Three steps above is the machine floor for the accommodation of the special driving device to the wash machine overhead. On a floor above, reached by a short flight of stairs, is located the kettle designed to carry the great load of 55 tons when full, its own weight being over 5 tons. It is entirely of copper with a double bottom, and is fifteen feet in diameter with a total height of 14 feet. A flight of stairs leads to a platform where the mashtub is situated. This contrivance is 15 feet 6 inches in diameter by 8 feet high and is provided with a machine with a grain-removing device of the latest pattern. On the floor above is also a water tank, the large hot water tank, the cooler tank, the meal hopper and the rice conversion tub with a double stirring and mashing machine fitted inside. It is entirely built of steel to withstand the high pressure exerted, and weighs about 6 tons. All the service, feed and discharge pipes from one vessel to the other are of copper.

The mill room is also arranged and appointed in the same plan of excellence, all appurtenances throughout being of iron. On the ground floor is the malt mill with the two elevators on either side. In a trench is a conveyor, carrying the malt from the bin to the boot of the elevator. On the second floor is the automatic scale weighing and registering the cleaned malt and discharging it into the receiving hopper, which in turn discharges it through a chute to the malt mill. On the second floor is also the dust bin receiving the chaff and dust from above. On the third floor is the double rolling screen, the dust collector and the exhaust fan. The screen is constructed entirely of iron and provided with the most improved contrivances for cleaning malt. On the top floor is the malt receiving hopper, and attachments: the remainder of the top floor towards the rear is occupied by a big water tank of 350 barrels capacity. Iron stairs lead from floor to floor, the different floors also being reached by the elevator.

The old brew house will be remodelled into a malt storage of 40,000 [or 50,000] bushels capacity, and when completed will enable the handling of the malt in bulk, discharging it from the cars into the bins. Through these extensive improvements, when entirely completed, the capacity of the plant will be at the

> maximum 250,000 barrels per annum. The cost of the new brew house, mill room and plant will be about $75,000 and with malt storage included, $100,000.

The engineer and architect under whose direction the work was executed is Mr. C.F. Terney of New York and the result fully justified the company's confidence in his taste and ability. (*Alexandria Gazette* April 18, 1894; Miller 1987:364-365)The cooling equipment was also modernized. The improvements were completed in the fall of 1894 (Figure 5).

By 1907, extensive additions to the brewery occurred west and south of earlier configuration, including a condenser, ice machines and air conditioners, the latter in a large concrete floored structure (Figure 6). The boiler room was extended westward with a brick floor. The roofing material for the brewery was slate. A property line divides the block from north to south midway along Wythe Street and a line of small structures appear and are identified as a pump room, office, storage, and pipe shop. A large 120,000 gallon water tank and associated water tower occur north of pipe shop. A 50 foot square structure identified as a Brewhouse is situated to the south, along N. St. Asaph, in addition to several small ancillary buildings including a meal room and grain dryer. The structures in the southeast corner of the block are noted as a shed and grain storage.

Portner's Brewery curtailed operations in 1916 because of Prohibition but entered new fields; the company was rechartered as The Robert Portner Corporation (Alexandria Corporation Court Charter Book 8:198-199). In the guise of the Virginia Feed and Milling Corporation, the Portner firm sank $5,000 into adding a second story and an elevator to the former ice plant at the corner of St. Asaph and Wythe Streets. This structure was apparently used as the manufactory. The main brewery buildings were likely used for storage, given that they still contained huge grain bins (Figure 7). The old cotton factory building, unused by the firm since 1913, had been sold, and was rented by the U.S. Department of Agriculture for storage purposes for five years. After the brewery shut down, the Department moved its storage to the 1912 bottling building (*Alexandria Gazette* July 28, 1933). Extant records suggest that the business lasted perhaps only one year. No mention appears in local records beyond 1919, and the brewery buildings seem to be vacant on the insurance map of 1921 (labeled 'not in operation' and 'mostly vacant')(R.L. Polk & Company 1917; Alexandria Building Permits 1896-1928; Virginia Military Institute Archives; Chesapeake and Potomac Telephone Company 1919; Sanborn Map Company 1921).

The buildings behind the brewery structure including the old Portner residence were razed in 1932 by order of the fire chief. By 1934, plans to reopen the firm had fallen through. In 1935, the management of the Corporation decided to demolish the main brewery buildings. Two years later, the Robert Portner Corporation was dissolved (*Fairfax Herald* February 17, 1933; *Alexandria Gazette* June 30, 1933; Gallagher 1978:2; *Alexandria Gazette* April 12, 1932; *Alexandria Gazette* April 26, 1935; 1883; Alexandria Corporation Court Charter Book 3:27).

After the Second World War, rapid suburbanization in the Washington area encouraged Woodward & Lothrop, the area's largest department store chain, to scout new locations. The vacant block upon which the main brewery buildings once stood seemed a perfect place for an Alexandria branch

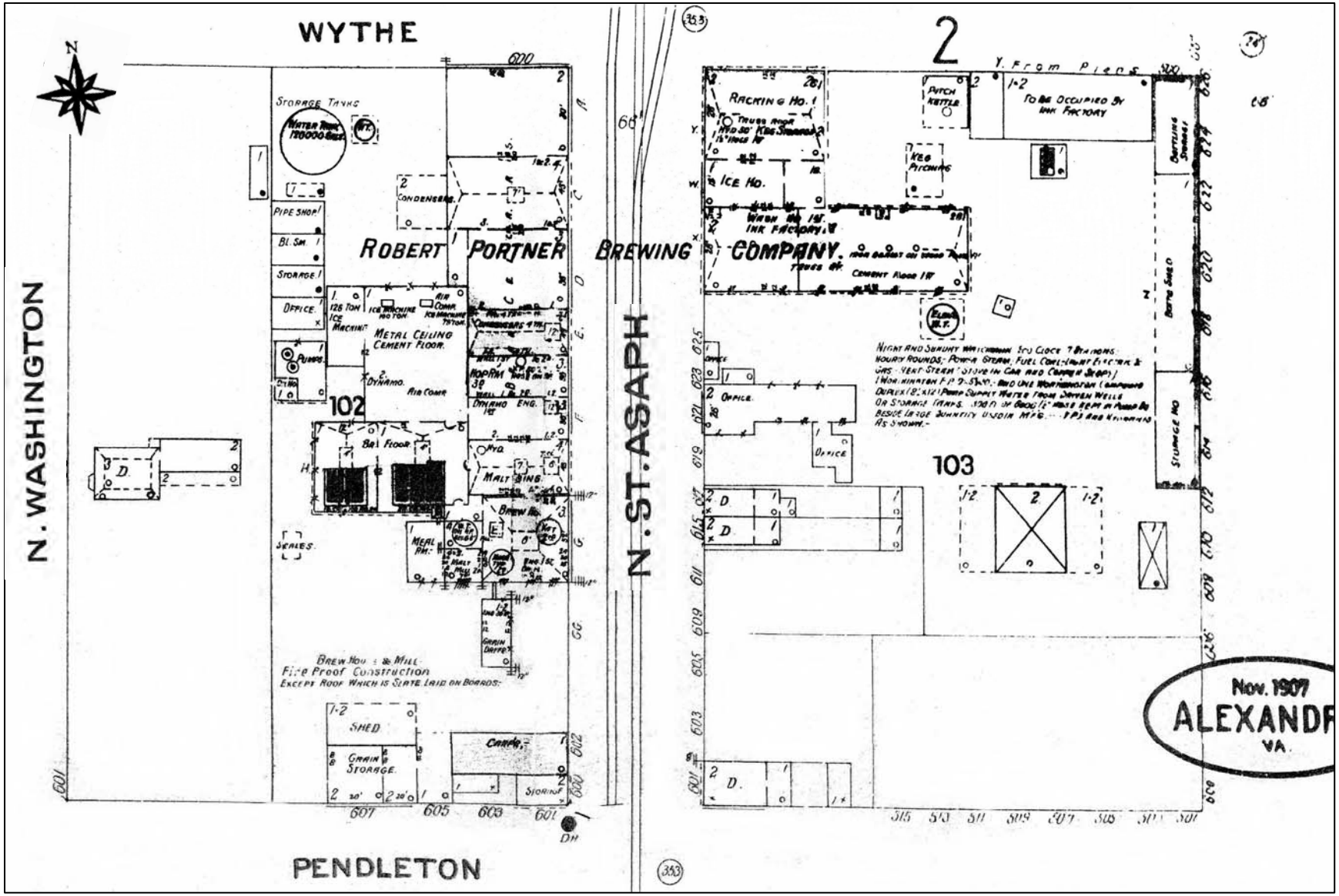

Figure 6. 1907 Sanborn Insurance Map Showing the Robert Portner Brewing Company

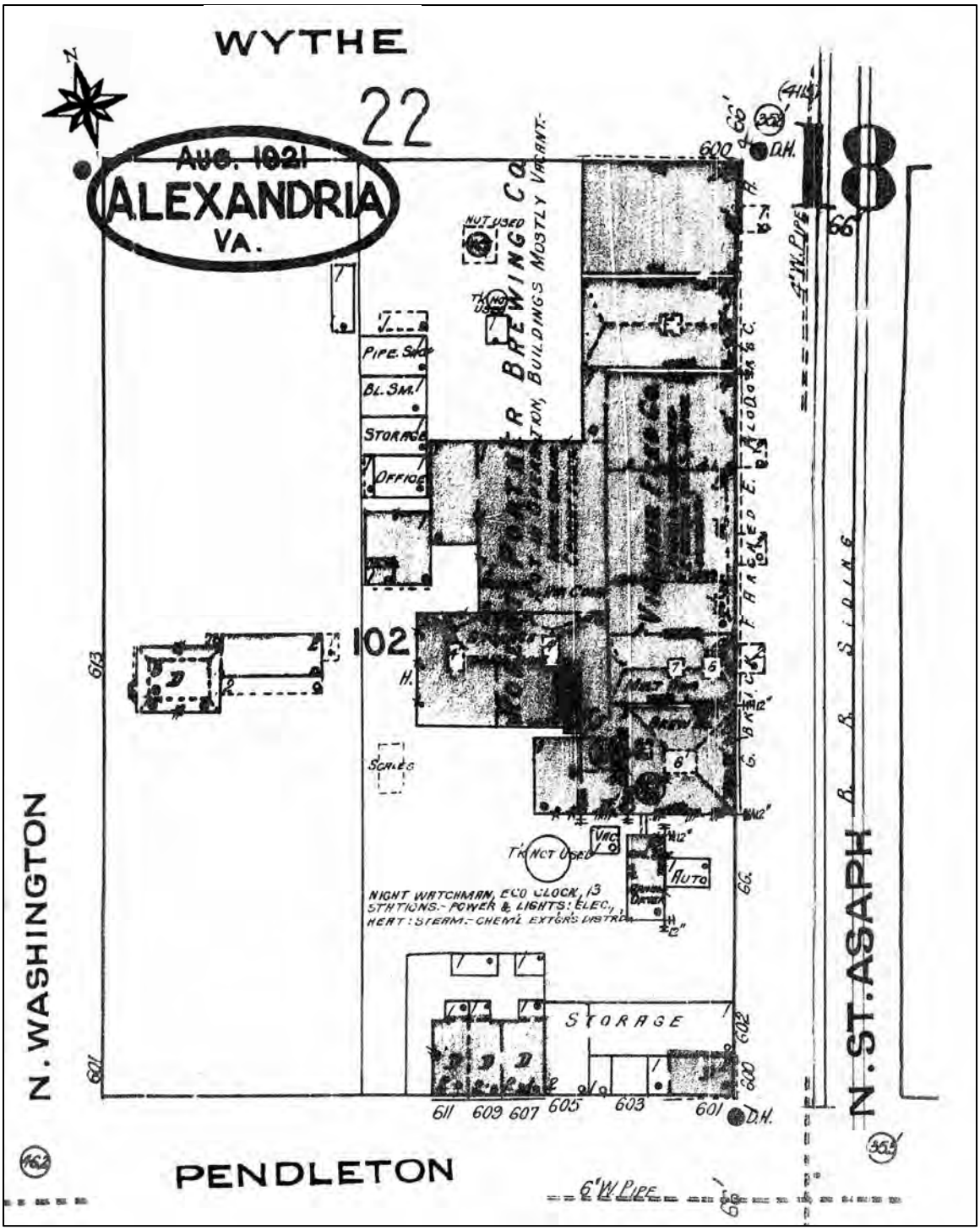

Figure 7. 1921 Sanborn Insurance Map Showing the Robert Portner Brewing Company and Virginia Feed Company

store (Figure 8). Immediately accessible to Washington Street (now part of the George Washington Memorial Parkway), the parcel also offered ample parking to serve an increasingly mobile and affluent public. With a little regrading, the site permitted access to the building on two levels—at street level on the Washington Street facade, and through the basement from the parking lot at the rear (east side). "Woodies" remained until 1968, when the W.J. Sloane Company purchased the store in order to showcase its home furnishings. A similar chain, Mastercraft Interiors, succeeded Sloane's in the early 1980s (Hill Directory Company 1953, 1968, 1969 and 1980; Alexandria Building Permits, 1928-1985).

B. Previous Investigations

The first controlled excavation of any part of the Robert Portner Brewery site occurred in 1994. City archaeologists monitored the demolition of the rear of the 1901 ice plant and the excavation behind it along Pitt Street in preparation for a mixed-use office/residential development. Little was discovered except for brick rubble, a few bottle sherds, and clumps of purple-stained refuse and clay, presumably from the 1907 ink factory across Wythe Street (It is not certain whether the ink factory was associated with the brewery). Similarly, backhoe excavation of the rear (east side) of the 1912 bottling house during the winter of 1997-1998, prior to the construction of "Portner's Landing," produced no evidence of the brewery's large, circa 1898 stable (Alexandria Archaeology site files).

In 1998, it was proposed to demolish the former Woodward & Lothrop and Mastercraft Interiors store building at 615 North Washington Street for the construction of a multiple-use office and retail development to occupy the entire block. The store stood directly atop the old Portner house site and its parking lot included the former location of the brewing plant and cellars. Because the new construction would require very deep foundations, it was clear that any remnants of the former brewery would be destroyed. Saul Centers, Inc., the developer, and Alexandria Archaeology agreed that a cultural resources management firm would perform testing and perhaps an extensive excavation ("Phase III") to recover any information related to the historic Portner's Brewery.

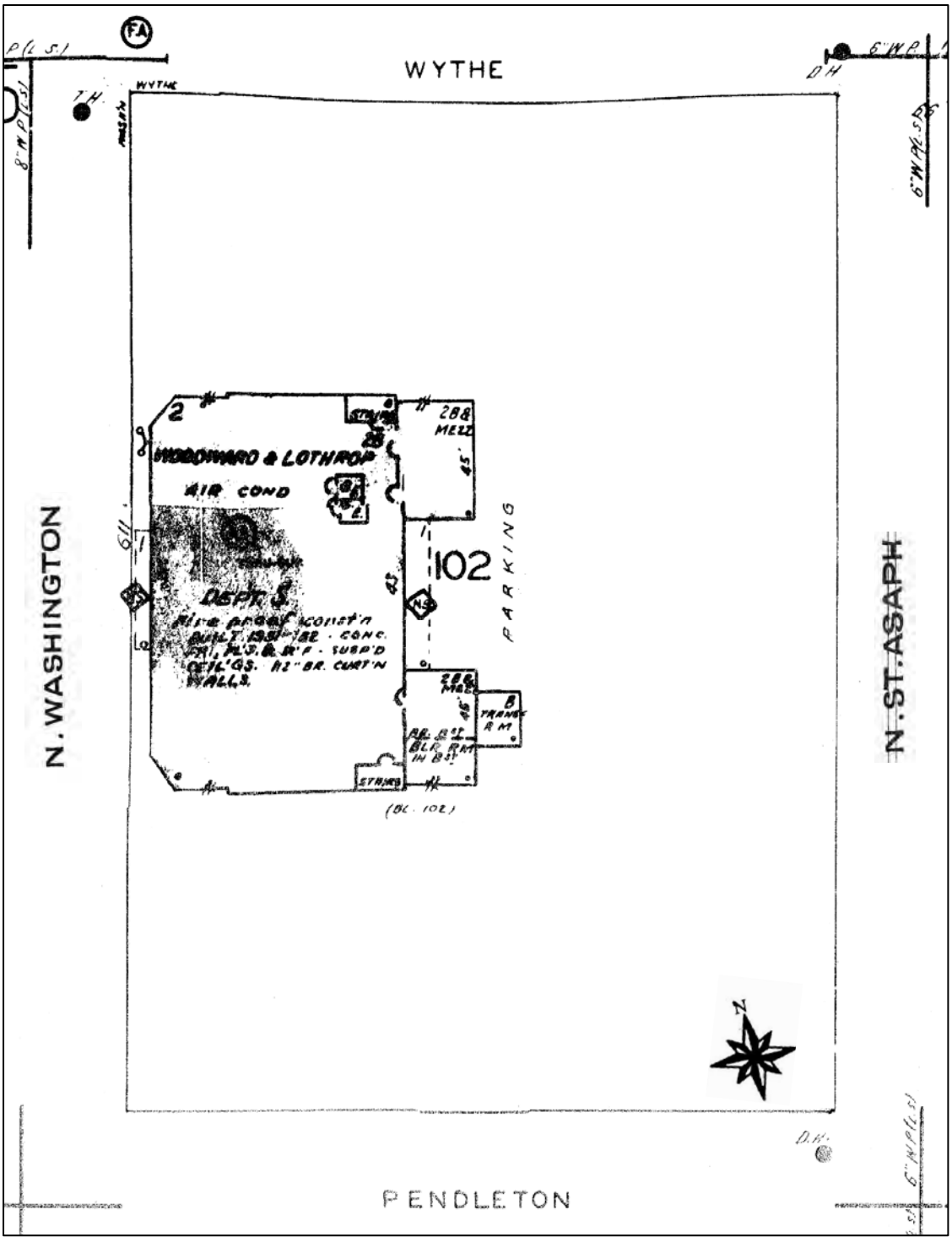

Figure 8. 1958 Sanborn Insurance Map Showing the Woodward & Lothrop Building

III. METHODOLOGY

A. Phase I

The goal of the Phase I archaeological study was to determine the presence or absence of archaeological resources on the site that related to the use of the property as Portner's Brewery. Thus, Parsons ES prepared a series of overlay maps showing the locations of features associated with the brewery and consulted with Alexandria Archaeology to determine the best locations for the trenches. A testing strategy was proposed to sample areas where features were predicted to be present. Eleven Phase I trenches were excavated in October and November 1998 (Table 1, Figure 9).

Table 1. Phase I Trench Information

Trench Number	Type	Dimensions	Area Provenience
1	Linear	6.5 feet x 20 feet	
2	Linear	6.5 feet x 10 feet	
3	Linear	5 feet x 31 feet	Area 2, North
4	Linear	6 feet x 40 feet	Area 2, North
5	Trapezoid	6 feet x 6 feet x 14 feet	
6	Linear	4 feet x 43 feet	Area 1, South
7	Linear	6 feet x 10 feet	
8	Linear	7.5 feet x 24 feet	Area 1, South
9	Linear	6.5 feet x 45 feet	Area 1, South
10	Linear	6 feet x 25 feet	
11	Linear	5 feet x 20 feet	

Excavation was conducted using a backhoe monitored by an archaeologist. Information from each trench was recorded in field notes and the trenches were drawn and photographed in profile and plan view. The location of all trenches was recorded on a site map. The features were drawn, photographed, described, and sampled. Those features considered to be significant were recommended for further investigation.

B. Phase II

The goal of the Phase II archaeological testing was to determine the boundaries, integrity, and significance of the potential archaeological remains associated with the resources identified through archival research and the Phase I survey of Portner's Brewery. The project area was approximately one-half of a city block, fronting St. Asaph Street on the east, with Pendleton Street on the south, Wythe Street on the north, and the Mastercraft furniture store building on the west.

Based on consultation with Alexandria Archaeology, the Phase II testing of the property was limited to two areas within the project area. Both of these areas revealed that intact features

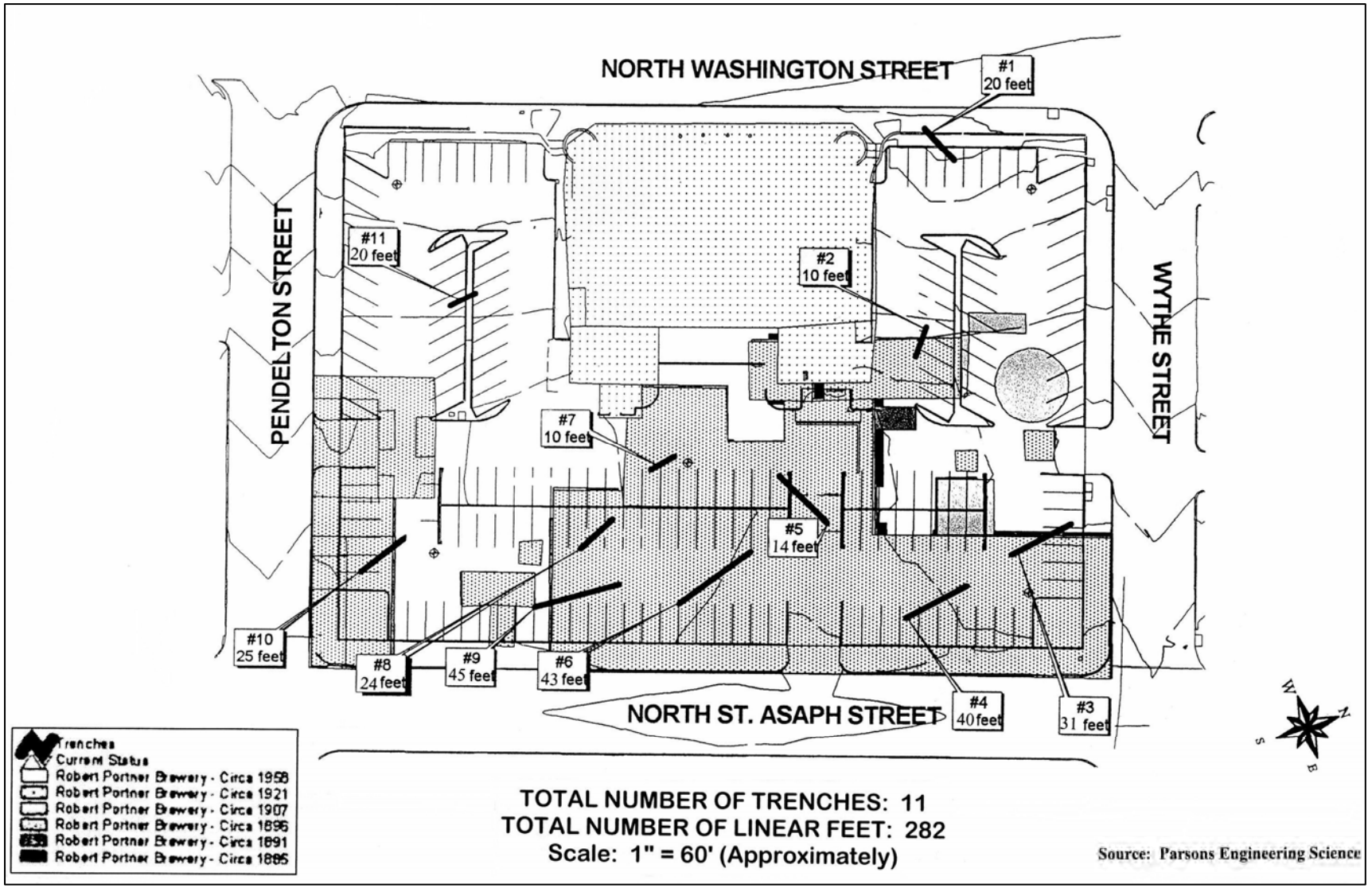

Figure 9. Phase I Trench Locations

associated with Portner's Brewery existed on the property, based on the Phase I survey. Phase II archaeological excavations occurred during December 1999 and January 2000.

Two areas of the property contained intact features (Figure 10**)**. Both of these areas were covered by an asphalt parking lot. The asphalt was broken using a jackhammer, and was removed with a backhoe. These areas were then mechanically cleared of demolition overburden (also with the backhoe) to expose entire features or groups of features. Excavation was monitored at all times by an archaeologist. After all overburden was removed, all existing and newly exposed features were mapped in plan and profile, photographed, and described in detail. The northernmost area contained the beer vault and the southern area contained a deep shaft feature (Feature 5), as well as masonry walls (Feature 1) and a concrete pier (Feature 2). The contents of both the shaft features and the beer vault were removed by a backhoe monitored by an archaeologist.

Feature 15, the wooden conduit and a small number of artifacts from Phase II investigations were collected (Appendix C). With the exception of Feature 15, the artifacts were not related either to the dates of construction or the functions of the structures as a brewery. All collected artifacts were transmitted to Alexandria Archaeology for final curation.

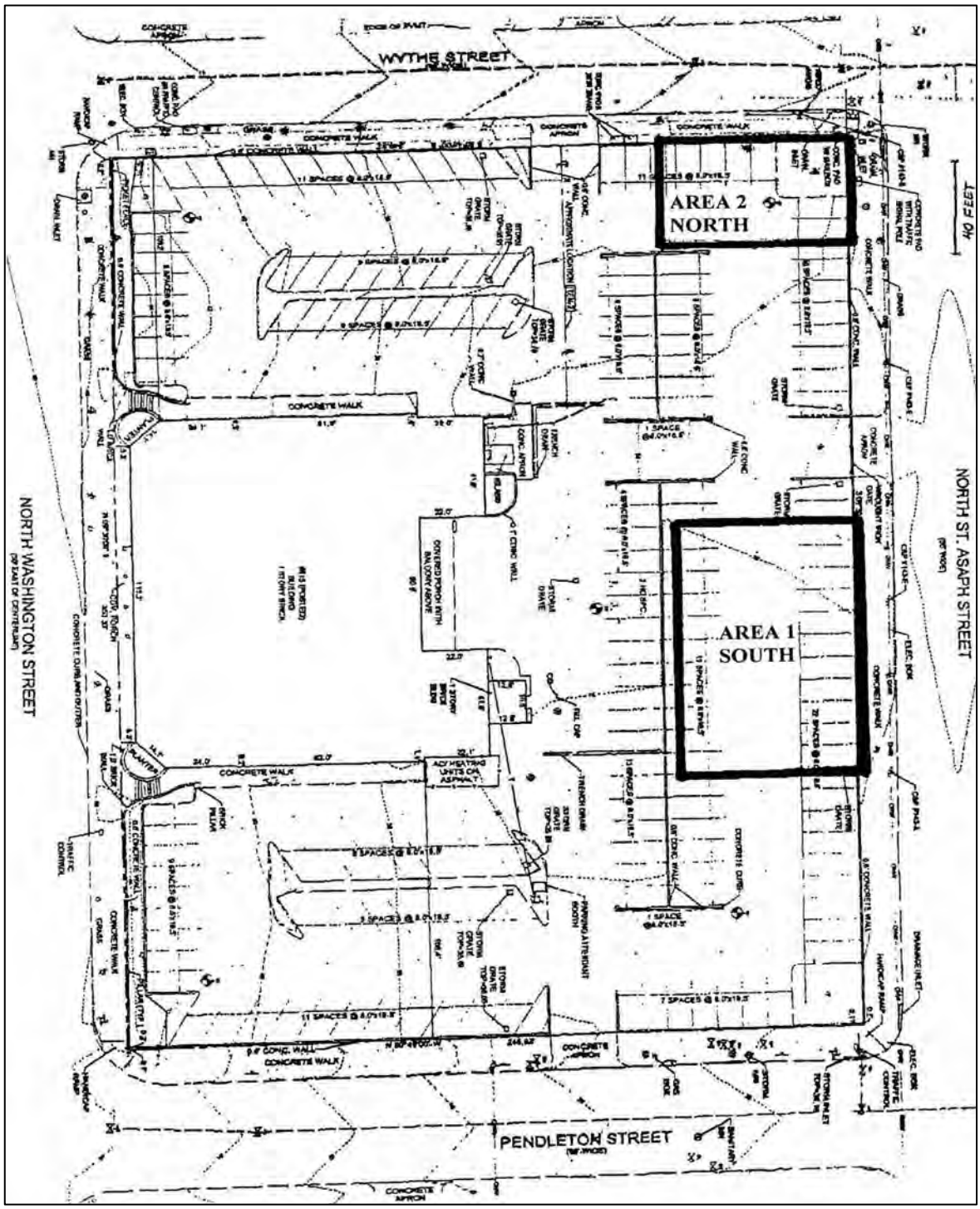

Figure 10. Phase II Areas

IV. DESCRIPTION OF FINDINGS

A. Phase I Results

Fifteen features were identified during the Phase I trenching (Table 2). These features included brick walls and foundations, brick, concrete and stone pads, a circular brick shaft, and cement and rubble matrix concentration.

Trench 1

Trench 1 measured 20 feet long by 6.5 feet wide. It was placed at the northwestern end of the block, in an area where the 1877 Hopkins map indicated a structure (Figure 2). By the issuance of the first Sanborn map in 1885, this building was gone (Figure 3). The area in the Trench 1 vicinity remained unimproved throughout the remainder of the nineteenth and twentieth centuries. As originally scoped, Trench 1 was to straddle portions of the current parking lot and the adjacent sidewalk. However, due to the impracticability of excavating the portion from the parking lot to the sidewalk, which included a steep berm and retaining wall leading up to Washington Street, the trench location was amended to include only the parking lot area and this section was extended to the original 20-foot length.

Stratigraphy in Trench 1 consisted of asphalt (Stratum A) and coarse sand and gravel bedding material for the asphalt (Stratum B) overlying a thin (less than 0.5-foot thick) silty clay fill layer (Stratum C) (Figure 11). The fill layer rested on subsoil (Stratum D). No features were found in this trench. It is likely that any former cultural deposits were graded away during construction of the present parking lot.

Trench 2

Trench 2 measured 10 feet long by 6.5 feet wide. It was placed in the central part of the northern end of the block. During the nineteenth century, this portion of the block was unimproved. By the 1907 Sanborn map (Figure 6), this area contained several one-story buildings, including a pipe shop and a structure attributed to a black smith. The trench partially overlapped the former footprint of these buildings.

There were four strata in this trench, but no intact cultural deposits (Figure 12). Strata A and B were the asphalt parking lot surface and the coarse sand and gravel bedding material for the asphalt, respectively. Beneath these modern strata were two layers of subsoil. Stratum C was mottled silty clay subsoil and Stratum D was mottled sandy subsoil. No features were found in this trench. As in Trench 1, it is probable that any former cultural deposits were graded away during construction of the present parking lot.

Table 2. Phase I Features

Feature Number	Provenience	Description	Association
1	Trenches 8 and 9	Stepped brick foundation walls trending north-south	
2	Trench 9	Square slab of dressed granite	Feature 1
3	Trench 9	Brick wall trending north-south	
4	Trench 6	Square brick surface over square concrete pad	
5	Trench 6	Circular brick feature	
6	Trench 6	Brick wall trending north-south	
7	Trench 4	Matrix of hard packed cement and rubble	On top of Feature 12
8	Trench 4	Square slab of dressed stone with square shaped iron pedestal and solid cylindrical shaft	On top of Feature 12
9	Trench 4	Brick wall trending east-west	
10	Trench 4	Brick pad	
11	Trench 4	Two parallel brick walls with oversurface covered in concrete with dressed stone slab	Surface similar to Features 7 and 8
12	Trench 4	Intersecting brick walls and surface	
13	Trench 5	Brick wall trending north-south	
14	Trench 3	Two parallel brick walls trending north-south	
15	Trench 7	Wooden conduit with 7 rubber coated wires	

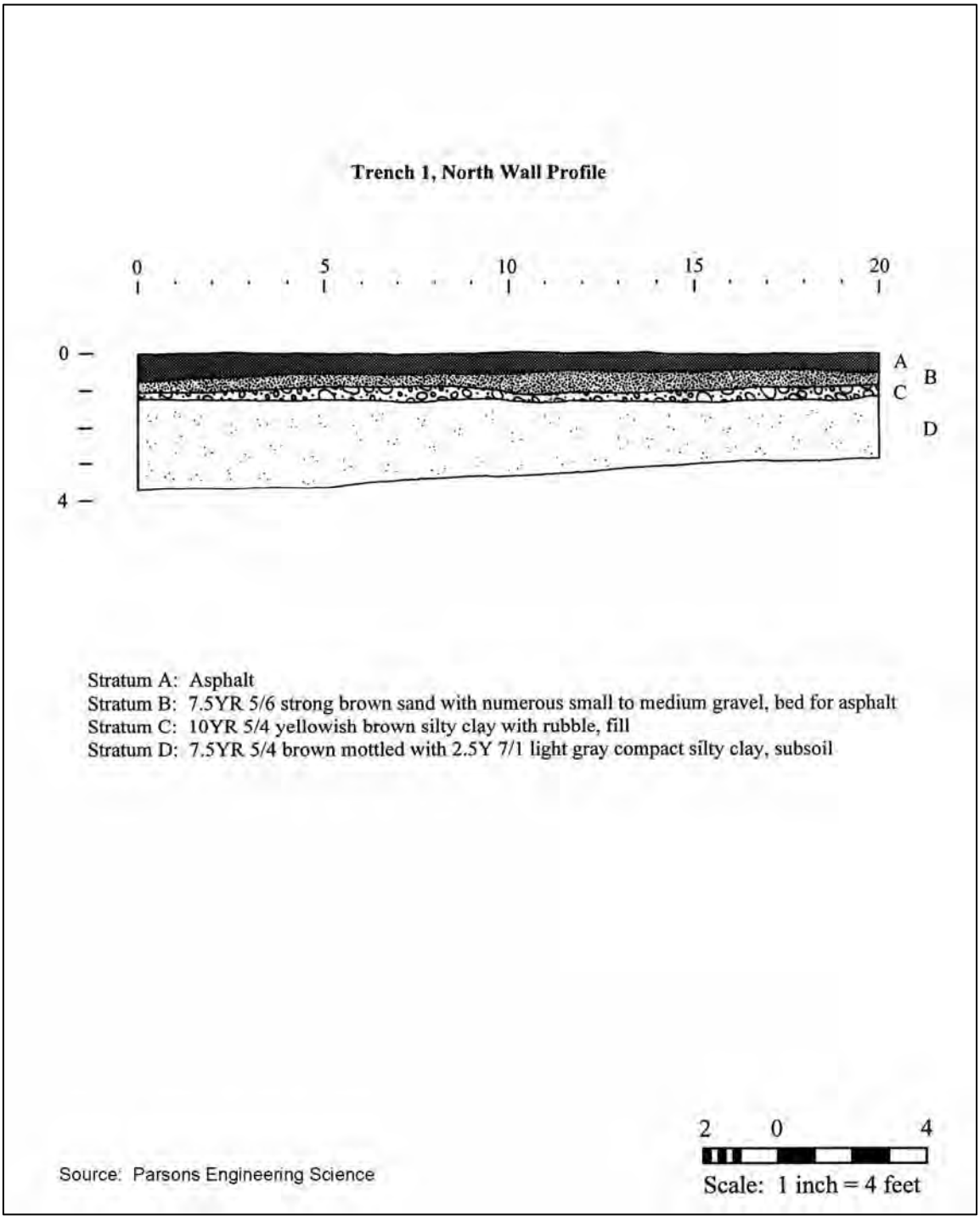

Figure 11. Trench 1, North Wall Profile

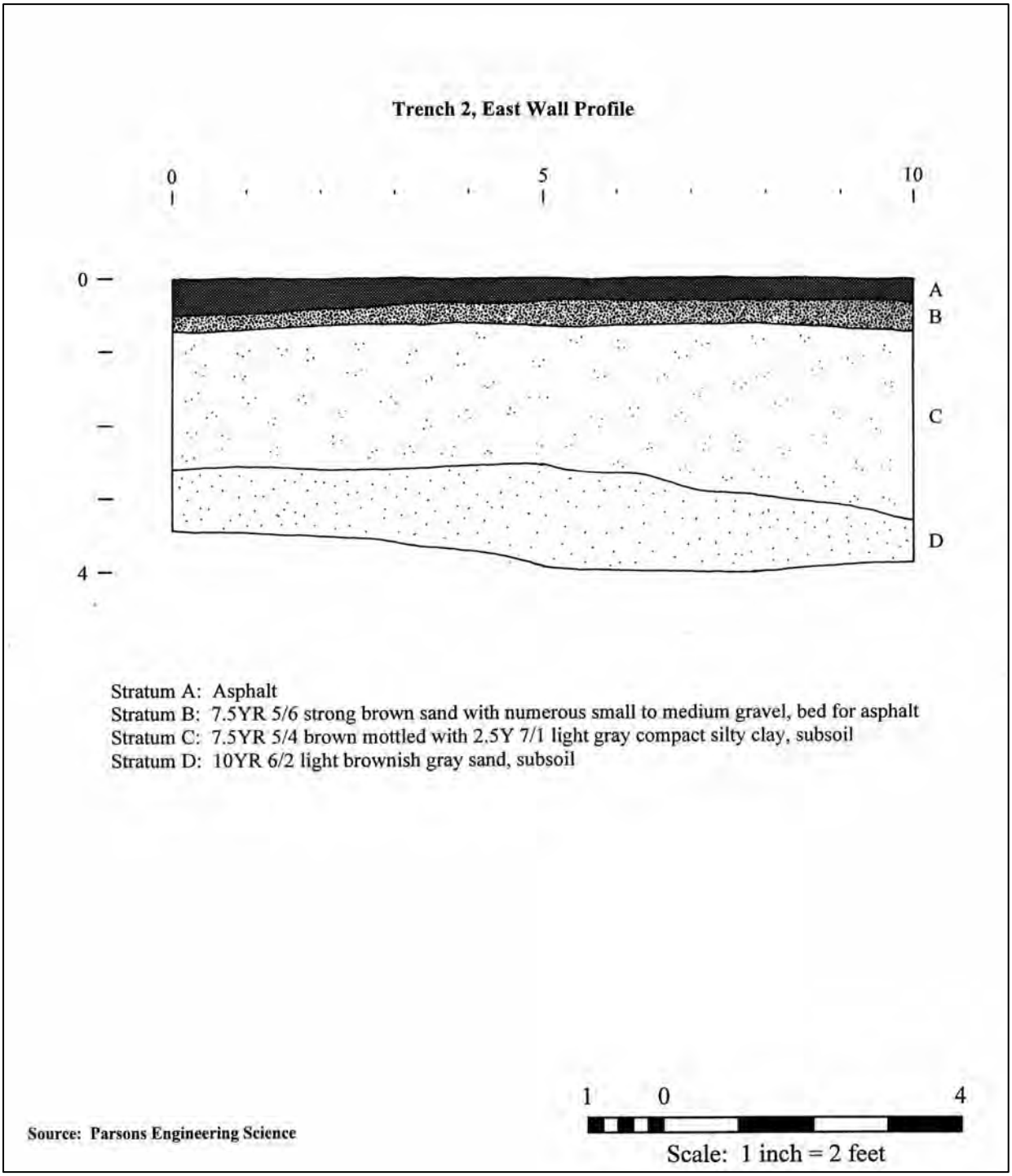

Figure 12. Trench 2, East Wall Profile

Trench 3

Trench 3 measured 31 feet long by 5 feet wide. It was placed to intercept the former beer vault at the northeast corner of the block, labeled on all the Sanborn maps beginning in 1885 (Figure 3), and shown but not labeled on the 1877 Hopkins map (Figure 2).

The entire trench overlaid the cavity of the beer vault, which had been backfilled with demolition debris in the mid-twentieth century when the present parking lot was constructed. At ca. 7 feet below grade, the trench encountered the vault's concrete floor. The western brick wall of the vault was found just beyond and undercutting the northern sidewall of the trench and labeled Feature 14. Although the trench was too deep to enter safely and rubble fill from the sidewall masked the upper extent of the brick wall, visual inspection revealed two distinct building episodes associated with the wall. The main wall extended 2.5 feet up from the concrete floor and contained at least 10 courses of bricks. Although mortar adhered to the ends of the bricks made distinctions between courses difficult to discern, the pattern appeared to include several rows of stretchers, a row of headers, followed by several more rows of stretchers. The second wall-building episode consisted of a 4-course thick shelf of stretchers immediately adjacent and parallel to the first wall. This shelf would have been on the interior of the vault. Based upon the darker color and straighter sides of these bricks, it appears that this second wall represents a later addition to the first wall. The wall complex matches the west wall of the vault footprint on all the Sanborn maps, beginning in 1885 (Figures 3, 4, 5, 6, and 7). Measurements extrapolated from the trench indicate the vault cavity extended at least 23 feet to the east. The trench did not encounter an eastern edge to the vault.

There were four strata observed in Trench 3 (Figure 13). Strata A and B were the asphalt surface and the underlying coarse sands and gravel bedding material, respectively. Stratum C was a ca. 0.8-foot thick clay fill layer under Stratum B. Stratum D was the rubble fill found in the remainder of the vault cavity and ca. 5 feet thick. Since the concrete floor covered the entire trench base and could not be penetrated, subsoil was not reached in this location. The vault cavity did not contain any intact cultural deposits or any additional features.

Trench 4

Trench 4 measured 40 feet long by 6 feet wide. The trench originally was scoped to be 30 feet long, but was extended when a sizeable feature (Feature 11) was encountered at the northern end. This trench was placed to intercept the interior of two former beer vaults along St. Asaph Street, labeled on all the Sanborn maps beginning in 1885 (Figures 3, 4, 5, 6, and 7), and shown but not labeled on the 1877 Hopkins map (Figure 2).

Unlike in Trench 3, no beer vault cavity was found. However, several other features were encountered (Figure 14). Feature 9 was a brick wall 3-courses wide, oriented roughly east-west near the center of the trench. This feature matched the former location of an east-west interior wall between the two middle beer vaults, shown on all Sanborn maps beginning in 1885 (Figures 3, 4, 5, 6, and 7). Feature 12 represented the southeast corner of a structural element composed of two intersecting brick walls and an overlying surface. These walls were found at 3.2 feet

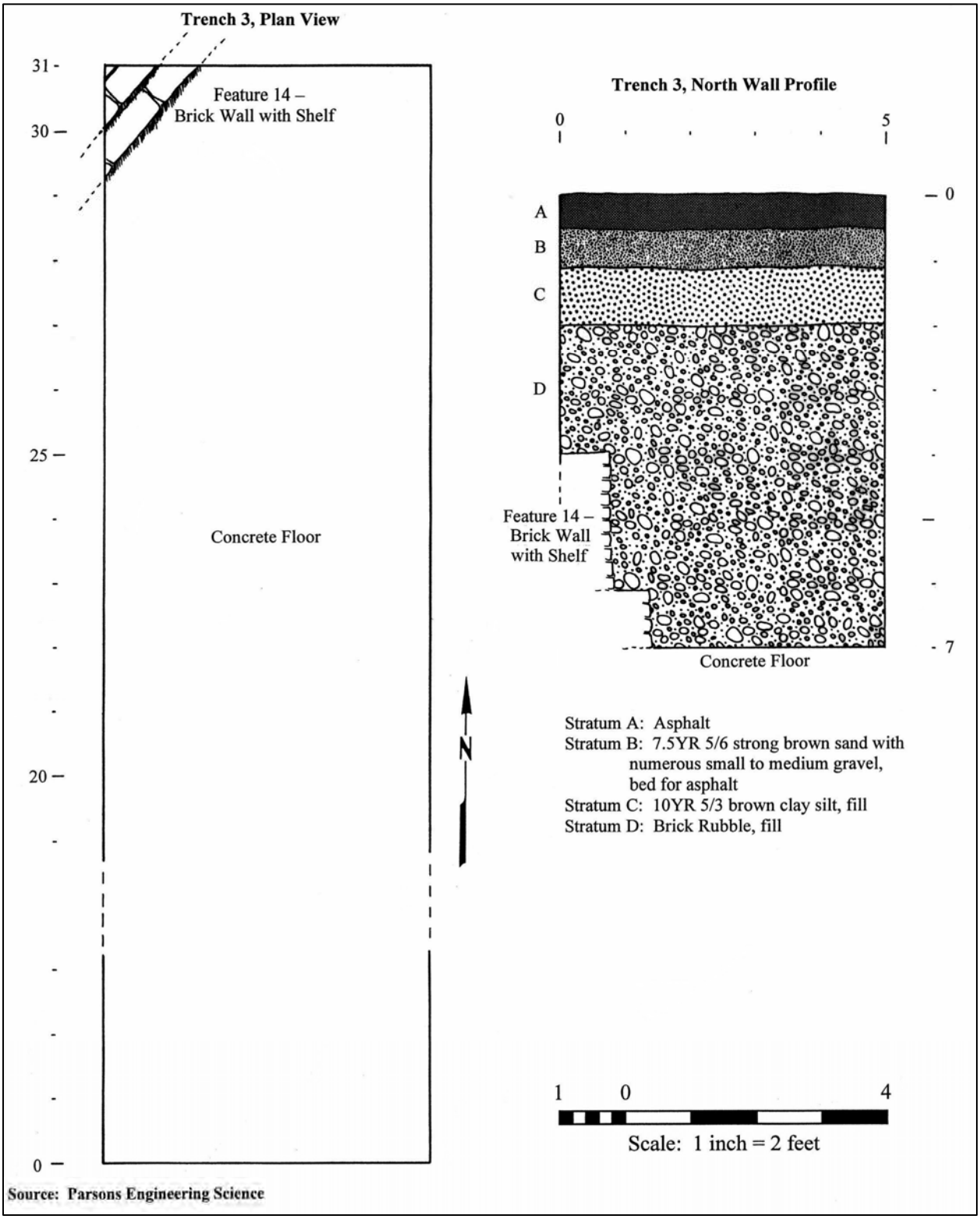

Figure 13. Trench 3 Plan View and North Wall Profile

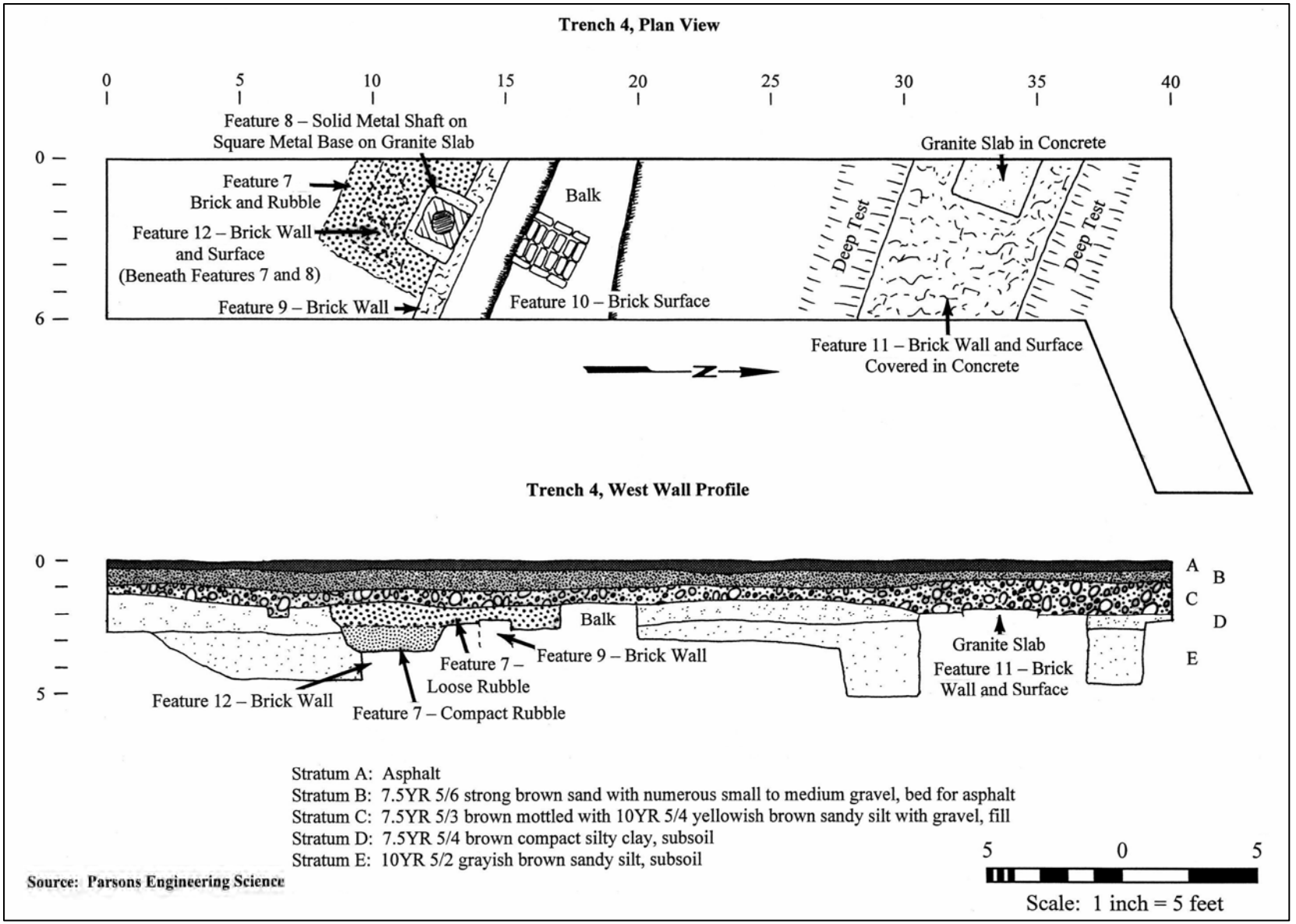

Figure 14. Trench 4 Plan View and West Wall Profile

below the parking lot surface and were exposed for an additional foot into subsoil before safety regulations precluded further excavation. The base of the walls was not reached. On top of Feature 12 was a matrix of hard-packed cement and rubble, previously designated Feature 7. This matrix contained an *in situ* dressed stone slab, 1.1 feet thick and 1.2 feet wide, which served as the base for a square-shaped iron pedestal and a solid cylindrical shaft. The stone slab, iron pedestal, and iron shaft were designated Feature 8. Feature 10 was a 2-course deep brick pad located 0.8 feet north of Feature 9, the brick interior wall, and would have been located just inside the northern of the two beer vault structures. The sequence of construction in this area of Trench 4 appears to be Feature 12 first (intersecting brick walls), then Feature 9 (brick interior wall) and finally Feature 7 (brick rubble) and Feature 8 (stone slab and iron pedestal).

Feature 11, located ca. 15 feet north of Feature 9, contained two parallel brick walls connected by an overlying surface. As in Feature 12, these walls were cut deep into the subsoil and their bases could not be reached due to safety considerations. The width of the walls and the surface was 5.5 feet. A cement and brick rubble matrix similar to that overlying Feature 12, and containing an *in situ* dressed stone slab, covered the surface. This slab measured 1.7 feet in width.

Features 11 and 12 are substantial brick walls with concrete surfaces across the walls. Feature 11 occurs within the confines of the second beer vault and Feature 12 is located in the third beer vault. These features do not correspond to any interior beer vault walls as indicated on the Sanborn Insurance maps (Figures 3, 4, 5, and 6).

Stratigraphy in Trench 4 consisted of asphalt (Stratum A) and coarse sand and gravel bedding material for the asphalt (Stratum B), followed by a layer of mixed silty clay fill with some brick rubble (Stratum C), and in most parts of the trench, two layers of subsoil (Strata D and E) (Figure 14). In the southern part of the trench overlying Features 8, 9, and 12, a discrete rubble and mortar-filled stratum occurred beneath Stratum C and was labeled Feature 7. This feature was later separated into two parts: the loose rubble and mortar covering the structural features, and the hard-packed cement and rubble matrix covering Feature 12 and surrounding Feature 8. It seems likely that the looser part of the rubble layer was deposited after the structure was abandoned, while the more compact portion actually was laid down while the building was in operation as a matrix to support the stone slab, iron pedestal, and iron shaft.

Trench 5

Trench 5 straddled a concrete barrier separating a row of parking spaces from a ramp leading to a loading dock. It was located near the center of the block, and was placed to intercept the brewery's engine room, shown on the 1891 and 1896 Sanborn maps (Figures 4 and 5). By the 1907 Sanborn map, the building had been expanded to the west (Figure 6). This structure was located behind the main brewery buildings along St. Asaph Street. Only the southern half of the trench was excavated at this time since the loading dock was still in use when the fieldwork occurred. The trench was oriented southwest-northeast and the concrete barrier intersected the trench running east-west along the city grid lines. Thus, the trench measured 6 feet long on the north side, 14 feet long on the south side, and 6 feet in width. In plan view, the trench was trapezoidal in shape (Figure 15).

One feature was found in Trench 5. Feature 13 was a brick wall running north-south along the city grid lines, with a possible builder's trench adjoining on the east. The wall was 2-courses wide, with all the bricks laid as stretchers. Both the wall and the possible builder's trench extended beyond 4 feet in depth from the parking lot surface, which precluded further excavation for safety reasons. This feature matched the location of the western wall for Ice/Engine room on the 1885 Sanborn map (Figure 3). The possible builder's trench would have been on the interior of the structure.

Four strata were observed in Trench 5 (Figure 15). Stratum A was the asphalt parking lot, Stratum B was the coarse sand and gravel bedding for the asphalt, Stratum C was a silty clay fill layer overlaying the brick wall (and partially redeposited in a builder's trench next to the modern concrete barrier), and Stratum D was subsoil.

Trench 6

Trench 6 measured 43 feet long by 4 feet wide. The trench originally was scoped to be 40 feet long, but was extended slightly when a sizeable feature (Feature 4) was encountered at the southeastern end. This trench was placed to intercept the interior of the southern two structures of the brewery shown on the 1885 and 1891 Sanborn maps (Figures 3 and 4), and shown but not labeled on the 1877 Hopkins map (Figure 2), as well as the malting structure and the adjacent building to the north shown on the 1907 Sanborn map (Figure 6).

Three features were found in Trench 6 (Figure 16). Feature 4, located at the extreme southeastern end of the trench, was a square brick surface over a thick concentric square concrete pad. At one time, the brick surface was at least 2-courses thick, but grading appears to have truncated it, and only one full course and part of a second course survive now. The concrete pad measured 1.5 feet thick and was cut into subsoil. Because the trench encountered only a corner of this feature, complete horizontal measurements of either the brick surface or the concrete pad could not be taken. A thin clay fill layer capped the entire feature.

Feature 5 was located approximately 6 feet northwest of Feature 4 and was a brick and mortar-constructed shaft feature cut into subsoil. The upper courses of the shaft were partially disturbed from grading on the block. The shaft was lined (or parged) with cement on its interior surface, and the cavity of the feature was filled with brick rubble in a silty clay fill matrix. After removing some of this fill to delineate the shaft outline, the remainder was left *in situ*. In plan view, Feature 5 appeared roughly "figure 8"-shaped on the east, but rounded on the west. Since the width of the trench was narrower than the diameter of the feature, it is unclear whether the shape of the shaft was originally round or oval, and later pushed out in places during demolition or backfilling, or whether the intended shape actually was more irregular, like a "figure 8." It appears that the feature was constructed by excavating a shaft and pressing the bricks and mortar out against the subsoil. The exterior of the feature, where it would have been below grade and

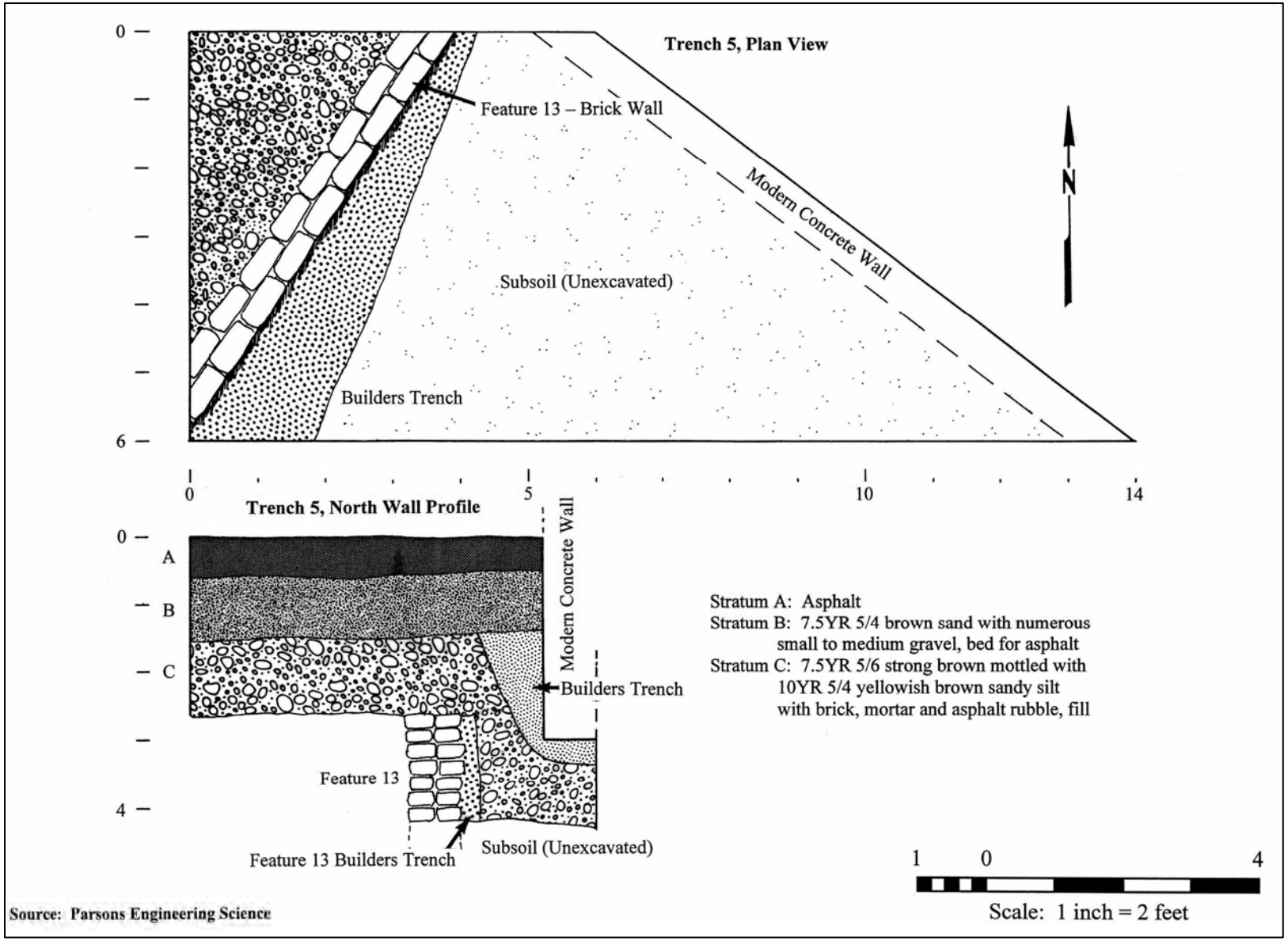

Figure 15. Trench 5 Plan View and North Wall Profile

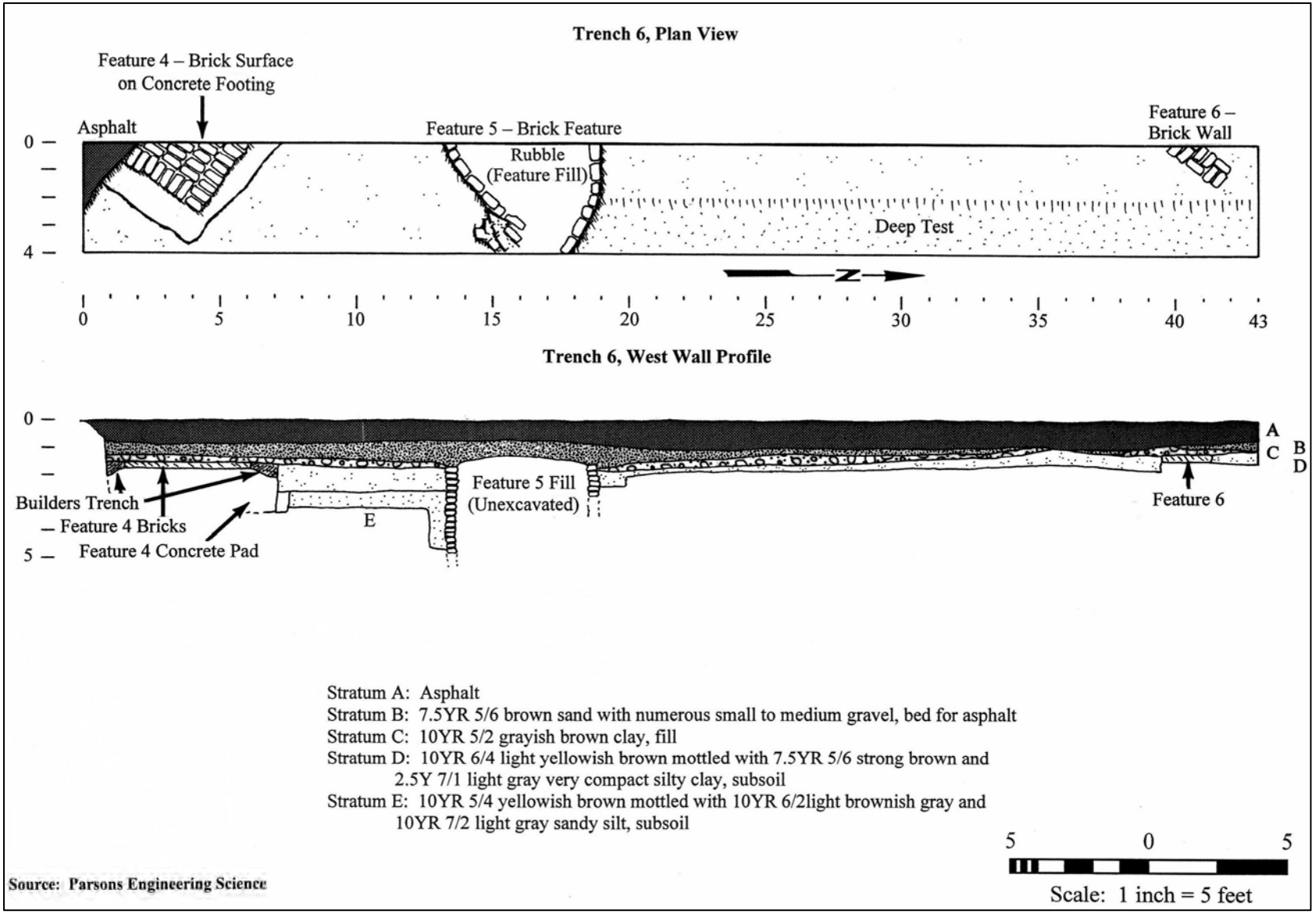

Figure 16. Trench 6 Plan View and West Wall Profile

unexposed to view, was laid in a haphazard manner, implying the bricks and mortar were pressed directly into the adjacent subsoil and not smoothed from the outside. On the east side, the exterior of the feature was exposed for 12 courses of bricks, or approximately 3 feet, below the top of the feature. Probing revealed at least 3 more feet of bricks below that. Feature 5 matched the approximate location of a circle labeled "pump over 2 driven wells" in the washroom on the 1885 Sanborn map (Figure 3). Later Sanborn maps do not retain this notation.

The last feature, labeled Feature 6, was located at the northwestern end of the trench. It was a single course of bricks, measuring 1-foot wide and oriented north-south, parallel to St. Asaph Street. The brick alignment rested on a thin bed of mortar, which sat on top of subsoil. Since this brick alignment was only 1-course thick and not a load-bearing wall, it probably was an interior wall. The location suggests that Feature 6 may represent a remnant of the interior wall between the Ice/Engine Room and the beer vault (as depicted on the 1885 Sanborn map [Figure 3]).

Stratigraphy for Trench 6 consisted of asphalt and underlying coarse sand and gravel bedding material for the asphalt (Strata A and B, respectively), followed by a clay fill layer (Stratum C) capping all of the features, and subsoil (Strata D and E) (Figure 16). The trench contained no intact cultural deposits other than the fill within Feature 5.

Trench 7

Trench 7 measured 10 feet long by 6 feet wide. It was placed to intercept portions of the boiler room, shown initially on the 1885 Sanborn map (Figure 3). A single feature was found in this trench. Feature 15 was a north-south wooden conduit housing 7 rubber-coated wires (Figure 17). According to the Sanborn maps, this conduit would have been located just west of and parallel to the boilers.

The stratigraphic profile in Trench 7 consisted of asphalt and associated coarse sand and gravel bedding material for the asphalt (Strata A and B), followed by a layer of mixed silty sand with pockets of clay and some brick rubble (Stratum C), and subsoil (Stratum D) (Figure 17). Feature 15 lay on top of and cut into Stratum C, which was probably not fill, but an intact cultural deposit. In profile, Stratum C measured approximately 0.5-foot thick.

Trench 8

Trench 8 measured 24 feet long by 7.5 feet wide. It originally was scoped to be 20 feet long, but was extended when a large feature (Feature 1) was encountered at its south end. The trench was placed to intercept the former footprint of the mill house, shown initially on the 1896 Sanborn map (Figure 5).

The stratigraphy in Trench 8 consisted of asphalt (Stratum A), coarse sand and gravel bedding for the asphalt (Stratum B), a layer of mixed demolition rubble and clay fill (Stratum C), and subsoil (Stratum D) (Figure 18). There were no intact cultural deposits.

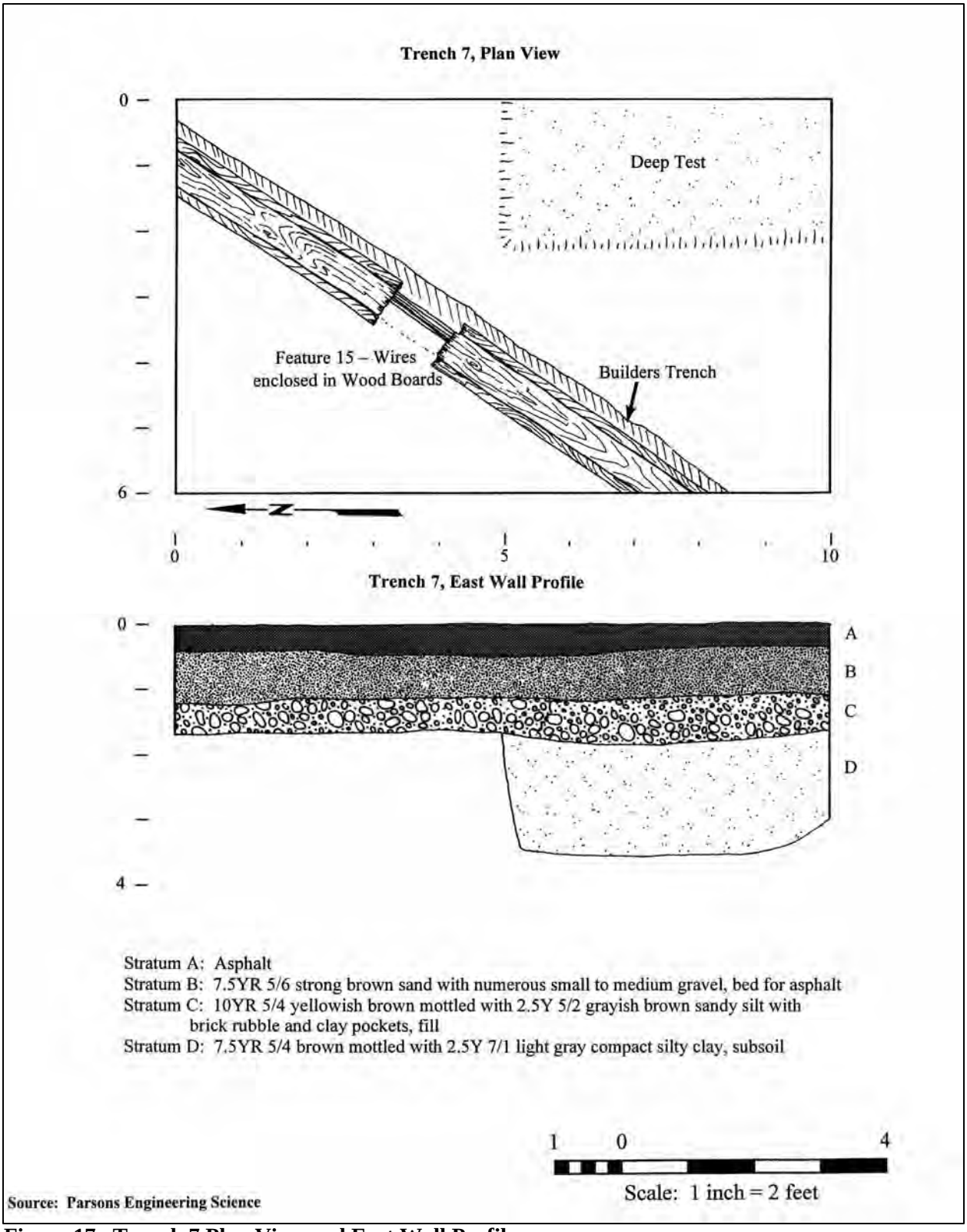

Figure 17. Trench 7 Plan View and East Wall Profile

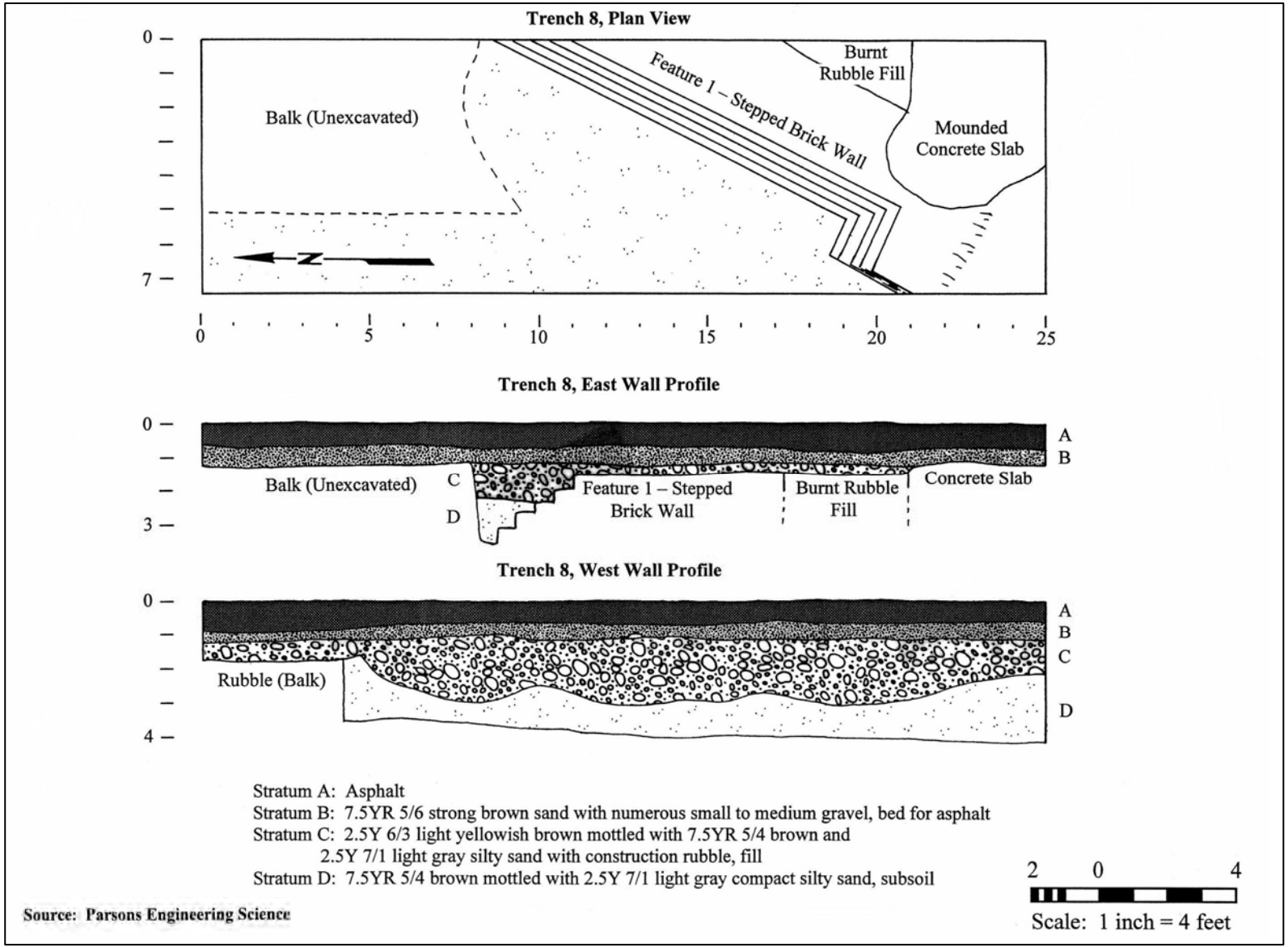

Figure 18. Trench 8 Plan View, and East and West Wall Profiles

The corner of a substantial stepped brick foundation, designated Feature 1, matched the location of the new brewhouse's (1894) southwest corner, shown initially on the 1896 Sanborn map (Figure 5). The trench exposed the exterior side of the west wall, which was cut into subsoil. The wall had 7 courses of bricks and rested on a shelf of concrete tempered with brickbats and cobbles.

Trench 9

Trench 9 measured 45 feet long by 6.5 feet wide. Although originally scoped to be 40 feet long, the trench was extended when a feature (Feature 3, described below) was found at its south end. A 5.5-foot balk was left in the center of the trench, running east-west, to avoid active gas and sewer lines connecting the furniture store to the west with trunk lines under St. Asaph Street to the east. The trench was placed within the former footprint of the new brewhouse (1894), shown initially on the 1896 Sanborn map (Figure 5).

Stratigraphy in Trench 9 consisted of asphalt and coarse sand and gravel bedding for the asphalt (Strata A and B, respectively), a thin lens of demolition rubble and clay fill (Stratum C), and subsoil (Strata D and E) (Figure 19). There were no intact cultural deposits.

Three features were found in Trench 9 (Figure 19). In the approximate center of the trench, more of Feature 1 was uncovered and represented the south wall of the new brewhouse (1894). Here, the wall was 8-courses thick rather than 7, probably due to the slope of the ground moving east. It was stepped on both the north and south sides. Feature 2 was a square slab of dressed granite set in a concentric square pit of soil, all of which rested on top of a concrete pad. Feature 3 was the eastern face of a brick wall, which was visible only in the west profile, at the southern end of the trench. The wall had 5 courses of bricks and measured 3.2 feet in width. Feature 3 may correspond to part of the east wall of the Grain Dryer building shown on the 1907 (Figure 6) and 1921 (Figure 7) Sanborn maps.

Trench 10

Trench 10 measured 25 feet long by 6 feet wide. It was placed to intercept the former cooper's shop and house, shown initially on the 1885 Sanborn map (Figure 3) and labeled as a grocery and print room. By 1907, the buildings were used for storage (Figure 6).

Stratigraphy in this trench consisted of asphalt (Stratum A), coarse sand and gravel bedding for the asphalt (Stratum B), a very thick (ca. 2.5-3.5 feet) layer of redeposited mixed clay fill (Stratum C), and subsoil (Stratum D) (Figure 20). There were no intact cultural deposits.

An approximately 1-inch diameter cast iron water or gas pipe and associated pipe trench was found near the base of Stratum C at the southwestern end of the trench. This pipe was oriented north-south and would have connected to a line under Pendleton Street. Because the pipe and pipe trench appeared to be twentieth-century in origin and were found in association with demolition fill, they were not assigned a feature number. No other features were found in Trench 10.

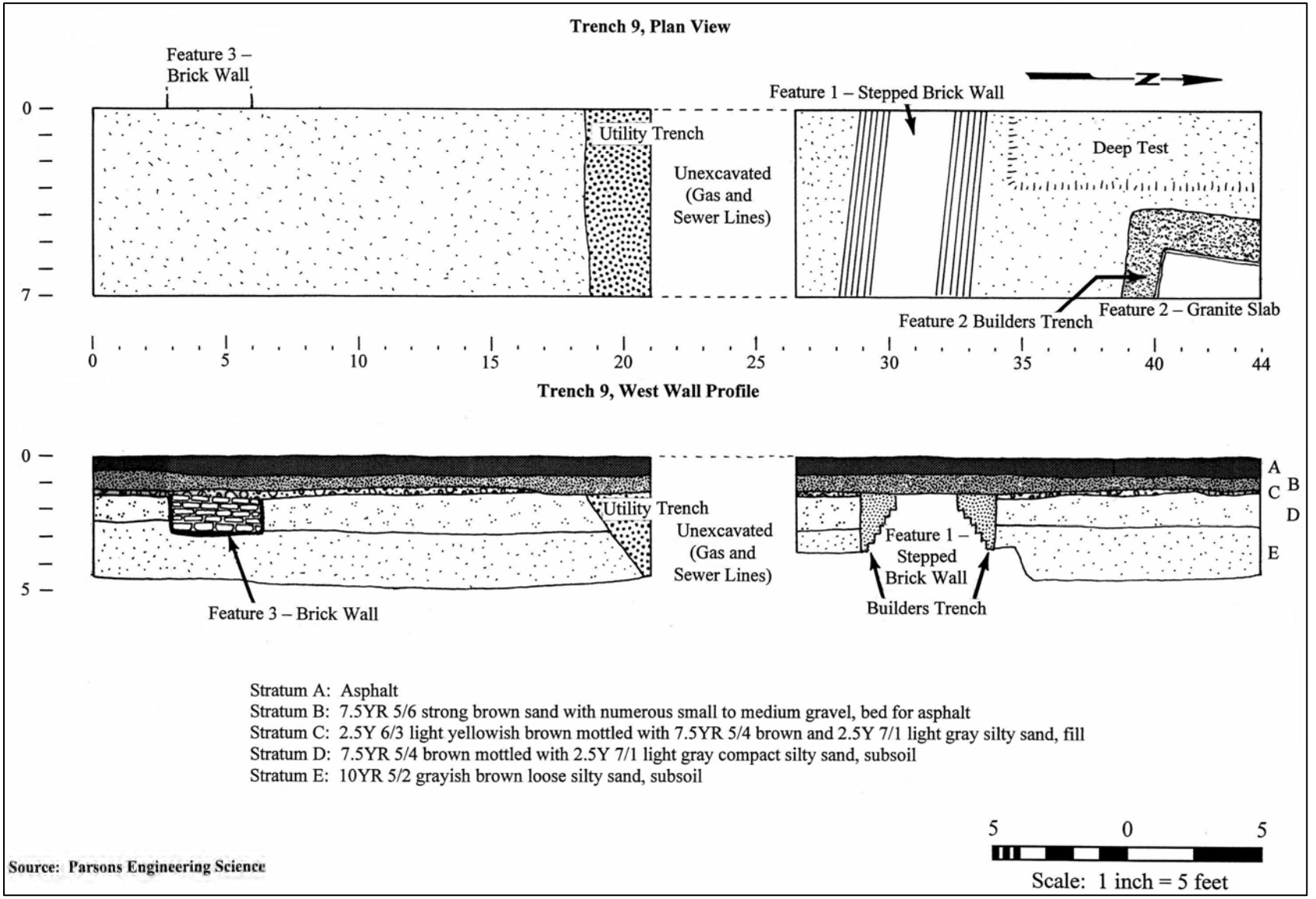

Figure 19. Trench 9 Plan View and West Wall Profile

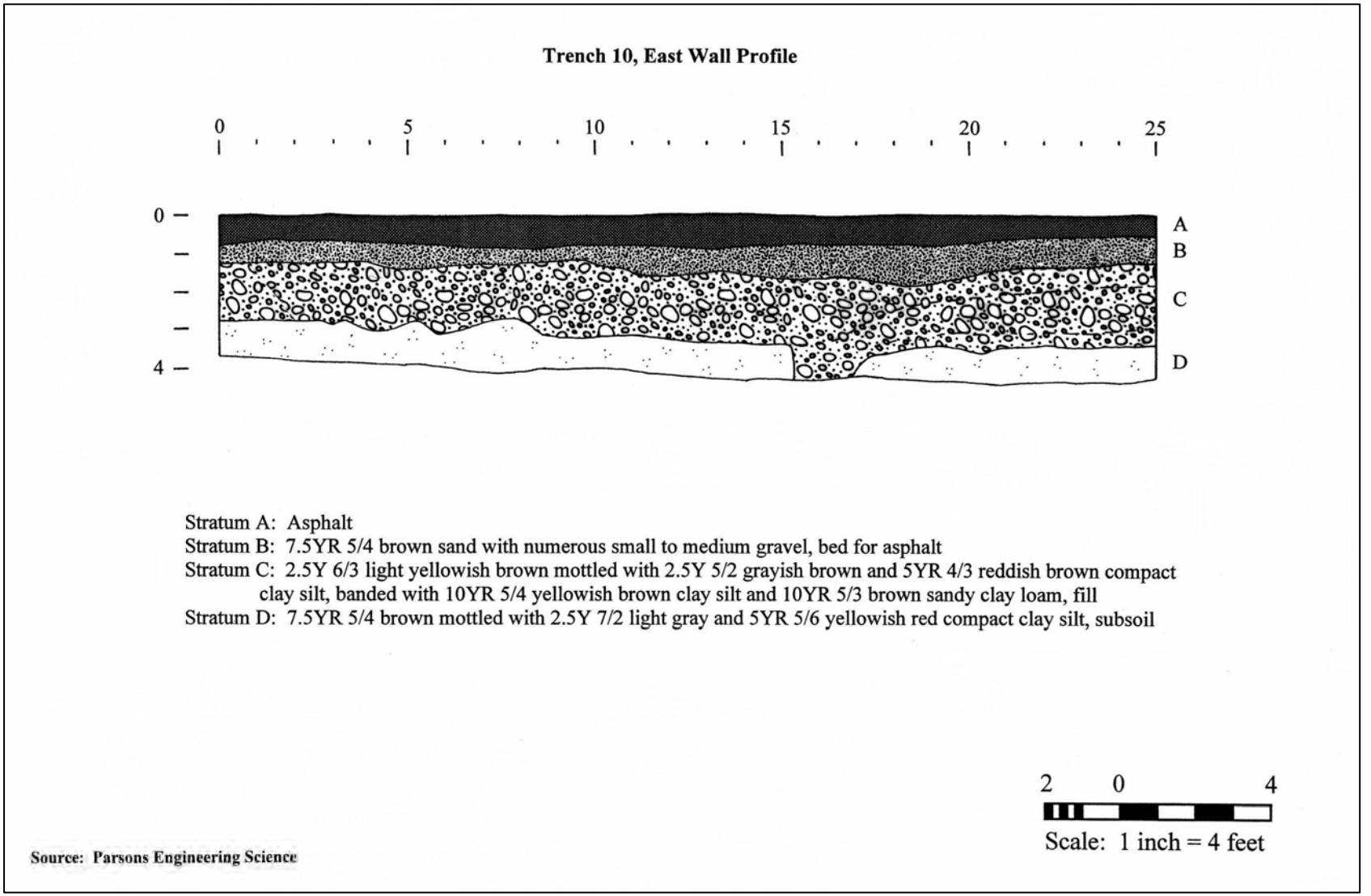

Figure 20. Trench 10, East Wall Profile

Trench 11

Trench 11 measured 20 feet long by 5 feet wide. It was located in an unimproved area of the block, according to historic maps. The trench straddled a 4-foot wide concrete parking divider. This barrier was left as a balk and not removed.

The stratigraphy in this trench consisted of asphalt (Stratum A), coarse sand and gravel bedding for the asphalt (Stratum B), and subsoil (Stratum C) (Figure 21). Unlike other soil profiles on the block, there was no historic fill between the modern asphalt and the subsoil. This area appears to have been truncated by modern grading. No features were found in Trench 11.

B. Phase II Results

Forty-one additional features were identified during Phase II investigations (Table 3). These features included brick walls and foundations, circular brick shafts, brick, concrete and stone pads, a concrete floor, concrete and metal mounts, builder's trenches, modern utility trenches, and drain elements.

Area 1 (South Area, Figure 22)

Area 1 was a rectangular excavation, roughly 100 feet (north-south) by 60 feet (east-west). Phase I features identified in this area included Feature 1, a large brick wall and concrete slab, located near the far southwest corner of the excavation. The corner of a substantial stepped brick matched the location of the new brewhouse's (1894) southwest corner, shown beginning on the 1896 Sanborn map (Figure 5). Excavations in Phase I exposed the exterior side of the west wall, which was cut into subsoil. The wall had 7 courses of bricks and rested on a shelf of concrete tempered with brickbats and cobbles. When exposed, Feature 1 extended 12 feet north from the southern end of the excavation and was 5 feet wide. At the northern extent of this section of Feature 1, a large cistern (Feature 41) interupted Feature 1. The cistern was 10 feet in diameter, and was mechanically excavated to more than 20 feet below the current surface. As this depth was approximately 5 feet deeper than the construction impact, excavation ceased. Feature 41 consisted of an unparged interior brick structure. The fill excavated from it was a homogenous dense clay and brick rubble stratum. No meaningful archaeological deposits or artifacts were found. The cistern appears to pre-date the wall (Feature 1), as the points of contact between Features 1 and 41 showed the cistern to be intact, and a repair to the wall was detected. Feature 41 may represent one of the four driven wells located in the pump house on the 1885 Sanborn map (Figure 3). The north-south portion of Feature 1 continued 10 feet to the north.

At this point, Feature 1 turned east and continued out of the excavation area (this section of the wall was designated Feature 44 in the field, but changed to Feature 1). A perpendicular section of brick wall was found at the extreme southern extent of the excavation adjoining the north-south section of Feature 1. As both of these walls were determined to be the exterior of the building, the east-west section also was designated as Feature 1. Abutting Feature 1 on the north was

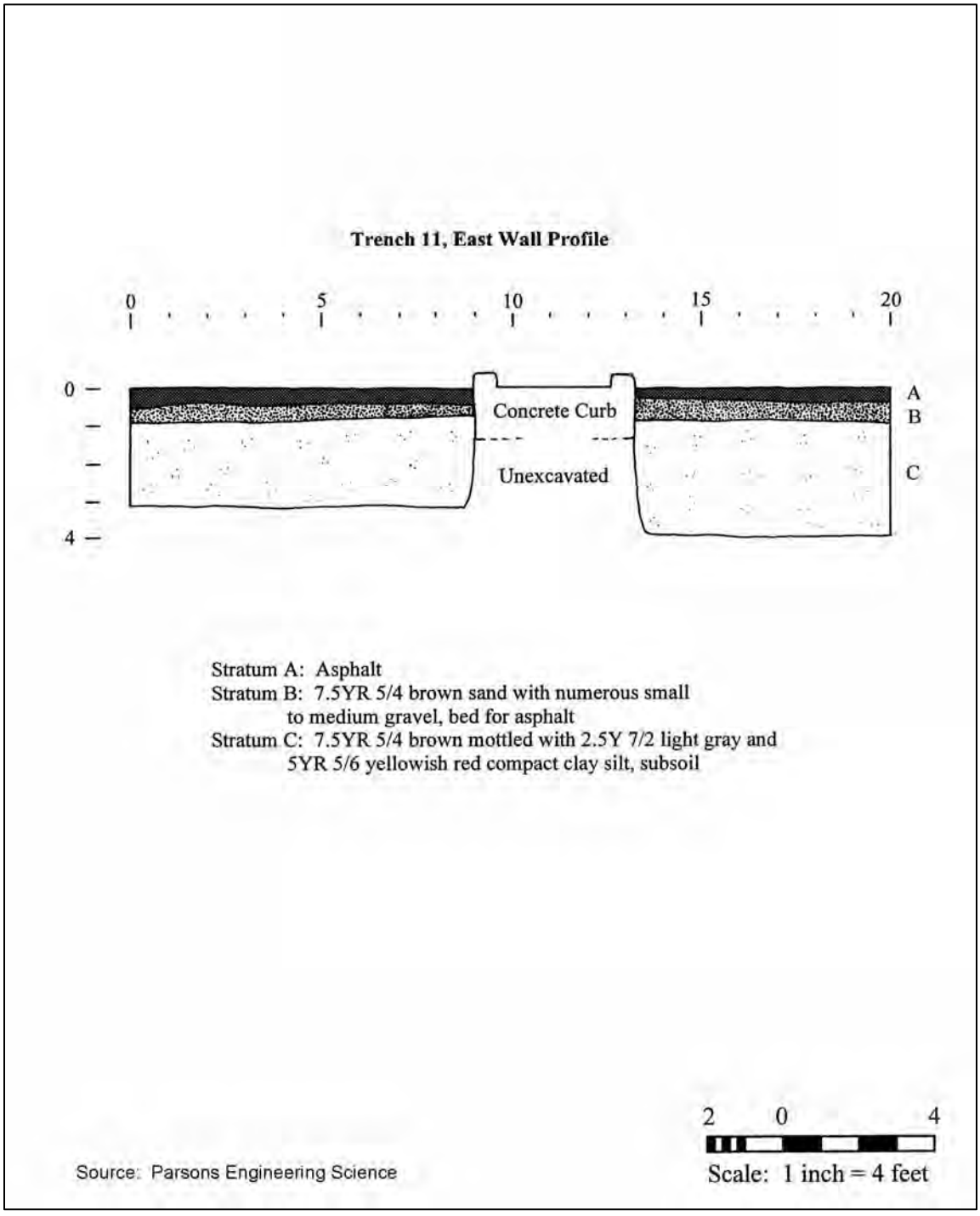

Figure 21. Trench 11, East Wall Profile

Table 3. Phase II Features

Feature Number	Provenience	Description	Association
16	Area 2, North	Support base	Feature 33
17	Area 2, North	Support base	Feature 33
18	Area 2, North	Support base	Feature 33
19	Area 2, North	Support base	Feature 33
20	Area 2, North	Central floor gutter	Feature 33
21	Area 2, North	Soil boring	Feature 33
22	Area 2, North	Iron staining on the floor	Feature 33
23	Area 2, North	Alcove in brickwork	Feature 33
24	Area 2, North	3 inch round floor opening	Feature 33
25	Area 2, North	Rectangular concrete mount with central metal attachment	Feature 33
26	Area 2, North	Rectangular concrete mount with central metal attachment	Feature 33
27	Area 2, North	Builder's trench	Feature 14
28			
29	Area 2, North	Builder's trench remnant	Part of Feature 27
30	Area 2, North	Square concrete slab	On top of Feature 31
31	Area 2, North	Concrete covered rectangular brick support	
32	Area 2, North	Brick footer, four courses of brick with plaster coating	Feature 14
33	Area 2, North	Concrete floor of beer vault	Below Feature 32, associated with Feature 14
34			
35	Area 2, North	Concrete slab	
36	Area 1, South	Modern Utility trench	Feature 1 interior (intrusive)
37	Area 1, South	Builder's trench	Feature 1 interior, north of south wall
38	Area 1, South	Irregular soil discontinuity-large utility trench	Feature 1 interior (intrusive)
39	Area 1, South	Concrete square pad, with single course of brick, two wide	Feature 1, associated with Feature 2
40	Area 1, South	Brick structure with bolts in arc, capped with concrete	Feature 1
41	Area 1, South	Circular brick feature-unparged interior	

42	Area 1, South	Square concrete pad	Feature 1
43	Area 1, South	Square slab of dressed granite	Feature 1
44	Area 1, South	Brick wall trending east-west	Feature 1
45	Area 1, South	Brick wall trending east-west	
46	Area 1, South	Circular brick feature	
47	Area 1, South	Concrete pad	
48	Area 1, South	Concrete and brick support	
49	Area 1, South	Brick wall trending east-west	
50	Area 1, South	Brick wall trending north-south	
51	Area 1, South	Brick wall trending east-west; wall depression and brick rubble	
52	Area 1, South	Brick wall trending north-south	
53	Area 1, South	Brick wall or pier fragment	Feature 51
54	Area 1, South	Slab of unmortared bricks	Feature 36
55	Area 1, South	Brick wall trending north-south	
56	Area 1, South	Irregular soil discontinuity-large utility trench	Part of Feature 38 (intrusive)

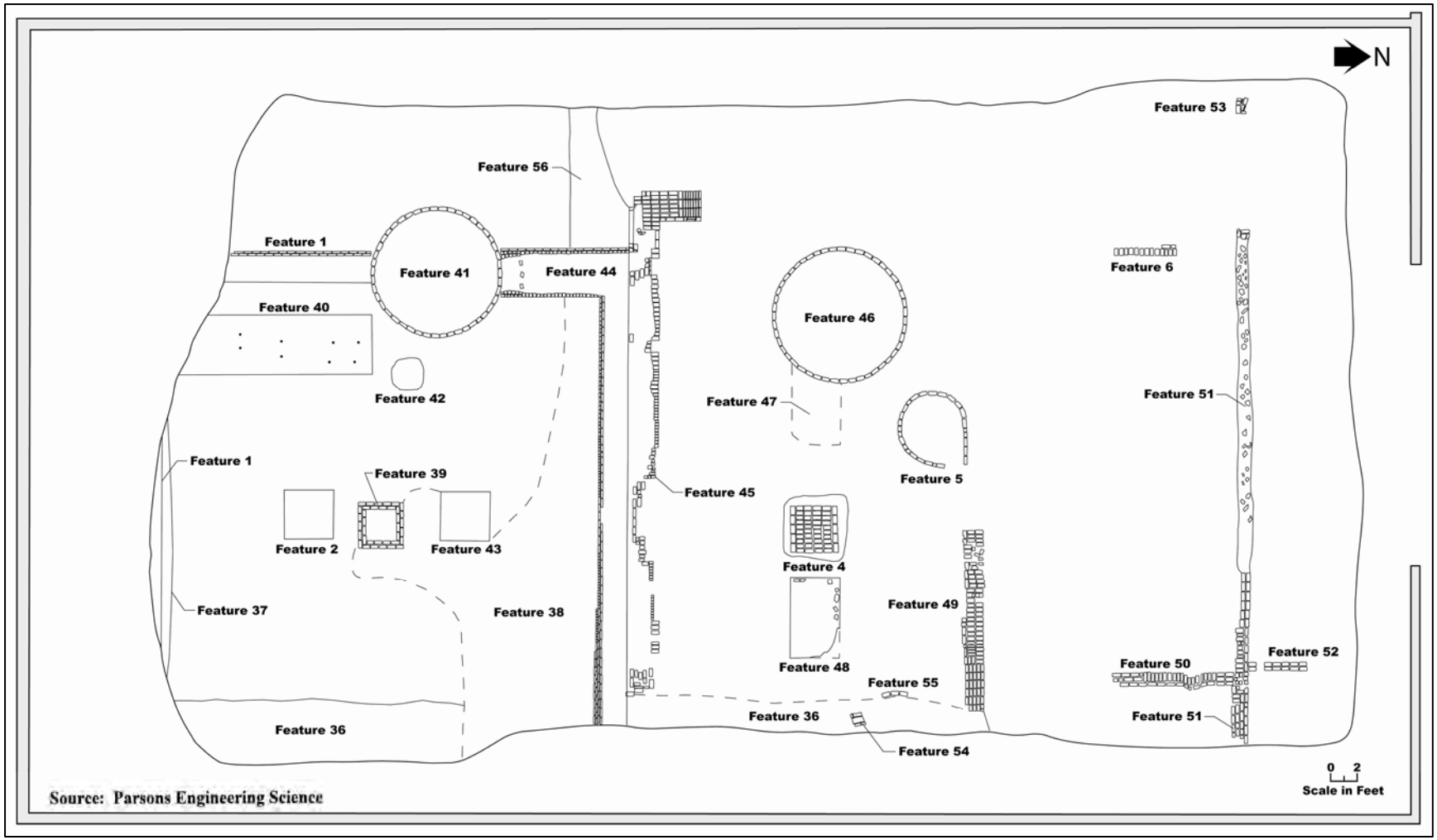

Figure 22. Area 1 South Features

another brick wall (Feature 45). It was paved on the top section with concrete and was 2.5 feet in width. The building associated with Feature 45 was offset slightly with the Feature 1 structure. Feature 45 continued an additional 4 feet west, and turned north. This section of the north-south portion of the wall extended an additional 3 feet. The remainder of the wall was likely destroyed during demolition of the buildings and the construction of the current parking lot.

Several interior features were found in the confines of the Feature 1 walls. These consisted of Features 2, 36, 37, 38, 39, 40, 42, and 43. A description of each feature follows below.

Feature 37 was a shallow, narrow remnant of a builder's trench immediately north of the south wall of Feature 1. It varied from 7 to 12 inches in width, but was only 3 to 4 inches deep. No meaningful artifacts were recovered from Feature 37.

Feature 40 ran perpendicular to the western wall of Feature 1. It was a large brick structure capped with concrete with 4 sets of protruding bolts spaced in a wide arc. The pairs of bolts most likely were used to secure the machinery to its foundation. Feature 40 was likely the support base for some type of machinery.

Feature 2 was a concrete pier located 20 feet east of Feature 1. Feature 2 was a square slab of dressed granite set in a concentric square pit of soil, all of which rested on top of a concrete pad. The granite slab was 1.5 feet thick and approximately 4 by 4 feet. Two additional support features were found in association with Feature 2. Slightly offset to the east and 2 feet south of Feature 2, Feature 39 was another square concrete pad measuring 4 by 4 feet. It had a single tier of brick; two courses wide adhered to it. The bricks were offset 2 inches inside the edge. Feature 43 was another 4 by 4-foot square pier located 4 feet north of Feature 39. It was identical to Feature 2 in size and materials.

Feature 42, found 1.5 feet east of Feature 41, was a 2.5 by 2.5-foot concrete support. Based on its proximity to the cistern (Feature 41), it may have supported a pump or some other associated equipment.

Feature 36 was a north-south linear feature located on the extreme eastern portion of the excavation immediately adjacent and parallel to the sidewalk fronting St. Asaph Street. It was detected directly below the asphalt layer. Its fill component was redeposited subsoil clay containing high concentrations of brick rubble and gravel. Artifacts collected from Feature 36 were consistently modern bottle glass, gravel, and metal. Feature 36 most likely represents a modern utility trench.

Feature 38 was an irregular soil discontinuity located just south of the northern most wall portion of Feature 1. It truncated Feature 36, indicating an even more recent origin. Its fill was comprised of sand and gravel, and is likely a large utility trench. It continued on the west side of Feature 1, and out of the excavated area on both the east and west sides. It was mechanically cross- sectioned, but its base was not found.

North of Feature 45 (the east-west wall abutting Feature 1) was a cluster of features. These appeared to be inside the structure associated with Feature 45 and included Features 4, 5, 6, 46, 47, 48, 54, and 55. Feature 4, a brick and concrete pier found during Phase I, was a square brick surface over a thick concentric square concrete pad. At one time, the brick surface was at least 2 courses thick, but grading appears to have truncated it since only one full course and part of a second course survive now. The concrete pad measured 1.5 feet thick and was cut into subsoil.

Phase II testing of Feature 5, a well found during Phase I, revealed that at a depth of 7 feet, the teardrop shape changed to a more regular, circular configuration. Below this first 7 feet of excavation, the well was not parged on either the interior or the exterior surface. It had a rough mortar between the bricks. The first 7 feet were excavated by hand, but the nature of the fill and the artifacts indicated that the fill was of recent origin. The remaining 13 feet of excavation were conducted by backhoe and reached a maximum depth of 20 feet. Fill from the well was inspected by archaeologists until maximum depth was attained. Based on the nature of the fill and modern artifacts, it appeared that the well was filled relatively late, probably during the final demolition of the plant.

Feature 46 was a large brick cistern located approximately 4 feet southwest of Feature 5. Its diameter was 11 feet. From the current excavated surface, Feature 46 extended to a maximum depth of 7.5 feet. Its interior surface (both sides and bottom) was parged with a thin ($1/18^{th}$-inch) layer of concrete. The upper 3 feet of fill encountered consisted of dark yellowish brown, very compact sandy clay and pea gravel. This fill was the same material used to cover the entire parking lot beneath the asphalt surface. Beneath the first layer of fill was another fill layer of very dense clay, brick rubble, wood, and other architectural refuse. Several large fragments of mortared brick were revealed during excavation and interpreted as part of the cap for the cistern. The base of the cistern was parged over a single layer of bricks. Feature 46 showed no obvious builder's trench, again implying that the cistern was built by laying bricks against the outer edge of the excavated depression.

Feature 47 was located immediately east and abutting Feature 46. It consisted of a concrete pad measuring 5 feet by 4 feet. It was badly disturbed during the demolition of the plant and subsequent grading. It may have been an interior building support.

Feature 48 was another concrete and brick support measuring 4 feet (north-south) by 7 feet (east-west). It was also disturbed by demolition and grading. Located 11 feet east of Feature 47 and 1 foot east of Feature 4, Feature 48 most likely served as an interior building support.

Feature 55 was a small wall remnant located on the east side of the excavation. It consisted of only a single tier of 3 bricks that extended 3 feet within a small trench. It has been badly disturbed by Feature 36, the large modern utility trench running parallel to St. Asaph Street.

Feature 54 consisted of a large slab of mortared bricks located in Feature 36. It was determined to be a portion of demolition debris redeposited in the utility trench rather than an *in situ* feature.

Feature 49 was a portion of the east-west wall of the structure containing Features 4, 5, 46, 47, and 48. It was also badly disturbed by grading activities, and only a 15-foot section remained. It

was truncated on its east side by Feature 36 (utility trench) and its western portions had been graded away.

At the northern extreme of Area 1, another cluster of features was documented. These included Feature 6, located during the Phase I survey, and a series of brick wall features labeled Features 50, 51, and 52.

Feature 6 was located near the northern and western limit of Area 1 and consisted of a brick wall fragment. Phase II excavations fully exposed Feature 6. It extended 5 feet in a north-south orientation, but most of this wall had been destroyed during demolition and grading activities. Since this brick alignment was only one course thick and not a load-bearing wall, it probably was an interior wall. The location suggests that Feature 6 may represent a remnant of the interior wall between the Ice/Engine Room and the beer vault (as depicted on the 1885 Sanborn map [Figure 3]).

Feature 50 was a north-south wall that formed a T-shaped foundation fragment with Features 51 and 52. It was a 9.5-foot section of wall that joined Feature 51, an east-west section of the same structure. Feature 50 may represent the remnants of an interior wall and may be the west wall of the Malt Scale room (Figure 3) if this room was located on the first floor.

Feature 51 was badly disturbed, with only a 14-foot section retaining brickwork. The wall base continued an additional 28 feet west, but only a shallow depression with brick rubble survived.

Feature 52 was another north-south wall that continued north from, and formed a right angle with, Feature 51. Only a small 5.5-foot section remained since grading had destroyed the northern portions. It lined up with Feature 50, but was only 2 brick courses wide and 1 foot further west than the western extent of Feature 50. Feature 52 may have been an interior wall associated with the disturbed northern portions of Feature 50.

Feature 53 was a small group of bricks aligned with Feature 51. Measuring 15 by 8 inches in diameter, it was found 9 feet west of the end of Feature 51. It may be a small remnant of Feature 51.

Area 2 (North Area)

Area 2 was an excavated area measuring approximately 60 feet north-south by 70 feet east-west. This excavation was targeted to fully expose the 50 by 70-foot beer vault previously discovered during the Phase I survey in Trenches 3 and 4. During the excavations of the beer vault, many additional structural features were encountered, including a series of interior supports, walls, drains, and other industrial features. Due to the extreme disturbance to the surrounding soils during demolition of the buildings and subsequent grading, no meaningful archaeological strata were encountered.

The excavated portion of the beer vault consisted of an area approximately 50 feet (north-south) by 35 feet (east-west). The actual area was larger, but due to the unconsolidated nature of the

demolition debris contained in the vault, it was necessary to attain a 2/1 slope on this fill to maintain a safe working environment.

Excavation revealed that Feature 14 was the western extent of the vault, as sterile subsoil was found immediately west of the wall. The northern corner could not be found due to proximity to Wythe Street. A number of utilities fronting on Wythe Street, combined with the unconsolidated nature of the fill inside the vault, made continuing the excavation to the street unsafe. Feature 14 was exposed to the distance of 33.5 feet, at which point the wall turned east. This corner formed the southwestern extent of the northern beer vault. Feature 14 was comprised of 11 courses of stretcher bricks, or bricks placed on the long axis end to end. In some areas, a thin, ¼-inch plaster adhered to the walls. The plaster was poorly preserved, but it did appear that the entire wall had been plastered. Between the second and third courses of brick, pairs of cut nails were observed driven into the mortar joint. These pairs of nails were spaced at relatively even intervals of every 2 feet. Wood fragments were observed on these nails and were likely remains of wood paneling that covered the brick walls and added after the plaster coating. Below the 11th course of brick, a footer (Feature 32) was observed. This footer consisted of an additional 4 courses of brick, but extended in an overlap fashion, increasing in width as depth increased. Plaster coating was also observed covering the footer. The footer terminated onto a concrete floor (Feature 33).

A total of 12 additional features were found on the floor of the vault. These consisted of Features 16 through 19 (structural supports); 20, 23, and 24 (floor drains); 22 (iron staining on floor, which may have been an equipment mount); 21 (not an associated feature, but a soil boring excavated at some time after the demolition of the brewery); Feature 24 (a small round hole in the concrete floor that may have been a drain); and Features 25 and 26 (two small rectangular [6.5 by 5 inch] concrete equipment mounts with 1.5-inch diameter metal attachments in the center).

Feature 20 was a 10-inch wide gutter located in the center of the vault floor. The floor (Feature 33) was pitched and sloped from the west to the east. The elevation of the floor at the western extent was 1 foot higher in elevation than at the eastern extent. This central floor gutter was designed to carry away any water from ice melt, cleaning water, and spilled beer from the vault. It likely carried these liquids out of the vault and into a storm sewer or some other catchment system. Feature 23 was an alcove in the brickwork that drained into Feature 20. It probably was installed to drain condensation liquids that would have gathered behind the brick walls or woodwork. Feature 24 was a 3-inch round opening in the floor that also may have served as a floor drain.

Features 16 through 19 were a series of four support bases located 2 feet north of the center floor drain (Feature 20). These supports were evenly placed at 10-foot intervals (from center to center), with Feature 16 farthest east and Feature 19 at the westernmost post. As the floor sloped, each subsequent support to the east increased in size with a larger and higher base.

A jackhammer was used to break the concrete floor and a backhoe trench was excavated into the substrata beneath the basement. No meaningful archaeological strata were found during the excavation of the test trench beneath the beer vault. A thin layer of fill consisting of pea gravel

and course sand was noted overlying sterile, natural subsoil. Feature 14 also continued beneath the concrete floor to an additional depth of 2 feet. The builder's trench (Feature 27) also was located in the test trench at the base of Feature 14. No artifacts were recovered from this portion of Feature 27. The builder's trench (Feature 27) was also located immediately west of Feature 14. It consisted of very dense brown and gray mottled clay mixed with brickbats and cobbles. A small section was excavated and no artifacts were recovered. A small soil irregularity was noted along the south wall of Feature 14. This consisted of a small portion of a builder's trench (originally called Feature 29), but included with Feature 27 as it was part of the same builder's trench.

The floor of the northern beer vault also exhibited evenly distributed depressions across the entire area of the exposed floor. The depressions measured about 4.5 feet long by 1 foot wide. These depressions were located from center to center exactly 5 feet apart north to south and from 4 to 5 feet apart east to west. It is likely that these depressions were pressed into the concrete floor by the immense weight of the beer on stands stored in the basement.

Just south of the northern beer vault, three additional structural features were found. Feature 30 was a 26.5 by 26.5-inch square concrete slab that sat atop Feature 31 along its western extent. Feature 31 was a concrete-covered rectangular brick support. It was 7 feet east-west by 5 feet north-south. The brickwork was regular on the exterior and beneath the concrete pad portion of the feature, but the interior was comprised of brick bats and compacted clay fill. Feature 35 was a concrete slab located 4 feet east of Feature 31. It was in very poor condition due to the various demolition/grading activities. It was 10 feet east-west by 6 feet north-south and likely functioned as a support feature.

V. ANALYSIS AND CONCLUSIONS

In the late-1970s, as a direct response to "urban renewal" redevelopment in the heart of the historic city, the City of Alexandria formed a municipal agency responsible for conducting archaeological investigations, and curating and interpreting local artifact collections. By the early-1990s, Alexandria Archaeology was also responsible for enforcing an archaeological ordinance requiring documentary research and archaeological testing or excavation of many redevelopment sites.

The first controlled excavation of any part of the Robert Portner Brewery site occurred in 1994. City archaeologists monitored the demolition of the rear of the 1901 ice plant and the excavation behind it along Pitt Street in preparation for a mixed-use office/residential development. Little was discovered except for brick rubble, a few bottle sherds, and clumps of purple-stained refuse and clay, presumably from the 1907 ink factory across Wythe Street. Similarly, backhoe excavation of the rear (east side) of the 1912 bottling house during the winter of 1997-1998, prior to the construction of "Portner's Landing," produced no evidence of the brewery's large, ca. 1898 stable (Alexandria Archaeology site files).

In 1998, it was proposed that the former Woodward & Lothrop department store (later Mastercraft Interiors) building at 615 North Washington Street be demolished to make way for a multi-use office and retail development to occupy the entire block. The store stood directly atop the old Portner house site and its parking lot included the former location of the brewing plant and cellars. Because the new construction would require very deep foundations, it was clear that construction would destroy any remnants of the former brewery. Saul Centers, Inc., the developer, and Alexandria Archaeology agreed that a cultural resources management firm would be needed to perform archaeological investigations to determine the presence or absence of archaeological resources related to the brewery, record any features present, as well as conduct data recovery excavations, if warranted. Parsons Engineering Science of Fairfax, Virginia, was selected for the work.

Fieldwork began at the end of October 1998 and concluded in January 2000. Initial trenching was conducted through an extensive fill and rubble layer and revealed a variety of structures. These structures were discovered at a level that suggests they would have been located at the very lowest points in the brewery interior or below ground. Clearly, mid-twentieth century demolition and grade modification had been extensive. The structural features encountered could be divided into six categories: bearing wall foundations; partition or platform footings; column bases or footings; equipment mounts; flooring; and water source or storage features. The trenching was useful in quickly identifying the locations of the various sections of the 1868 brewery and the 1894 brewhouse and suggesting where further excavation would be required.

The features exposed in the stripping of the site reveal the arrangement of the brewery at its latest date, such as at the time of its closure in 1916, or even later. Therefore, interpretation of the structural remains will rely mainly upon the latest pre-Prohibition (1907 and 1912) insurance maps and the 1894 description of the "new" brewhouse.

A notable factor of the investigation was the absence of individual artifacts related to brewing or associated with the Robert Portner Brewing Company. This can be attributed to three factors. Firstly, cleanliness was the first commandment in a brewery in order to protect the beer from microbial contamination and souring during fermentation or thereafter. The "modern" brewery was also a very mechanized place; machinery had to be kept clean and well maintained to remain in good working order. For these reasons, the brewery was kept spotless and did not serve as a depository for refuse. Secondly, between the time the brewery closed and when it was clear that it would never reopen, Portner's sons almost certainly sold the brewing equipment to other firms or as scrap. By the time the buildings were demolished in 1935, there would have been little remaining inside them. Thirdly, the 1935 demolition and the subsequent regrading and excavation for the Woodward & Lothrop building would have been quite extensive, accomplished by mid-twentieth century, internal combustion-driven, earth moving equipment. Only a few possibly brewery-related metal objects were observed, including a large iron strap hinge, a wall or beam anchor, some steel and copper pipe and some type of reciprocating machine part.

Demolition, regrading, and excavation activities were undoubtedly responsible for removing all trace of most of the brewery's accessory structures. Test trenches near Oronoco Street and along Washington Street failed to produce evidence of former carpentry and cooper shops, storage sheds, or a structure depicted on the 1877 Hopkins map, which may have been a pre-1865 cottage (one of the '*kuttke*" cottages occupied by Portner, Recker and family after the war) or a building associated with Portner's beer garden. The old Portner family house was, of course, replaced by the department store. In a few spots just west of the site of the 1868 brewery buildings, minor sections of foundations or flooring, undoubtedly parts of the late-nineteenth century additions which contained the boilers, steam engines, electric dynamos, and ice engines were uncovered. In fact, in one of the first trenches, a wooden box conduit containing seven insulated wires was recovered and likely associated with the plant's electrical system.

Sixteen brick wall/foundations or wall fragments were identified during these investigations and represent both exterior and interior walls from various construction episodes at the Robert Portner Brewery (Table 4). Exterior walls associated with the beer vaults (Feature 14), the Ice/Engine room (Feature 13), and the 1868 brewhouse (Feature 45), and interior walls separating the beer vaults and brewhouse (Features 6, 9, 49, 50 and 51) represent the 1885 brewery configuration (Figure 23).

Additional brick foundations associated with the construction of the new brewhouse in 1894 consisted of exterior walls (Feature 1) and new interior walls (Feature 44) which were slightly skewed from the original wall (Feature 45). A later construction period (pre-1907) is represented by the east wall of the Grain Dryer building (Feature 3) (Figure 24).

Table 4. Foundation Features, Robert Portner's Brewery

Feature Number	Feature Type	Dimensions	Function	Dates
1	Brick Wall		South and west walls of New Brewhouse (1894)	1896/1907
3	Brick Wall		East wall of Grain Dryer Building	1907
6	Brick Wall		Interior wall between Ice Engine Room and Cooling Room (1885 map)	1885/1891/1896/1907
9	Brick Wall		Interior wall between the middle two Beer Vaults (second and third vaults)	1885/1891/1896/1907
11	Brick Walls with concrete and stone slab	Slab- 1.7 feet	Pre-1868 Beer Vault walls?	
12	Brick Walls		Pre-1868 Beer Vault walls?	
13	Brick Wall		West wall of Ice Engine Room	1885
14	Brick Walls		West and south walls of Northern Beer Vault (pre-1868 exterior wall?)	1885/1891/1896/1907
32	Brick Footer		Under Northern Beer Vault wall	
33	Concrete Floor		Floor of Northern Beer Vault	
44	Brick Wall		West and north walls of New Brewhouse (1894)	1896/1907
45	Brick Wall with Concrete		Original South wall of Brewery	1885/1891
49	Brick Wall		Interior wall between Original Brewhouse (1868) and Cooling Room (1885 map)	1885/1891/1896/1907
50	Brick Wall		Interior west wall of Malt Scale Room	1885
51	Brick Wall		Interior wall between Cooling Room and Beer Vault (1885 map)	1885/1891/1896/1907
52	Brick Wall		Interior wall	
53	Brick Wall		Footer or continuation of Feature 51	
55	Brick Wall		Interior wall remnant?	

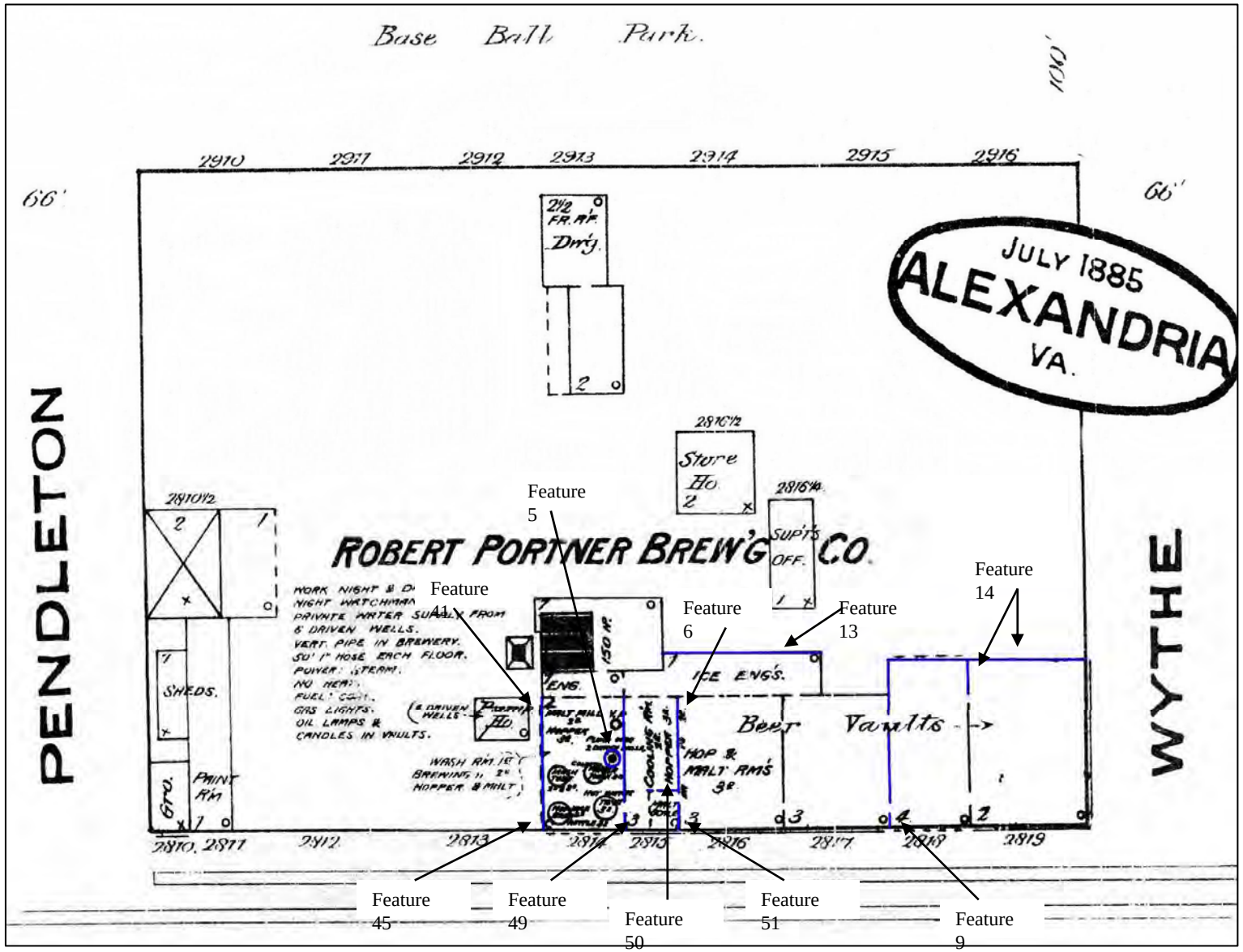

Figure 23. Foundation Features Associated with the 1885 Brewery Configuration

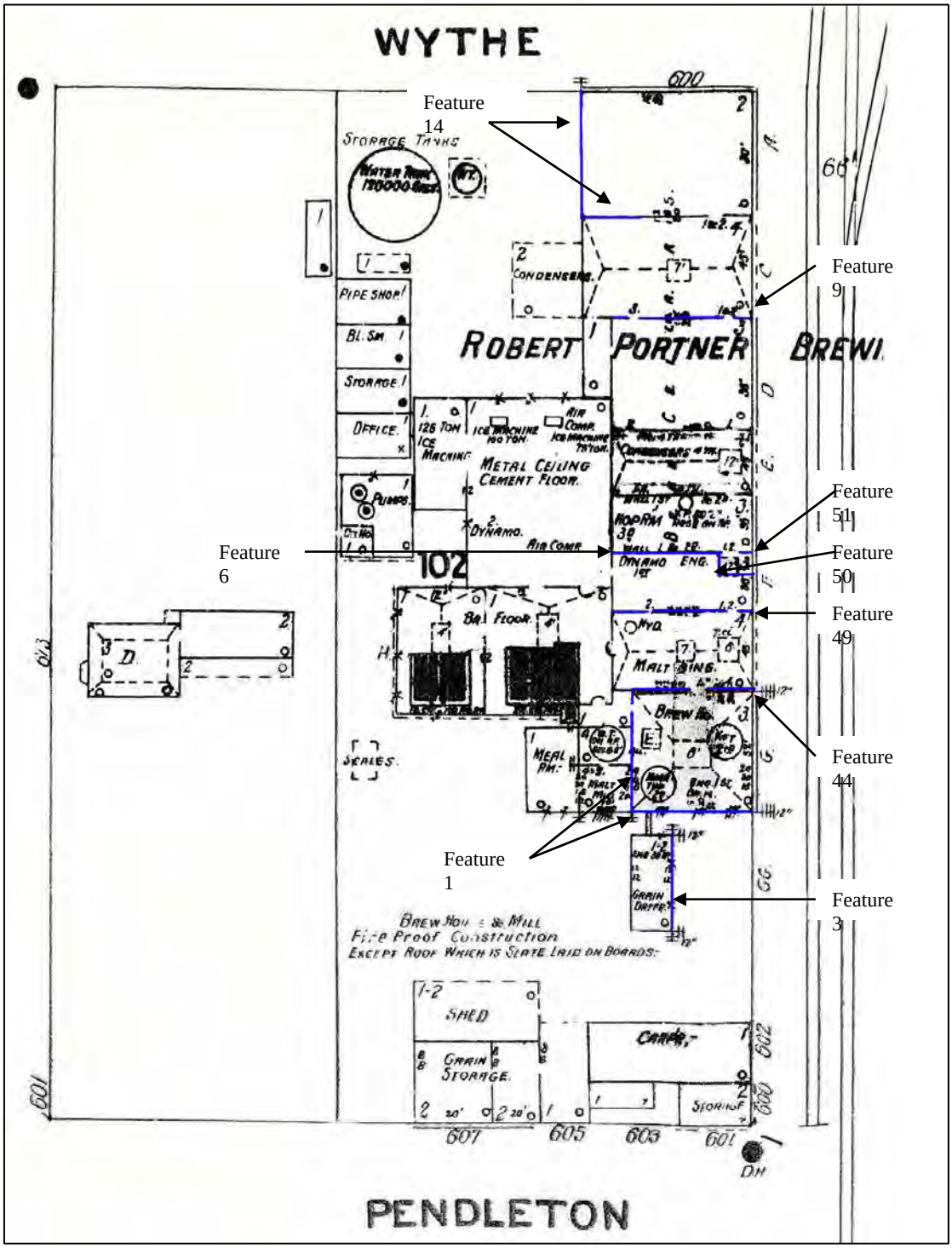

Figure 24. Foundation Features Associated with Later Brewery Expansions.

A. The Brewhouses

Earlier demolitions notwithstanding, the massive foundations of the two (1868 and 1894) brewhouses were found approximately 4 feet below the current grade, confirming the size and location of the structures as depicted on Sanborn insurance maps. Constructed of load-bearing brick masonry, the foundations were as much as 4.5 feet wide. Possible footings or pads for structural support or equipment platforms were located in both brewhouse footprints. Three support features occurred in the 1868 brewhouse: a brick pavement on concrete about 4 x 4 feet (Feature 4); a concrete pad, 5 by 4 feet (Feature 47) and a concrete and brick pad, 4 by 7 feet (Feature 48). Five similar features occurred in the new brewhouse (1894): two granite slabs on concrete, 1.5 feet thick and 4 by 4 feet (Features 2 and 43); a brick and concrete pad 4 by 4 feet (Feature 39); a brick and concrete pad about 5 x 15 feet with a series of bolts (Feature 40); and a concrete pad about 2.5 by 2.5 feet (Feature 42). Feature 40 was most likely a machinery mount and Feature 42 may be related to the cistern (Feature 41).

The new brewhouse (1894) contained two dressed granite slabs (a non-native stone), generally about 18 inches tall and usually at least 4 feet square, that served as pedestals or mounts for equipment or steel posts. The documentary evidence provides the basis for reasonable guesses as to the function of at least the stone blocks in the "new" brewhouse:

> On the ground floor of the brew house is the big hop jack and in the rear is the receiving tank holding 350 barrels. On the same floor is the new Corliss steam engine of 65 horse power, fitted with a pulley weighing four tons, and an eighteen inch wide belt....Three steps above is the machine floor for the accommodation of the special driving device to the wash machine overhead. On a floor above, reached by a short flight of stairs, is located the kettle designed to carry the great load of 55 tons when full, its own weight being over 5 tons....Broad flights of iron stairs lead from floor to floor and a power elevator of two tons' capacity furnishes access to all main levels. (*Alexandria Gazette* April 18, 1894; Miller 1987:364)

However, it is known that the steam engines actually were located behind the brewhouse by 1894. Nor were the mash tun or brew kettle positioned directly above the remaining stone slabs. The granite, therefore, may have supported the cast iron framework that held up the interior platforms and stairs; *or* the hop jack, which added hops to the wort for flavoring, then strained them out; *or* the receiving tank for the brew on its way to the coolers. But perhaps the most likely alternative, however, was that the stones served as the base for the brewhouse freight elevator, depicted on the 1902, 1907, and 1912 Sanborn maps as being in roughly the same location.

Similarly, the slabs in the southeast quarter of the "old" brewhouse also may have supported elevators. When the building was remodeled for barley malt storage, the first floor became the mill room for grinding the malt. "On the ground floor is the malt mill with the two elevators on either side" (*Alexandria Gazette* April 18, 1894; Miller 1987:364). Remaining bricks nearby suggested a partition separated this space and the area to the immediate north, where a floor-level malt scale was located at least ca. 1885 (Sanborn Map Company 1885). However, blueprints dating to the time of the construction of the new brewhouse (1894) depict the old one

converted to grain storage with huge malt bins supported by ten-inch-square timbers set on cast iron plates and concrete or possibly, granite footers (Alexandria Gazette 1894; Miller 1987:364; Alexandria Library Local History Special Collections).

The other notable features of the southern end of the brewery were water source or water storage structures. Two brick shafts were discovered within the old brewhouse (1868), not far from the south wall. The larger measured approximately 11 feet in diameter and only 7 feet deep from the elevation at which it was discovered (Feature 46). The other shaft was approximately 70 inches in diameter, although its upper section was distorted and irregular in shape (Feature 5). On its interior were remnants of parging, a coating of mortar used as a water barrier, in this case, to keep water in. The shallowness of the wider shaft also suggests that these were cisterns for water storage rather than wells for drawing ground water. Feature 5 matched the approximate location of a circle labeled "pump over 2 driven wells" in the washroom on the 1885 Sanborn map (Figure 23).

At the rear of the 1894 brewhouse, interrupting its rear wall, was a third brick shaft, 10 feet in diameter, at least 20 feet deep, and showing no evidence of parging (Feature 41). Its location attests to the fact that it was excavated prior to construction of the 1894 brewhouse, although possibly just before. It actually corresponds to the location of the brewery's ca. 1885 pump house, which was torn down before 1891 and contained "four driven wells" (Sanborn Map Company 1885). Since the builders of the 1894 brewhouse did not run the walls around this shaft or fill it in, this strongly suggests it was being used at the time. The Sanborn insurance maps depict an aperture or passage through to the machine room at this point; the shaft may therefore relate directly to the functioning of the machinery. The shaft or the larger cisterns could possibly relate to hydraulic machinery used to lift the elevators.

Since water is the main ingredient of beer and the primary medium for its preparation, a substantial amount of water is required throughout the brewing process. Simply to fill the Portner company's big brew kettle required 10,850 gallons. The production of 25 to 30 tons of ice per day required at least another 6,000 or 7,000 gallons. Large quantities also were needed to convert the heat energy of the boiler fireboxes into steam for motive power to operate the brewery's mash agitators, pumps, elevators, hoists, conveyors, electric generators, bottling machines, etc. Cisterns or tanks also had to be available in case of fire, for cleaning purposes, for watering the company's horses, and perhaps even for the boilers of the locomotives that carried away loads of beer.

In 1869, Portner probably drew his water from surface wells and possibly, the city water supply. By the mid-1880s, however, deep wells were being driven far below the water table. Ranging from 330 to more than 1,000 feet deep, these wells were essentially narrow pipes bored into the earth. Some of the earlier water features may have remained, either filled in or re-used for other purposes. By 1912, the brewery had at least 10 dug or driven wells, plus a number of other unidentified subterranean receptacles (not to mention large above-ground and rooftop tanks). The location of the two shafts in the old brewhouse (1868) may roughly correspond to a "hyd[rant]" or city water inlet, depicted on the 1907 and 1912 Sanborn maps (and perhaps as early as 1885). Such structures also may have been built over the driven wells; they may have contained pumps and served as reservoirs for the rising (and back-splashing) water. For safety

reasons, the depth of two of the three uncovered shafts could not be identified and it could not determine whether shafts or pipes extended further downward (Sanborn Map Company; *Alexandria Gazette* September 30, 1886; Robert Portner Brewing Company 1897).

B. The Beer Vaults

Two brick foundation features (Features 11 and 12) were identified in the beer vault area which do not correspond to any interior beer vault walls as indicated on the Sanborn Insurance maps. Both features were substantial brick walls with concrete surfaces; Feature 11 occurred within the second beer vault and Feature 12 was located adjacent to the interior wall inside the third beer vault. Two distinct construction episodes were recorded for the west wall of the north beer vault (Feature 14) with the exterior portion representing the original construction and an inner wall characterizing a later stage of construction. These features indicate structural changes to the beer vault configuration. It is possible that Features 11 and 12 could be associated with the original beer vault configuration constructed by Portner in 1865-1867 and the original west wall (Feature 14) of the north beer vault also represents that time frame.

The perfectly preserved floor of the beer cellar (Feature 33) was uncovered at the southwest corner of St. Asaph and Wythe Streets. The northernmost section of the plant, which measured nearly 40 by 50 feet (the edges of the room could not be determined because it would require dangerously undercutting the adjacent sidewalks), would have been the location for the fermentation and aging of much of the beer produced by the brewery, especially prior to 1880. The concrete floor was bisected by a gutter (Feature 20) running west to east and dropping about a foot over its course. The gutter obviously served to drain off ice melt, wash water, and spilled beer. Immediately to the north of the gutter were the remnants of footers for a line of four vanished cast iron columns that once supported the ceiling (Features 16-19). The columns were probably of identical lengths; the footers grew taller as they went east, accounting for the slope in the floor. The truncated section of the cellar's western wall contained pairs of cut spikes at 2-foot intervals, nailed across each other and into the mortar joints. With tiny bits of wood still attached, they apparently held vertical scantling which would have served as furring strips for horizontal wood siding or paneling along that section of wall.

The most remarkable aspect of the cellar was the marks left in the floor. Apparently, substantial weights on the not entirely cured concrete surface left a permanent series of shallow, rectangular depressions in regular rows. Each was perhaps 4.5 feet long by 12 inches wide and at 4 to 5-foot intervals from other similar and parallel depressions. Oriented east-west, these depressions appear to have been left by the timber stillions or stands that once supported large aging casks. Given the arrangement of the depressions that were actually exposed, it appears that there were once four parallel rows of casks in the cellar, each row containing 6 or 7 casks, for a total of 24 to 28 casks. Portner's mid-1860s deeds of trust state that he then had 36 large casks in his cellar. Considering the size and spacing of the depressions, each cask must have held at least 20 barrels of beer, but more likely twice that amount. If this estimate is correct, the cellar--ultimately only one section of the cold storage area of the brewery--at one time held as much as 1,200 barrels or 37,200 gallons. This figure is consistent with the level of production of the early-1880s, when use of the cellars would have been at its peak. After that time, above-ground, artificially cooled spaces would have been employed more extensively.

VI. BIBLIOGRAPHY

Alexandria Archaeology
Site Files and Artifact Collections. Office of Historic Alexandria, City of Alexandria, Virginia.

Alexandria Building Permits
1896-1928 Alexandria Public Library Special Collections.

1928-1985 City of Alexandria, Code Enforcement Bureau.

Alexandria Circuit Court
Deed Books.
1831 T-2:56
1856 R-3:414
1865 X-3:430
A-4:215
X-3:513
Y-3:204
Z-3:58
12:583
9:9
11:589
12:57
12:180

Alexandria Corporation Court
Charter Books.
3:27

Alexandria Gazette
January 4, 1790
March 14, 1793
May 26, 1801
November 16, 1802
May 27, 1807
August 2, 1809
May 24, 1814
November 25, 1817
July 14, 1821
September 14, 1822
May 4, 1839
June 14, 1843
November 4, 1854
March 15, 1860
August 25, 1862

July 8, 1868
September 23, 1869
May 5, 1877
September 30, 1886
August 18, 1893
April 18, 1894
April 12 1932
June 30, 1933
April 26, 1935

Alexandria Library Local History Special Collections
Manuscripts and Circular Files.

Barber, James G.
1988 *Alexandria in the Civil War*. H.E. Howard, Lynchburg, Virginia.

Boyd, William H.
1870 *Boyd's Directory of Washington and Georgetown, 1870*. Boyd's Directory Company, Washington, DC.

Brockett, F.L. and George W. Rock
1883 *A Concise History of the City of Alexandria, Virginia, from 1669 to 1883 with a Directory of Reliable Business Houses in the City*. Alexandria. F.L. Brockett and George W. Rock.

Bull, Donald, Manfred Friedrich, and Robert Gottschalk
1984 *American Breweries*. Bullworks, Trumbull, Connecticut.

Chataigne, J.H.
1876 *Chataigne's Alexandria City Directory, 1876-1877*. J. H. Chataigne, Richmond, Virginia.

Clark, Victor S.
1929 *History of Manufactures in the United States.* McGraw-Hill, New York.

Dennée, Timothy J.
2002 *Robert Portner and His Brewery*. Prepared for Parsons Engineering Science, Inc. and Saul Centers, Inc. Manuscript on file at Alexandria Archaeology, Alexandria, Virginia.

Elliott & Nye
1852 *Elliott & Nye's Virginia Directory and Business Register for 1852*. Elliott & Nye, Richmond, Virginia.

Erickson, Philip M.
1988 *Alexandria Water Permits: The First 1000 "Pipers*." Alexandria Archaeology, City of Alexandria, Virginia.

Fairfax County, Virginia

Circuit Court Deed Books.
1775 J:429
1809 X:593
1858 A-4:347
1865 F-4:434
G-4:219

Fairfax County, Virginia
Personal Tax Assessment Books, 1817-1820.

Fairfax Herald
February 17, 1933

Gallagher
1978

Hill Directory Company
1953 *Hill's Alexandria (Virginia) City Directory, 1953-54*. Richmond. Hill Directory Company, Inc.

1968 *Hill's Alexandria (Virginia) City Directory, 1968*. Richmond. Hill Directory Company.

1969 *Hill's Alexandria (Virginia) City Directory, 1969*. Richmond. Hill Directory Company.

1980 *1980 Alexandria (Virginia) City Directory*. Richmond. Hill Directory Company.

H.S. Rich & Co.
1903 *One Hundred Years of Brewing*. A Supplement to *The Western Brewer*. H.S. Rich & Co., Chicago, Illinois.

Hooe, Stone & Company
n.d. Account Ledger, 1770-1773. Hooe, Stone & Company.

Hopkins, Griffith M.
1877 *City Atlas of Alexandria*. Philadelphia. G.M. Hopkins.

Hurst, Harold W.
1991 *Alexandria on the Potomac: The Portrait of an Antebellum Community*. University Press of America, Lanham, Maryland.

Internal Revenue Service
1862-1866 Record Group 58. Assessment Lists, 1862-1866. National Archives and Records Administration. Microfilm Series M793, Roll 3.

1874-1910 Record Group 58. Assessment Lists for Taxpayers, 1874-1910. National Archives and Records Administration.

Miller, T. Michael
1987 *Pen Portraits of Alexandria, Virginia, 1739-1900*. Heritage Books, Bowie, Maryland.

1991 *Artisans and Merchants of Alexandria, Virginia, 1780-1820*. Volume I. Heritage Books, Bowie, Maryland.

1996 Let There Be Light': The Development of Electricity in Alexandria. In *Alexandria Archaeology Volunteer News*. Vol. XIV, No. 12. December.

Moore, Gay Montague, editor
n.d. Proceedings of the Town of Alexandria, Virginia, 1749-1778, 1793-1800. Manuscript on file at the Lloyd House, Alexandria Public Library, Alexandria, Virginia.

Netherton, Nan
1982 *Montebello at Mount Eagle*. International Developers, Inc., Alexandria, Virginia.

Portner, Robert
n.d. Personal memoirs. Manuscript in possession of Timothy Dennée.

Potomac Telephone Company
1919

R.L. Polk & Company
1917 *Boyd's Directory of the District of Columbia.* Washington, D.C. R.L. Polk & Company.

Robert Portner Brewing Company
1897 *Art Treasures and Useful Information, 1897.* Robert Portner Brewing Company, Alexandria, Virginia.

Sanborn Insurance Maps
1885 Alexandria. Sanborn Insurance Maps.

1891 Alexandria. Sanborn Insurance Maps.

1896 Alexandria. Sanborn Insurance Maps.

1907 Alexandria. Sanborn Insurance Maps.

1921 Alexandria. Sanborn Insurance Maps.

Siebel, Dr. John E. and Anton Schwarz

1933 *History of the Brewing Industry and Brewing Science in America*. Chicago, Illinois.

United States Census
1870 Non-Population Schedules, Virginia. National Archives and Records Administration. Microfilm Series T-1132. Census of Manufactures.

United States Senate
1864 *Senate Report No. 54* from *The Reports of Committees of the Senate of the United States for the First Session of the Thirty-Eighth Congress*. U.S. Government Printing Office, Washington, D.C.

Van Wieren, Dale P.
1995 *American Breweries II*. Eastern Coast Breweriana Association, West Point, Pennsylvania.

Virginia Gazette
November 23, 1769
July 16, 1770

Virginia Military Institute Archives
Manuscript collection and Cadet Files. Lexington, Virginia.

Washington, George
n.d. Notebook, 1757-1760. Manuscript in the collection of the New York Public Library.

Wedderburn, Alex J.
1907 *Historic Alexandria Past and Present*. Alexandria, Virginia.

APPENDICES

APPENDIX A

LIST OF PERSONNEL

Principal Investigator (Phase I):	Petar D. Glumac, Ph.D.
Principal Investigator (Phase II):	Elizabeth Crowell, Ph.D.
Field Director (Phase I):	Julie D. Abell, M.A.
Field Director (Phase II):	John Rutherford
Field Personnel:	Colin Bevan Brian Hutchins Justin Patton John Risetto Kirk Sackett
Laboratory Director:	Carter W. Shields
Laboratory Personnel:	Victoria Robertson, M.A. Emily Williamson Brian Hutchins
Conservation:	Lisa Young
Historical Research:	Timothy Dennée, M.A.
Backhoe Operators:	Bob Anderson Ed Lanning
Report Editor:	Cynthia Liccese, B.A.

APPENDIX B

VITAE OF PRINCIPAL INVESTIGATORS

PETAR D. GLUMAC, Ph.D.
Project Manager / Senior Archaeologist

Experience Summary

Twenty years experience as an archaeologist, including the development, administration, and implementation of projects relating to the protection, conservation, and recovery of cultural resources. Directed archaeological projects in the eastern United States in compliance with Section 106 of the National Historic Preservation Act, as amended, and other federal, state and local legislation, as well as work in Europe, Russia, Near East, South America, Japan and southeast Asia. Responsibilities include cultural resources project management, design and implementation, field and laboratory supervision, artifact analysis, archival research and report writing. Technical responsibilities include environmental and site compliance assessments, NEPA documentation of cultural resources as part of environmental assessments (EAs) and environmental impact statements (EISs), cultural resource reviews and plans, baseline surveys, and site characterizations. Areas of expertise include Phase I, II, and III investigations for municipalities, pipelines, private developers, State DOTs, and the DoD.

Years Experience:

20 years

Years with Parsons:

6 years

Education

B.A., Anthropology (cum laude), December 1978, University of Pennsylvania

M.A., Anthropology, December 1981, University of California at Berkeley

Ph.D., Anthropology, June 1991, University of California at Berkeley

Honors

National Science Foundation Grant BNS-8712070 (with Dr. Judith Todd), "Earliest Metals Smelting in Europe," 1989

Fulbright Scholar, 1985-1986

IREX Fellowship, 1985

Fulbright Scholar, 1981-1982

Primary Experience

August 1992 – Date. Parsons Engineering Science. **Project Manager/Senior Archaeologist.** Responsible for project management, research design, archival research, field direction, analysis and report writing in compliance with Section 106 of the National Historic Preservation Act and the National Environmental Protection Act (NEPA).

Dr. Glumac has directed major surveys and mitigations of prehistoric and historical period sites, including the following:

- Archaeological investigations for the U.S. Army and Air Force.
- Phase I, II, and III mitigation and an EIS of a six square city block area for the new D.C. Convention Center.
- Phase I, II, and III mitigation and an EIS of Square 455 for the D.C. Arena (MCI Center).
- Archaeological baseline survey in Argentina.
- Archaeological surveys in Japan.
- Archaeological mitigation along natural gas pipeline in Virginia for CNG Corporation.
- Underwater archaeological survey for Maryland State Highway.
- **Archaeological survey and excavation in New Mexico (Rio Puerco Projects and Salmon Ruins.**
-

Other Experience

Sept. 1991. Conservation Analytical Laboratory of the Smithsonian Institution, Washington, D.C. **Post-Doctoral Fellow**. Application of materials science techniques to the study of archaeological data from Europe and the Near East.

Sept. 1989. University of Southern California, Department of Materials Science, Los Angeles, California. **Staff Scientist.** Conducted research on issues in European archaeometallurgy.

Nov. 1985. **Fulbright Scholar/IREX Fellowship.** Doctoral dissertation research in Romania, Bulgaria, Hungary, and Yugoslavia.

Sept. 1981. **Fulbright Scholar.** Pre-doctoral dissertation research in Yugoslavia.

June 1976 – Date. **U.S. State Department**. Language Services Branch. Escort and simultaneous interpreter**.**

Professional Affiliations

American Anthropology Association

Society for American Archaeology

Society for Historical Archaeology

Society for Virginia Archaeology

Papers and Publications (Selected)

Dr. Glumac has presented numerous papers at national and regional conferences. He is the author of numerous technical reports and articles in peer reviewed journals.

"Woodland Period Occupation in the Virginia Piedmont: Site Formation and Data Analysis at the Broad Run Site," presented at the Society for American Archaeology Conference, 1998 (coauthor Dennis Knepper).

"New Insights into the Prehistory and History of the Nation's Capital Derived from Highway Archaeological Mitigation Projects," presented at the Society for American Archaeology Conference, 1998 (coauthors Elizabeth Crowell and Dennis Knepper).

"Beneath the MCI Center: Insights into Washington's Historic Water Supply" (co-author July Abell), *Washington History*, Vol. 9, No. 1:24-42, 1997.

"After the Digging is Done: Data Analysis from the D.C. Arena site (51NW115)", presented at 27th Annual Middle Atlantic Archaeology Conference, 1997.

"The Early Federal City: Archaeological Data Recovery at Square 455 (51NW115) in Washington, D.C.", presented at the 26th Annual Middle Atlantic Archaeology Conference, 1996, (coauthor Carter Shields).

"Prehistory in the Nation's Capital: Recent Excavations along the Potomac and Anacostia Rivers," presented at the 25th annual Middle Atlantic Archaeology Conference, Ocean City, Maryland, 1995.

"Investigating Woodland Occupations in the Virginia Piedmont: Intrasite Spatial Distributions, Activity, and Site Formation," (coauthors M. Petraglia and Dennis Knepper), presented at the 24th annual Mid-Atlantic Archaeology Conference, Ocean City, Maryland, 1994.

Chapter 12: "Culture and Environment in the Prehistoric Caucasus: Neolithic through Early Bronze Age," (coauthor D. Anthony). In: Ehrich, R. (ed.), *Chronologies in Old World Archaeology*. Aldine, Chicago, 1992.

"Modes of Production and Patterns of Consumption in Pre-Bronze Age Southeast Europe," presented at the 57th annual conference of the Society for American Archaeology, 1992.

Metals in Society: Recent Trends in Research, MASCA Research Papers in Science and Archaeology, Editor, 1991.

Introduction. In: Glumac, P. (ed.), *Metals in Society: Recent Trends in Research*, MASCA Research Papers in Science and Archaeology, 1991.

"Early Metallurgy in Southeast Europe: the Evidence for Production" In: Glumac, P. (ed.), *Metals in Society: Recent Trends in Research*, MASCA Research Papers in Science and Archaeology, 1991 (coauthor J. Todd).

"Fifth Millennium BC Evidence for Metallurgical Processing of Copper and Copper Alloys in South-East Europe," In: Vandiver, P. et al. (eds.), *Materials Issues in Art and Archaeology II*, Materials Research Society Symposium Proceedings, Vol. 185, 1991 (coauthor J. Todd).

"Early Metallurgy in Southeast Europe: The Evidence for Production," presented at the Society for American Archaeology 55th annual meeting, 1990 (coauthor J. Todd).

"Eneolithic Copper Smelting Slags from the Middle Danube Basin" In: Pernicka, E. and G. Wagner (eds.), *Archaeometry '90*, Birkhauser Verlag, Basel, 1990 (coauthor J. Todd).

"Eneolithic Copper Smelting Slags from the Middle Danube Basin," presented at Archaeometry 1990, Heidelberg, (coauthor J. Todd).

Selected Recent CRM Experience

Phase I Archaeological Survey at Misawa AB, Japan. Project Manager, 1997.

Phase I Archaeological Survey and Architectural Photo Documentation at Yokota AB and Tama Recreation Area, Japan. Project Manager, 1997.

Phase I Archaeological Survey, Hanscom AFB, Bedford, MA. Project Manager, 1997.

Environmental Impacts Statement (EIS) and Section 106 for the GSA Patent and Trademark Office; Cultural Resources. Project Manager, 1997.

Environmental Impact Statement for the Washington Convention Center: Cultural Resources, Hazardous Waste, Groundwater, and Air Quality, Project Manager, 1996-97.

Section 106 Historic Resources Report for the Mt. Vernon Square Site, Project Manager, 1996.

Phase I, II, and III Archaeological Investigations at Mt. Vernon Square (51NW121) for the Washington Convention Center, Project Manager and Principal Investigator, 1996-1997.

Phase I, II, III Archaeological Mitigation, D.C. Arena/Square 455, Washington, D.C., Project Manager and Principal Investigator, 1995.

Environmental Impact Statement (EIS), D.C. Arena/Square 455, Washington, D.C., Project Manager and Principal Investigator, 1995.

Environmental Assessment (EA) for the Barney Circle Freeway, Washington, D.C. 1995.

Phase I Archaeological Investigations at Weedon Island County Preserve, Pinellas County, Florida, Project Manager and Principal Investigator.

Phase III Archaeological Testing at Barney Circle Freeway, Washington, D.C., Co-Principal Investigator, 1994.

Phase II Archaeological Testing at Barney Circle Freeway, Washington D.C., Co-Principal Investigator, 1994.

Phase Ib Archaeological Survey of the Proposed Stafford County Regional Airport, Stafford County, Virginia, Project Manager and Principal Investigator, 1994.

Archaeological Baseline Survey of Salar de Hombre Muerte, Argentina, Co-Principal Investigator, 1994.

Phase III Archaeological Testing at Square 457-C, Washington, D.C., Co-Principal Investigator, 1993.

Phase II Archaeological Testing at Square 457-C, Washington, D.C., Co-Principal Investigator, 1993.

Phase II Archaeological Testing at Whitehurst Freeway, Washington, D.C., Co-Director, 1993.

Elizabeth A. Crowell, Ph.D.
Senior Archaeologist / Project Manager

Experience Summary

Extensive experience in all phases of prehistoric and historical archaeological projects in the United States, in compliance with Sections 106 and 110 of the National Historic Preservation Act of 1966; the National Environmental Policy Act (NEPA); Section 4(f) of the US DOT Act of 1966; and Section 404 of the US Army Corps of Engineers permitting process and other federal, state and local legislation. Responsibilities have included project management; the design, direction, organization, and implementation of large scale archaeological and archival projects; design and direction of programs for the documentation of standing structures, archaeological features, gravestones, and artifacts; field and laboratory supervision, artifact analysis, site interpretation and report writing. Dr. Crowell qualifies as an archaeologist, historian and architectural historian under the Secretary of the Interior's Standards.

Years Experience:

23 Years

Years with Parsons:

18 years

Education

B.A., Anthropology (Magna cum laude), May 1977, Rhode Island College, Providence, Rhode Island

M.A., American Civilization, January 1980, University of Pennsylvania, Philadelphia, Pennsylvania

M.A., Historical Archaeology, May 1980, College of William and Mary, Williamsburg, Virginia

Ph.D., Historical Archaeology, May 1983, University of Pennsylvania, Philadelphia, Pennsylvania

Primary Experience

Nov. 1981 – Date. Parsons Engineering Science, Inc. **Senior Archaeologist/Project Manager**.

Responsible for the project management and technical direction of large and small scale cultural resource projects, including Phase I, II, and III archaeological projects; and architectural survey, National Register evaluation, and HABS/HAER recording; preparation of environmental assessments (EAs), environmental impact statements (EISs), Cultural Resource Management Plans (CRMPs) and agreement documents [programmatic agreements (PAs) and memoranda of agreement (MOAs)]. Responsible for performing senior project management and senior technical review of projects. Projects have been conducted for and in cooperation with Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), Department of Defense (DoD) agencies, the National Park Service (NPS), the General Services Administration (GSA), State departments of transportation (DOTs) and other agencies. Selected experience includes:

- Directed Phase I, II and III archaeological investigation of the Whitehurst Freeway corridor for DC Department of Public Works (DCDPW) which included a multicomponent prehistoric site and eighteenth and nineteenth century domestic and industrial sites.
- Directed Phase I, II and III archaeological investigations of the Barney Circle Roadway for DCDPW included 4 multicomponent prehistoric sites.

- Directed cultural resource studies of Key Bridge, Q Street Bridge, Taft Bridge, Military Road Bridge, Connecticut Avenue Bridge and 16th Street Bridge for DCDPW.
- Directed architectural and archaeological survey, National Register evaluation and mitigation contracts as part of 2 indefinite quantities for Maryland SHA. Served as program manager for one of these contracts.
- Directed archaeological and architectural surveys for VDOT.
- Directed archaeological surveys for several highway corridors for New Jersey DOT.
- Directed archaeological and architectural assessment of Gowanus Expressway for NYDOT.
- Directed an archaeological and archival study of the New Haven Harbor Crossing for CONNDOT.
- Directed architectural survey, National Register evaluation and preparation of a Maintenance Plan for F.E. Warren Air Force Base.
- Directed survey, National Register re-evaluation and mitigation of Lexington Army Depot for the Louisville COE.
- Prepared CRMP for McGuire AFB in New Jersey for the Air Force.
- Prepared EAs and EISs for Forts Chaffee, McClellan, and Riley for the Army; Cape Canaveral AFB, Myrtle Beach AFB and MacDill AFB for the Air Force.
- Served as Technical Director for archaeological testing at Myrtle Beach AFB.
- Directed archaeological excavation of the Marshall Jones family cemetery in South Hill, Virginia in compliance with Section 106 of the National historic Preservation Act, the Virginia Emergency Burial Legislation and Federal Energy Regulatory Commission (FERC) regulations.
- Directed Phase II and III archaeological investigations of the Old Fort Plant in Alexandria, VA. Archaeological Resources included eighteenth and nineteenth century wharves, a shipway, a marine railway, and seven eighteenth and nineteenth century derelict vessels along the Alexandria Waterfront and in an infilled cover.
- Directed archaeological excavation and analysis of the Providence Covelands Site for Federal Railroad Administration. This deeply buried urban site contained Archaic and Woodland period prehistoric and eighteenth and nineteenth century historical archaeological remains.
- Participated in a working group with representatives of the DC Historic Preservation Division, the DC Historic Preservation Review Board and two other groups working in the District of Columbia to develop archaeology guidelines for the District.
- Other Experience

Sept. 1978 - Sept. 1981. University of Pennsylvania. **Teaching Fellow/Archaeologist**. Served as teaching fellow for eleven courses in archaeology, material culture, and American civilization. Responsibilities included course instruction and academic advising. Supervised archaeological excavations in Pennsylvania (at Bartram's Garden and various locations in Philadelphia, and at the Swedish Cabin in Upper Darby); New Jersey (in the Pine Barrens and Cape May) and Utah. Conducted graduate research in Virginia, South Carolina, Pennsylvania, New England, and New Jersey.

June 1977 - Sept. 1978. College of William and Mary. **Historical Archaeology Graduate Fellow**. Participated in the archaeological investigation of several colonial period archaeological sites in Virginia, including Flowerdew Hundred Plantation, Governor's Land, the kiln of the "Poor Potter" in Yorktown, the Yorktown Battlefield, Yorktown Coastguard Station, Bacon's Castle, and other sites. Conserved and catalogued artifacts from prehistoric and historic contexts, conducted site and artifact photography, and prepared exhibits.

May 1976 - May 1977. Brown University. **Historical Archaeologist**. Supervised the excavation of several seventeenth and eighteenth century properties in Rehoboth, Massachusetts.

Sept. 1975 - May 1976. Rhode Island College. **Archaeologist**. Participated in the excavation of Archaic and Woodland period prehistoric sites in Massachusetts and Rhode Island. Conducted laboratory analysis.

Professional Affiliations

Register of Professional Archaeologists

Society for American Archaeology

Society for Historical Archaeology

Middle Atlantic Archaeological Conference

Council on Northeast Historical Archaeology

Eastern States Archaeological Federal

Honorary Affiliations and Professional Awards

Who's Who in American Business, 1992

University of Pennsylvania Graduate Research Fellow, 1981

University of Pennsylvania Teaching Fellow, 1978-1981

College of William and Mary Archaeology Apprentice Fellowship, 1977-1978

College of William and Mary Grant, 1978

Rhode Island College Phi Alpha Theta - History Honor Society, 1977

Rhode Island College Pell Medal in American History, 1977

Publications (Selected)

Dr. Crowell is author of numerous technical reports and articles in peer reviewed journals.

Reviews of "Phase I Archaeological Survey of the Chesapeake and Delaware Canal Section, Odessa Segment of the U.S. Route 13 Corridor, New Castle County, Delaware" by Jay Hodny, David C. Bachman and Jay F. Custer, and "Phase I and II Archaeological Investigations of Old Baltimore Pike from Four Seasons Parkway to the Christiana Bypass, New Castle County, Delaware" by Wade P. Catts, Jay Hodny and Jay F. Custer. *American Antiquity*. Volume 59, Number 1, January 1994; pp. 179-181.

Contributed to *National Register Bulletin* 41: *Guidelines for Evaluating and Registering Cemeteries and Burial Places.* U.S. Department of the Interior, National Park Service, Cultural Resources, Interagency Resources Division, 1992.

"The Gravestones of Colonial Tidewater Virginia: An Introduction to the Funerary Monuments of a Class Oriented Society," *Markers*, 1990 (coauthor Norman V. Mackie III).

"Public Interaction in Urban Archaeology," *American Society for Conservation Archaeology Proceedings*, 1990.

"Depart from Hence and Keep This Thought in Mind: The Importance of Comparative Analysis in Gravestone Research," In *Northeast Historical Archaeology*, Volume 14, 1985 (coauthor Norman V. Mackie III).

"Migratory Monuments and Missing Motifs: Archaeological Analysis of Mortuary Art in Cape May County, New Jersey 1740-1810," Ph.D. Dissertation, University of Pennsylvania, 1983.

"Gravestones in Philadelphia, 1760-1820," *Northeast Historical Archaeology*, Volume 10, 1981.

Review of "Doorway to the Past," "Digging for Black Pride" and "Williamsburg File," *Archaeology Magazine* Volume 34, #2, March/April 1981.

Review of "Archaeological Bibliography of Eastern North America" in *Maryland Historical Magazine* Volume 75, #1, Spring 1980.

Papers Presented (selected)

Dr. Crowell has presented numerous papers and chaired symposia at local, regional and national conferences and is active in archaeological associations.

“Revisiting Holmes’ Quarries: A New Look at the Quartzites from Piney Branch” presented at the Society for American Archaeology Meetings, Philadelphia, PA (co-authored with Philip LaPorta), 2000.
“Prehistoric Landscapes of the Nation's Capital” a poster session presented at the Society for American Archaeology Meetings, Philadelphia, PA (co-authored with Stephen R. Potter), 2000.
“Whitehurst Freeway, Washington, DC: Integrating Archaeology into a Major Urban Road Project” presented at the TRB, Washington, DC, 2000.
“Prehistoric Landscapes of the Nation’s Capital”. Symposium organized and chaired for the Society for American Archaeology Meetings, Chicago, IL, 1999.
“Late Middle Woodland Ceremonialism in the Nation’s Capital” paper presented at the Society for American Archaeology Meetings, Chicago, IL, 1999.
“Late Nineteenth and Early Twentieth Century Prehistoric Archaeological Inquiry in the Washington, DC Metropolitan Area” (co-authored with Julie Abell), ” presented at the Society for American Archaeology Meetings, Chicago, Il, 1999.
“Walking In the Shadows of Archaeologists Past: Researching Museum Collections and Associated Records to Elucidate Past Lifeways”, presented at the Middle Atlantic Archaeological Conference, 1999.
“New Insights into the Prehistory and History of the Nation’s Capital Derived from Highway Archaeological Mitigation Projects” presented at the Society for American Archaeology Meetings, Seattle, Washington, 1998 (coauthors Dennis Knepper and Petar Glumac).
“Prehistoric Potomac Landscapes Along Rock Creek” symposium organized and chaired at Middle Atlantic Archaeological Conference, 1998.
“A Most Spectacular Middle Woodland Feature” presented at Middle Atlantic Archaeological Conference, 1998.
“The History of Prehistoric Archaeological Inquiry in the Washington, DC, Metropolitan Area” presented at Middle Atlantic Archaeological Conference, (coauthor Julie Abell), 1998.
“Comparative Studies of Cultural Patterns in An Urban Area” presented at the Eastern States Archaeological Federation Conference, 1997 (coauthor Julie Abell).

“One Thousand Years of Change: A Look at the Cultural Landscape at the Confluence of the Potomac River and Rock Creek” presented at the Middle Atlantic Archaeological Conference, 1997.

"'Ashes to Ashes, Dust to Dust': Archaeological Analysis of Excavated Materials from a Nineteenth Century Cemetery in South Hill, Virginia," presented at the Society For Historical Archaeology Conference, January 1992.

"Stoneware from the Butt/Burnett Pottery in Washington, D.C," presented at the Society for Historical Archaeology Annual Conference, January 1991 (coauthor Mark Walker).

"The Alexandria Slave Pen: Archaeology of Urban Captivity," presented at the Middle Atlantic Archaeological Conference, 1987 (coauthor Janice G. Artemel).

"Putting It All in Context: Implementing a Comprehensive Plan for the District of Columbia," presented at the Society for Historical Archaeology Conference, January 1987 (coauthors Catherine Slusser, Nancy Kassner).

"In Pursuit of Ancient Cultures: Early Archaeologists and Collectors in the District of Columbia," presented at the American Anthropological Association Conference, 1986.

"A Reassessment of Gravestone Studies in Cape May County, New Jersey," keynote presentation to the New Jersey Historical Society, Atlantic County, New Jersey, 1986.

"Chandeliers In Shanties: Who Were the North Shore Residents," presented at the Society for Historical Archaeology Conference, January 1984.

"Early Investigations Along the Anacostia River, Washington, D.C," presented at the Eastern States Archaeological Federation Conference, November 1984.

"The Outscourings of Creation: Snowtown in the Early Nineteenth Century," presented at The Council on Northeast Historical Archaeology Conference, January 1983.

"Cape May: Uncarved Images and Migratory Gravestones; Problems in Cemetery Studies," presented at the Society for Historical Archaeology Conference, 1982.

"Gravestones in Philadelphia," presented at the Council on Northeast Historical Archaeology Conference, Albany, 1980.

APPENDIX C

ARTIFACT INVENTORY

Phase II Artifacts

Feature 5, Brick and Mortar Well

0-4 feet

1 possible wooden pipe bowl/tool handle
1 oyster shell
1 metal lid with attached brush
1 bone fragment
6 nails

4-20 feet

1 worked stone with metal mount

Feature 15

1 wooden conduit

Feature 46, Brick Cistern

1 brick sample

Beer Vault

2 crossed nail pairs from brick wall
1 large hinge
1 curved metal bracket
1 decorative star shape
1 spike
1 nail
1 metal pipe/bracket
1 copper pipe section with smaller pipe branching off

APPENDIX D

SITE FORM

ARCHAEOLOGICAL REPORT **Report Generated on:** 9/13/05

DHR ID#: 44AX0196

City/County: Alexandria
VDHR Site Number: 44AX0196 **Other VDHR Number:**
Site Name: Robert Portner Brewery
Temporary Designation: 44AXPORT

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Euro-American	19th Century: 4th quarter

Site Class: Terrestrial, open air

THEMATIC CONTEXTS/SITE FUNCTIONS

Sequence Number: 1

Category for thematic context:
Industry/Processing/Extraction

Example: Distillery
Comments/Remarks:

Robert Portner Brewing Company
Specialized Contexts:

USGS Quadrangle(s): ALEXANDRIA

Loran: **Restrict UTM Data?**

Center UTM (for less than 10 acres): 18/4297600/322420

Boundary UTMs (for 10 acres or more): 18/4297520/322460
18/4297540/322380
18/4297660/322400
18/4297640/322480

Physiographic Province: Piedmont
Drainage: Potomac/Shenandoah River
Landform: floodplain
Aspect:
Elevation: 40.00 **Slope:** 2-6%
Site Soils:
Adjacent Soils:
Nearest Water Source: Potomac River
Distance: 2,000

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

Individual Category Codes:

Honorif:
First:
Last:
Suffix:
Title:
Company/Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership type: Private

Gov't Agency:

SITE CHARACTERISTICS

Site Dimensions: 250 feet by 400 feet **Acreage:** 2.30

Survey Strategy: Observation
Subsurface Testing

Site Condition: Unknown Portion of Site Destroyed

Survey Description:
Subsurface testing using backhoe trenches.

CURRENT LAND USE

CURRENT LAND USE # 1

Land Use: Commerce/Trade **Dates of Use:** 2005/99/99
Example: Store

Comments/Remarks:
Large multi-story office and retail building encompassing the entire block

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? Yes **Specimens Depository:** Alexandria Archaeology Museum

Assemblage Description:

Feature 5, Brick and Mortar Well

0-4 feet

1 possible wooden pipe bowl/tool handle
1 oyster shell
1 metal lid with attached brush
1 bone fragment
6 nails

4-20 feet

1 worked stone with metal mount

Feature 15

1 wooden conduit

Feature 46, Brick Cistern

1 brick sample

Beer Vault

2 crossed nail pairs from brick wall
1 large hinge
1 curved metal bracket
1 decorative star shape
1 spike
1 nail
1 metal pipe/bracket
1 copper pipe section with smaller pipe branching off

Specimens Reported? Yes

Assemblage description--reported:

Field Notes Reported? Yes **Depository:** Alexandria Archaeology

CULTURAL RESOURCE MANAGEMENT EVENTS

Date: 1998/99/99
Cultural Resource Management Event: Phase I Survey

Organization or Person

First	Last
	Parsons Engineering Servce

Id # Associated with Event:
CRM Event Notes or Comments:
Fairfax, Virginia

Date: 2000/99/99
Cultural Resource Management Event: Phase II Survey

Organization or Person

First	Last
	Parsons Engineering Service

Id # Associated with Event:
CRM Event Notes or Comments:
1999-2000
Fairfax, Virginia

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Sequence Number: 1
Photographic Documentation?
Depository: Alexandria Archaeology
Type of Photos: Color slides
Sequence Number: 2
Photographic Documentation?
Depository: Alexandria Archaeology
Type of Photos: B&W prints & negatives

REPORTS, DEPOSITORY AND REFERENCES

Sequence #: 1

Report (s) ? Yes
Depository: Alexandria Archaeology
Reference for reports and publications:
Parsons Engineering Science
2002 Archaeological Investigations at the Robert Portner Brewing Company Site (44AX0196), Alexandria, Virginia. December 2002.
Sequence #: 2

Report (s) ? Yes
Depository: Alexandria Archaeology
Reference for reports and publications:
Dennee,Timothy
2002 Robert Portner and His Brewery. February 2002.
VDHR Library Reference Number:

1 RECORD(S) IN THIS REPORT