of recent fill resting on sterile subsoil. A representative soil profile is shown on Figure 6. There were no indications of structural remains or features that could be associated with the schoolhouse. It was apparently obliterated by a combination of factors including the expansion of the Route 141 intersection to the north and south and the construction of the cinder block garage on the site. No Phase II testing is recommended for this site.

Artifacts recovered from the site consisted primarily of ceramics and glass. Coarse red earthenware comprised the largest ware type at the site with 57 sherds (35%), followed by whiteware with 43 sherds (27%), pearlware with 28 (17%) and ironstone with 21 sherds (13%). Lesser amounts of stoneware (2), yellowware (3) and porcelain (8) were also recovered. Both bottle and window glass were recovered from the site. All of the diagnostic glass was machine made and dates from 1903 to the present. Metal artifacts recovered primarily include cut (65) and wire (110) nails, nail fragments (138), can fragments (44) and unidentified metal fragments (52). Other artifacts recovered include 5 buttons, a marble, 5 kaolin tobacco pipe fragments and 126 brick fragments. A Mean Ceramic Date of 1839.57 was obtained for the site.

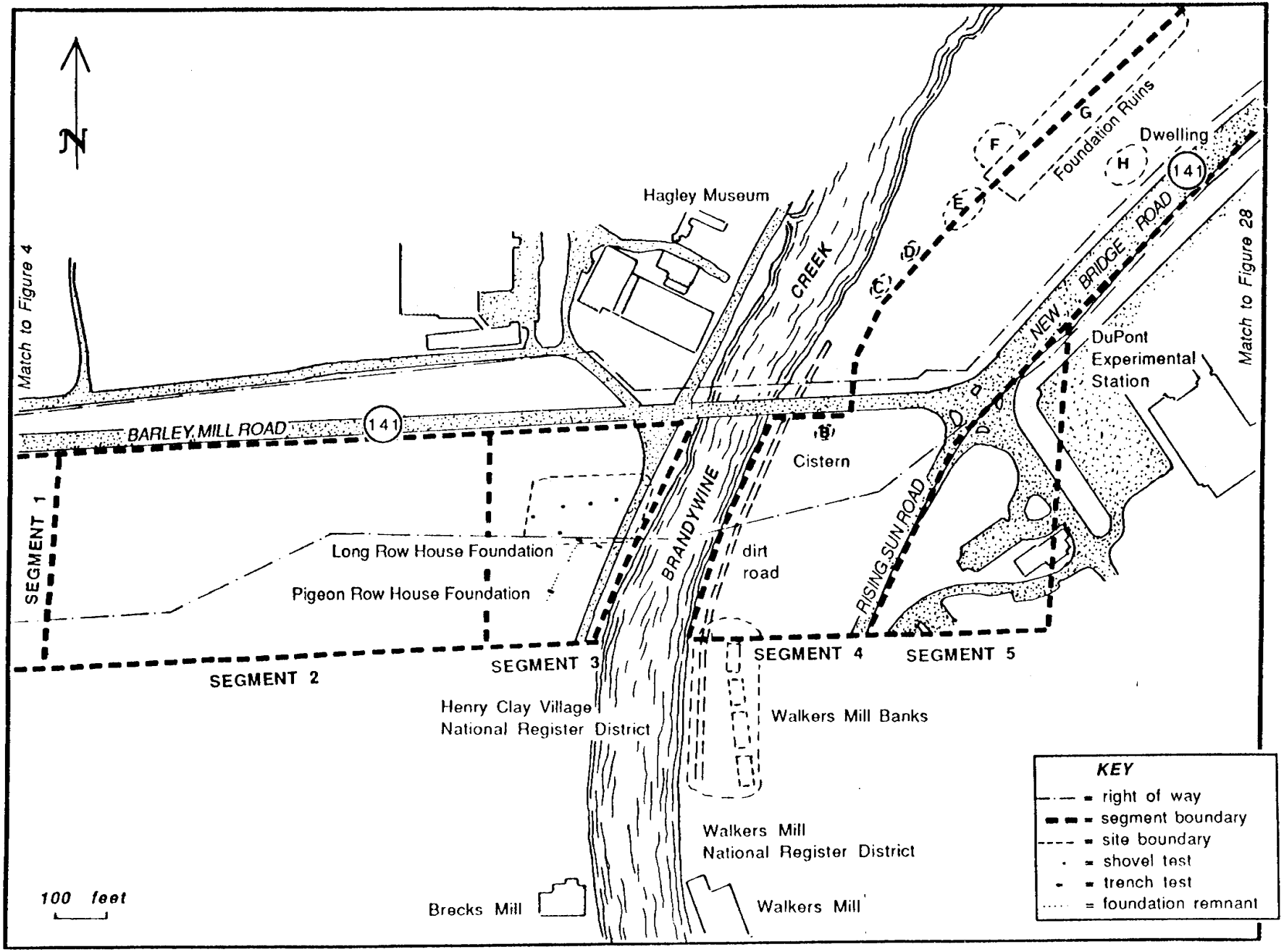
SEGMENT 2

Segment 2 (Figures 2 and 7) is a 1000 foot section of woods immediately to the east of Segment 1. Many of the trees are quite large and appear to be greater than 100 years in age. They are predominantly deciduous types including oak and beech. Ground cover consisted of a heavy leaf mat with some heavy underbrush in a few areas. This segment was generally steeply sloping and a walkover survey of the area failed to reveal any significant archeological remains. Archival investigations failed to uncover evidence for potential historic period sites. Extended Phase I archeological investigations are not recommended for Segment 2.

SEGMENT 3

Segment 3 (Figures 2 and 7) is a small area on the west bank of the Brandywine, extending 450 feet south from the existing Route 141 bridge, almost to the existing C.I.D. Office (C.I.D. apparently is the abbreviation for Charles I. duPont). From east to west, Segment 3 extends from Brandywine Creek up to and including the old Wilmington and Northern Railroad bed. Archival research revealed at least three no longer standing structures in this area. These include a frame house and two multi-family workers' houses. According to architectural drawings obtained from the Hagley Library (E. I. duPont, 1902), the frame house was located underneath the present Route 141 bridge, and the remains of this house are presumed to have been obliterated during the bridge construction. The frame house is referred to in the subsequent discussions as the Miller's house. The other two structures are shown on the architectural drawings between the present bridge and the C.I.D. office, an area which has suffered considerably less disturbance than the area immediately under the bridge. These two

FIGURE 7
SEGMENTS 1, 2, 3, 4 & 5



buildings are shown in early photographs (provided by Richard duPont and the Hagley Museum, date unknown) and are known as the Pigeon Row House and the Long Row House (Plate 1). They served as worker's apartments for the industrial sites along the Brandywine in the 19th century. The Long Row House, the larger of the two, is shown on construction plans for the present bridge which dates to the early 1950's. The structure was apparently occupied up to shortly before it was razed, presumably at the time the bridge was built. It is unclear when the Pigeon Row House was demolished, although it is presumed to have been destroyed much earlier than Long Row House.

Results of Archival Investigations

The property history study did not shed much direct light on the archeological contexts at the Row House site, but did provide information about the development of land use patterns by the DuPont company. The discussion of the property history covers "Gilpin's Mill Land", the earliest documented activity on the property, and the two major subdivisions of that land, Brecks Mill and Squirrel Run. The Breck's Mill property included the Pigeon Row house and the extant C.I.D. building, and the tract called here the "Squirrel Run" property, whose southern boundary lay just below the Long Row house, dividing it from the other buildings. Table 1 presents the ownership history of the row Houses.

Additional research in DuPont company documents did provide some additional information about row houses, which were multi-family apartment houses built for the workers at the various nearby mills. These eventually all came under the direct or indirect control of the DuPont company.

Gilpin's Mill Land

By 1741, Oliver Canby had arrived on the Brandywine to build the first of the famous Brandywine grist mills (Hoffecker 1982:18), and the advantages of that swiftly-falling stream for water powered enterprise were confirmed by a dispute over a property claim involving Daniel Few and Samuel Gregg in 1749. Few had purchased a tract that included the steep-sided banks of the Brandywine, and had begun building a sawmill, but Gregg, claiming that the previous owner had obligated three acres of this land to him, insisted that his parcel be taken at Few's building site, or so Few represented the situation to the Surveyor General (Warrants and Surveys F2 #53). At issue was the fact that Few purchased the land specifically because of its suitability as a mill site, and that it was otherwise worthless if such a use were prevented or usurped.

Few had also purchased tracts to the south of this (Warrants and Surveys F2 #11 and #11A) from Issacher Green and one that had originally been granted by the Proprietor's Warrant to Adam Stidham in 1683. By 1756, he owned a total of 97 acres on the west side of the Brandywine, including the area from Squirrel Run to Pancake Run (Figure 8). In that year he sold the combined tracts to Joseph

PLATE 1
Long Row House and Pigeon Row House

North view

TABLE 1

OWNERSHIP HISTORY OF ROW HOUSE PROPERTY

The Row Houses were built on property owned or controlled by the E. I. DuPont Company during the first half of the nineteenth century, but at one point, two separate tracts were involved, one containing the site of the Pigeon Row House and the other the site of the Long Row House.

Date	Doc	Book	Page	From	To
1752	Survey:	F2	No. 11	Isaacher Green	Dan'l Few

This survey shows the tracts north and south of Pancake Run acquired by Few from Green and indicates his ownership of the tract to the north which he acquired from Adam Stidham.

1756	Deed	U	418	Daniel Few & wife, Esther	Joseph Gilpin
1761	Deed	U	549	Joseph Gilpin & wife, Mary	Vincent Gilpin

This deed transfers 95¼ acres out of 97 to Vincent.

1761	Deed	U	469	Joseph Gilpin & wife, Mary	Vincent Gilpin

Joseph Gilpin's remaining land was laid off for a mill seat, and after improving it, Joseph gave two equal undivided quarter interests in that mill seat to Vincent.

?	Deed	U	657	Joseph Gilpin & wife, Mary	Joseph Shallcross (son-in-law)

One quarter undivided interest in the mill described above.

1760	Deed	A2	529	Joseph Shallcross	Vincent Gilpin

Shallcross sells his quarter interest to Vincent Gilpin.

1771	Deed	?	?	Joseph Gilpin & wife, Mary	Vincent Gilpin

The remaining undivided quarter interest in the mill goes to Vincent.

1786	Deed	F2	421	Vincent Gilpin & wife, Abigail	Joshua Hallowell

Gilpin sells c. 100 acres and a "merchant corn and grist mill" to Hallowell for £750.

TABLE 1 CONTINUED

1788	Deed	L2	93	Thomas Kean, Sheriff	Vincent Gilpin

Hallowell has apparently defaulted; Gilpin recovers the property for £492 - 7-10.

1810	Will	Q	1813	Vincent Gilpin	Edward, son and Hannah, daughter

Three quarter interest in farm, mills, and proceeds from land in Cherry Marsh to Edward, and one quarter interest to Hannah, etc.

1813	Deed	A5	359	Abigail Gilpin, widow & Edward Gilpin & wife Lydia, & Hannah Gilpin	Louis McLane and George B. Milligan

This deed transfers 115 3/4 acres, 32 perches, including "houses, edifices, buildings, mills, mill tackle and furniture" etc. to McLane and Milligan for $13,250.

McLane and Milligan divide the land into the tract described next, and the remainder which contains Gilpin's Mills.

1813	Deed	03	508	Louis McLane & George Milligan	Eleuthere Irenee duPont de Nemours

This transfers 19 acres, 31 perches south of Squirrel Run (Tract "7" on Figure BW-1), plus a small tract on the east side of the Brandywine, to duPont for $2596.59. This tract which contains several mills that are leased (Barley Mill, Henry Clay Mill, Sharon Mill) remains in the hands of the DuPont company.

1819	Mtge	V3	521	Samuel Love	McLane & Milligan

The deed was not located but this secures McLane & Milligan for three payments of $4158.42 for the land containing Gilpin's Mill and the larger mill built by them, which would later be called "Breck's Mill".

1830	Deed	L4	478	William Herdman, Sheriff	Louis McLane

Love has apparently defaulted and the Sheriff sells the mill land back to McLane for a debt judgment of $14,450. McLane pays $2600.

TABLE 1 CONTINUED

1835	Deed	V4	272	Louis McLane & wife, Catherine, & William Breck of Pennsylvania	Joseph S. Dixon, New Castle County, and George B. Milligan

The "Breck" whose name now identifies the mill acquires it with this transfer, for $16,500.

1839	Deed	C5	245	Joseph S. Dixon & wife, Sarah, & William Breck & wife, Gabriella Josephine	Charles I. DuPont

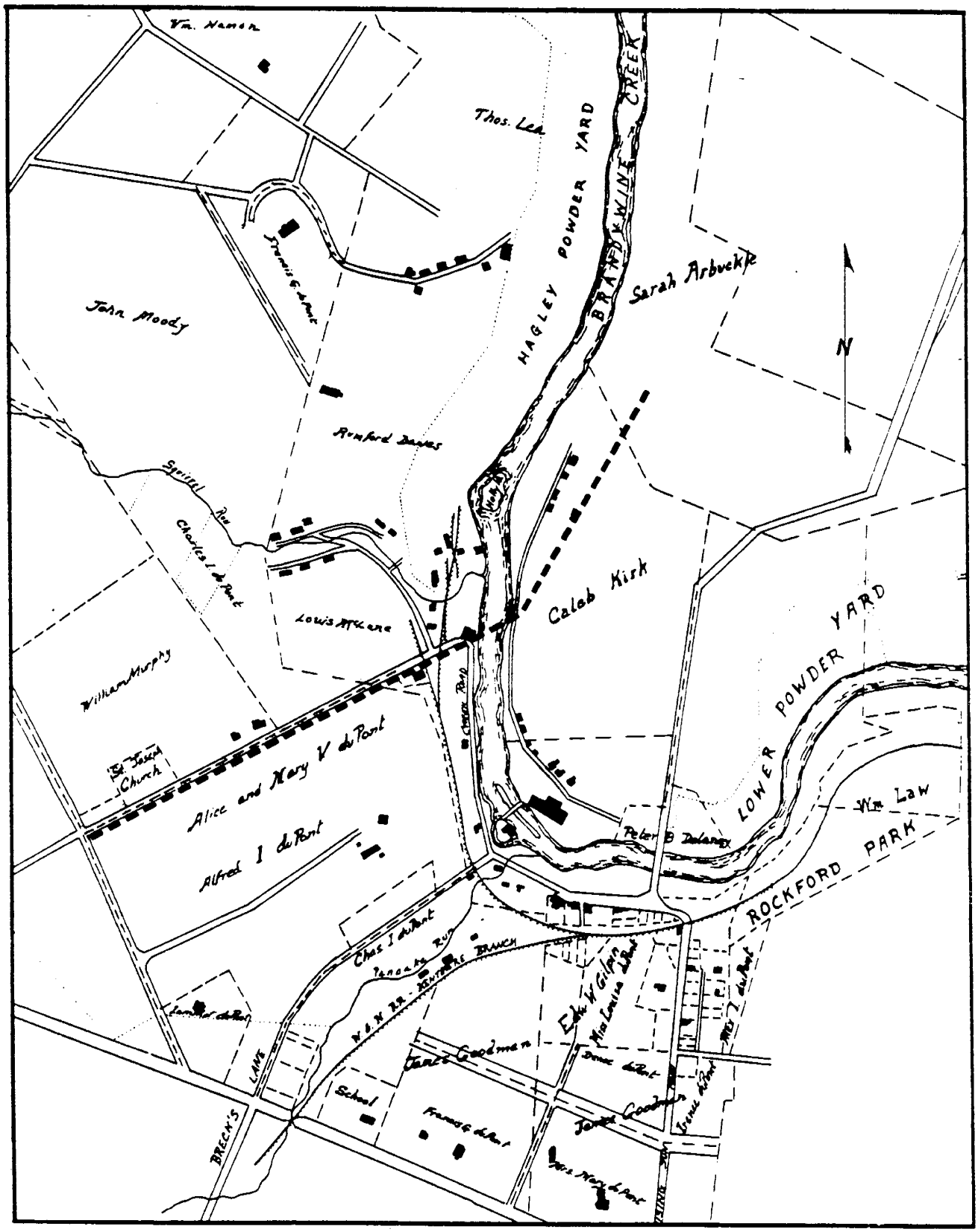
Gabriella Breck is DuPont's niece. The price is $17,000.

1852	Deed	C10	228	Charles I. DuPont & wife, Ann	Henry duPont and Alexis

The price is $30,000 for ten acres containing the mill and land adjoining the Brandywine. Fifty-eight acres of land to the west, containing Rokeby Mansion was sold to Amelia Elizabeth duPont in 1847 (X5:168).

FIGURE 8
FRAZIER MAP - 1889

▬ ▬ ▬ ▬ = Rt 141 location 1987



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Gilpin (U:418). Gilpin transferred the majority of this land to his son Vincent in 1761 (U:549), but kept land laid off for a mill seat, and "improved" it. Of that, he gave to equal undivided one quarter shares to Vincent (U:469) and a third quarter share to their son-in-law Joseph Shallcross (U:657). In 1769, Vincent obtained Shallcross' quarter share (A2:529), and his parents deeded him the remaining quarter in 1771 (F2:421).

In March of 1786, Vincent Gilpin sells "all that merchant corn and grist mill situate on or near Brandywine Creek" to Joshua Hallowell for £750, and this is the first precise indication of improvements on the property. No residences are mentioned, but the location of the mill is presumed to be adjacent to the present location of Breck's Mill, north of the mouth of Pancake Run (Webster 1970). It appears that Hallowell failed to make good on the mortgage, since Vincent acquires the property again at a Sheriff's sale in 1788, this time for £492-7S-10D (£2:93). The tax assessment list of 1804 shows that Vincent Gilpin holds a total of 127 acres of land, with a stone house, frame barn, and stone mill with 2 pairs of stones. It also indicates that he has a house and lot on rent. The mill is no doubt the previously described mill on the Brandywine, but the location of the other buildings is not clear.

Vincent Gilpin's will was filed in 1810, and it gives his wife a life estate and half the proceeds from the mill and other property, the other half going to his son Edward. Edward and his daughter Hannah are to be tenants in common of the property after their mother dies, and Hannah is to get the "China Ware imported from Canton" (Q1:1813). All of Vincent's heirs deed the 115 3/4 acre tract containing the mill to Louis McLane and George B. Milligan in 1813 (A5:359). McLane was married to Milligan's sister and would later have a distinguished career in politics, serving as Secretary of State for Andrew Jackson. He finished his career as president of the Baltimore and Ohio Railroad, and his investments on the Brandywine represent his early interest in the process of industrialization that was transforming the new nation (Hoffecker 1977:177-8).

A month after purchasing the mill property from Gilpin's heirs, McLane and Milligan sold a 19 acre segment of it just south of Squirrel Run to E. I. duPont deNemours (Figure 8) and a small tract on the bank opposite Gilpin's Mill is included (03:508). This latter allows access to the dam pool on that bank for another mill. The 19 acre tract is referred to here as the "Squirrel Run" property and is discussed separately below.

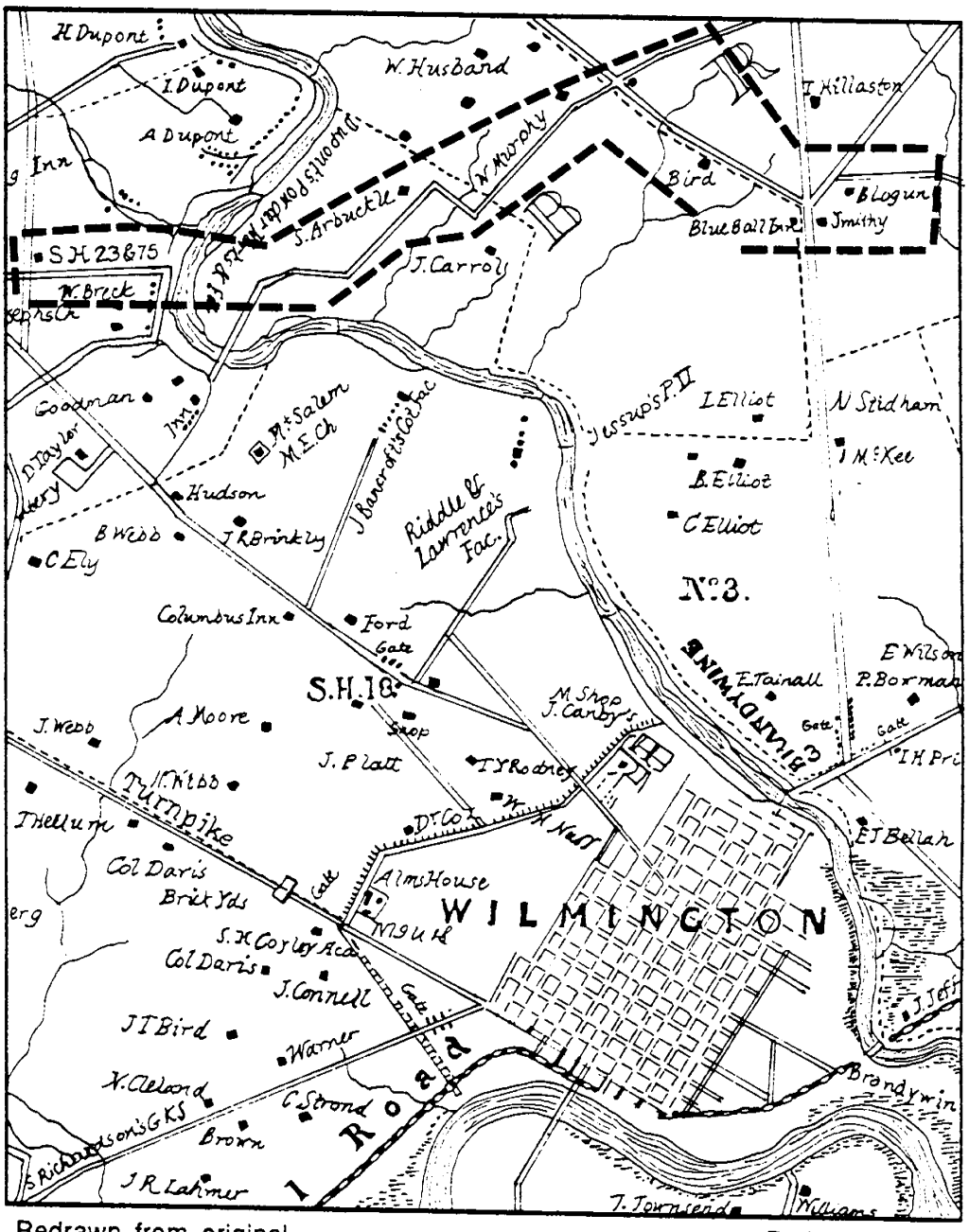
Breck's Mill Property

After converting Gilpin's original grist mill to a cotton mill, McLane and Milligan build a larger textile mill next to it which is later called Breck's Mill, after a subsequent owner (Sisson 1980:9). This complex is leased to several different operators, but the re-entry of European manufacturers into the

American textile market after the War of 1812 created financial difficulties for American manufacturers (Hancock 1956:9). In 1815, the tax records indicate that the property includes five stone tenements and an "Old Merchant Mill" (Boatman 1957:13), but the location of the tenements is not specified. They are likely to be among those single family dwellings situated along Breck's Lane.

Samuel Love takes a mortgage on the property from McLane and Milligan in 1819 (V3:521) but defaults, and in 1830 Louis McLane gets the property back in a sheriff's sale, the result of a judgement against Love in 1827 for nonpayment (f4:478). The 1816 tax assessment list showed that Love owned 59 acres in Brandywine Hundred along with half water rights to the Brandywine, which may be on the opposite bank from this property (the property history for Walker's Mill suggests that Love had owned those rights, but sold them by 1813). When Fairlamb produced his map for the "Brandywine Mill Seats Company" in the 1820's, Love is still indicated as a property owner opposite the Hagley Mills. McLane sells the Breck's Mill property to Joseph Dixon and William Breck for $16,500 in 1835 (V4:272), and in 1839 they sold it to Charles I. DuPont for $17,000 (C5:245, Tract "13", Figure 8). This transfer reserves two acres previously transferred from McLane to Margaret Love. In 1841, the "Rokeby Manufacturing Company" was incorporated and the assets included 25 tenements, stone and frame, and a large stone building used as a dwelling house, etc. The latter building is likely to be the mansion called "Rokeby", built for Charles' niece Gabrielle Josephine duPont when she married William Breck in 1836 (P. Thompson 1986). The Brecks continued to occupy the house until 1859 when they moved to Scranton, Pennsylvania (Henry 1945:16). In 1848, Charles I. DuPont changes the production from cotton to that of woolens, blankets, jerseys, and "satinets", probably drawing on his experience with those products at Upper Louviers (Webster 1970; Sisson 1980:10). The Rea and Price Map of New Castle County, 1849 (Figure 9), shows a house marked "W. Breck" in roughly the position of "Rokeby" mansion as well as four dots below it, along Creek Road, south of its intersection with Barley Mill Road. These would be at least approximately in the position of CID house, Diamond Row and Long Row. By 1854, these mills were closed (Sisson 1980:10) and had been acquired from Charles by Henry and Alexis I. DuPont (C10:228). They passed through several industrial tenants, and, by 1883, the Breck's Mill has become a social club (Sisson 1980:10). From the mid-nineteenth century forward, this property becomes part of the general DuPont Mill Complex. Local legend suggests that the "CID" house, a short distance to the north of Breck's Mill, was built in 1823 by Charles I. DuPont, but there's nothing to suggest that the property was not in the possession of Samuel Love at that time (see above). Indeed, Fairlamb's survey of E. I. duPont's land in 1826 indicates that "Sam'l Love" owns the bounding property on the south, where that building stands. A general discussion of the research into the row houses is given below, but here it must suffice to say that, although the property research revealed a general increase in the number of residential structures for workers on this tract, no evidence specifically referring to them

FIGURE 9
REA & PRICE 1849



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▬▬▬ = Project Area

was produced by the property research.

The Pigeon Row house (sometimes called Diamond Row) was located on the property associated with Breck's Mill, while the line dividing that from the Squirrel Run property ran just to the south of the Long Row house, between it and Pigeon Row (Figure 8). The Rea and Price map (Figure 9) indicates structures in the general vicinity of these structures in 1849, but it cannot be ascertained if these are identical with the structural remains investigated archeologically, though there is certainly occupation near them at that time. The Lake and Beers map (1860, Figure 10) shows a rectangular block, presumably indicating buildings, extending north from the intersection of Breck's Lane with the Creek Road, but this does not clearly indicate the presence of the specific structures in question. The word "store" is appended to this strip. The Beers Atlas map of Brandywine Banks, 1868 (Figure 11), shows five buildings between Breck's Lane and Barley Mill Road which may be at or near the location of the row houses, but they cannot be positively identified with them. Published maps through the Baist Atlas map in 1893 (Figure 12) show a similar configuration of buildings.

Squirrel Run Property

E. I. duPont acquires the 19 acre tract by Squirrel Run in 1813 (03:508, Tract 7, Figure 8) and it contained the "Squirrel Run Mill", which later became the Cooper Shop for the Hagley Powder Mills (Henry 1945:3). According to Alexis duPont, it also contained the Barley Mill, built by Samuel Kirk, but if that building were on the north side of Squirrel Run, as indicated on the E. I. duPont map (1944, Figure 13), it would appear to be on the next tract to the north. Local heresay suggests that the residence of the miller for the gristmill was located directly under the approach for the present bridge that carries Route 141 over the Brandywine, although no documentation for that precise location was recovered from the archival records of the company. The 1860 Lake and Beers map (Figure 10) does show a structure a short distance up Barley Mill Road from its intersection with Creek Road, but the scale of the map is such that its precise position cannot be determined.

This tract contains the site of the "Long Row" house, as described above, but nothing in the property documents provides any specific information about this or adjoining workers' housing. Tax assessments for Charles I. DuPont for 1852 indicate that he owned "sundry houses" in Christiana Hundred, but nothing more specific. Therefore, secondary sources and company documents were consulted to try to identify the construction dates of these buildings, which remain now only as archeological features.

Row Houses

Housing for workers was constructed in order to attract labor, and multi-family dwellings ("banks" or row houses) were being

FIGURE 10
Lake and Beers 1860

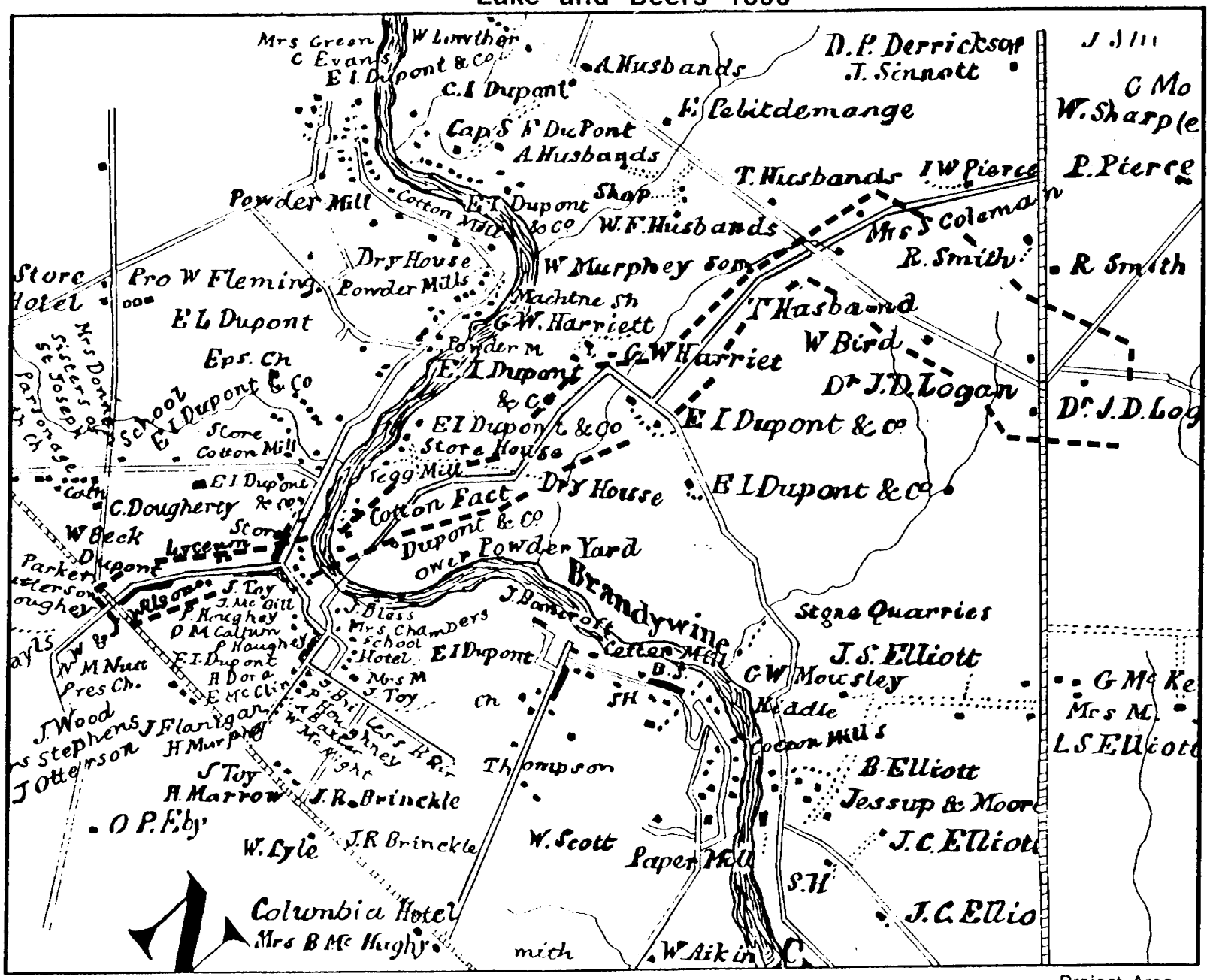

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FIGURE 11
Beers 1868

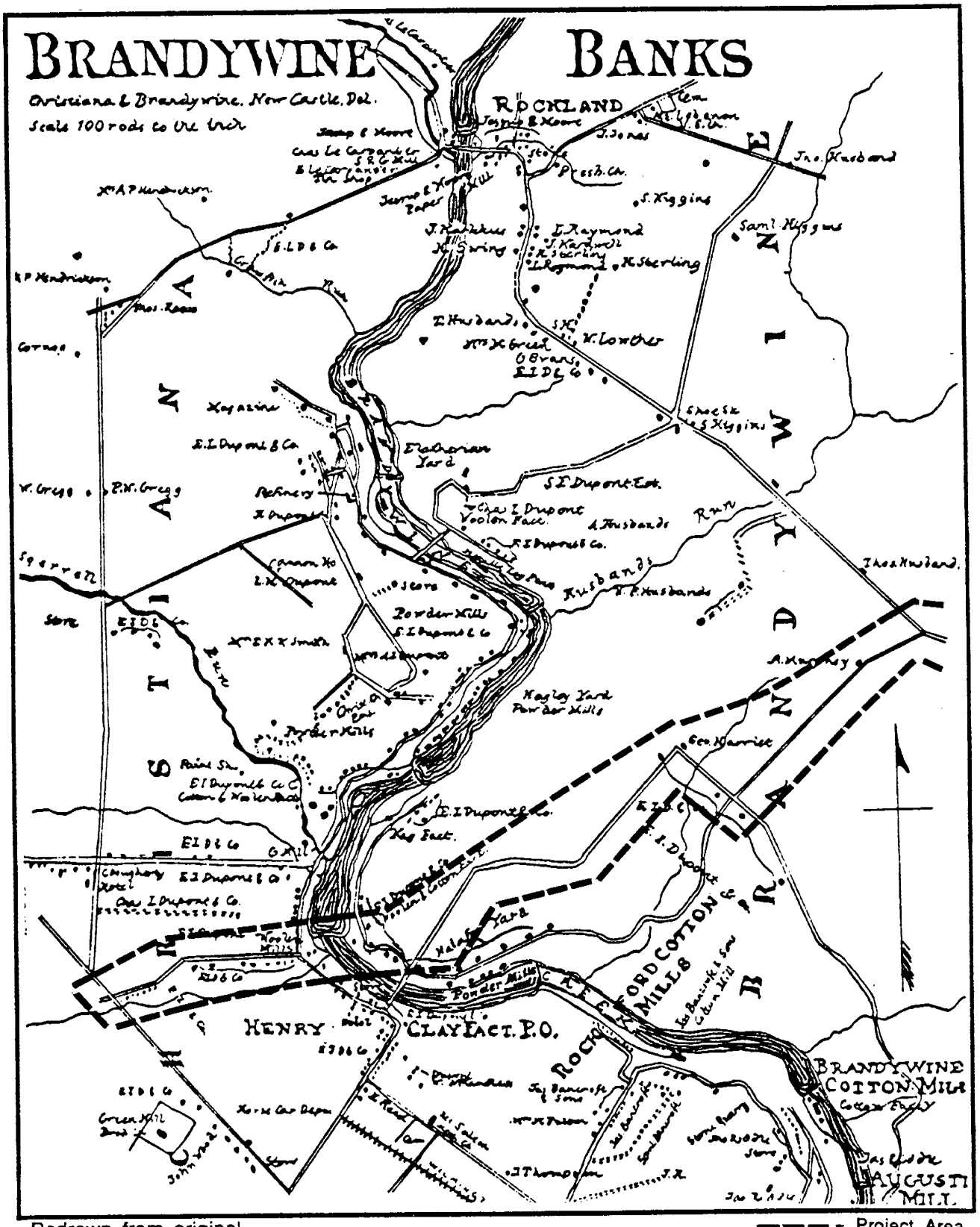

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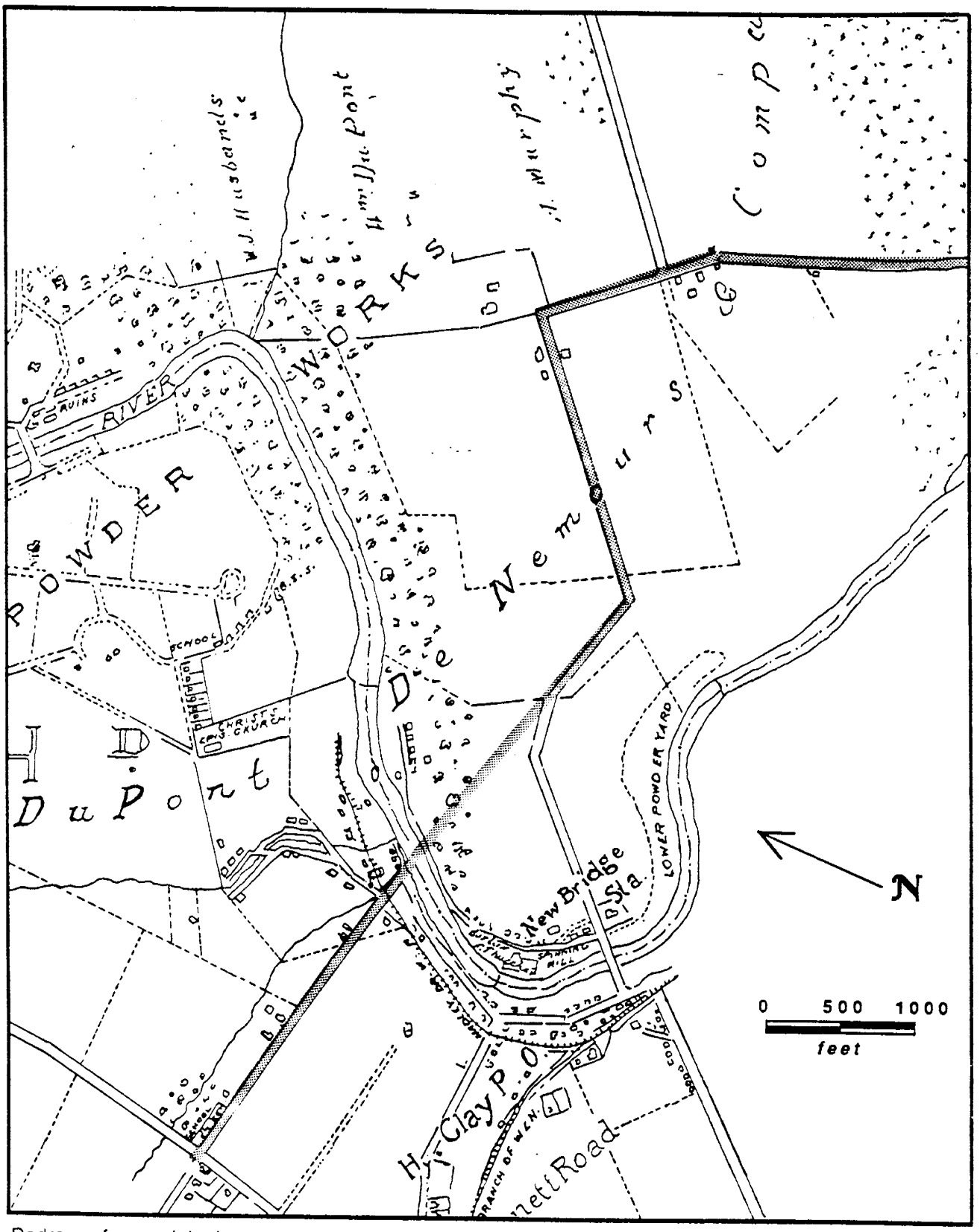
FIGURE 12
BAIST ATLAS 1893



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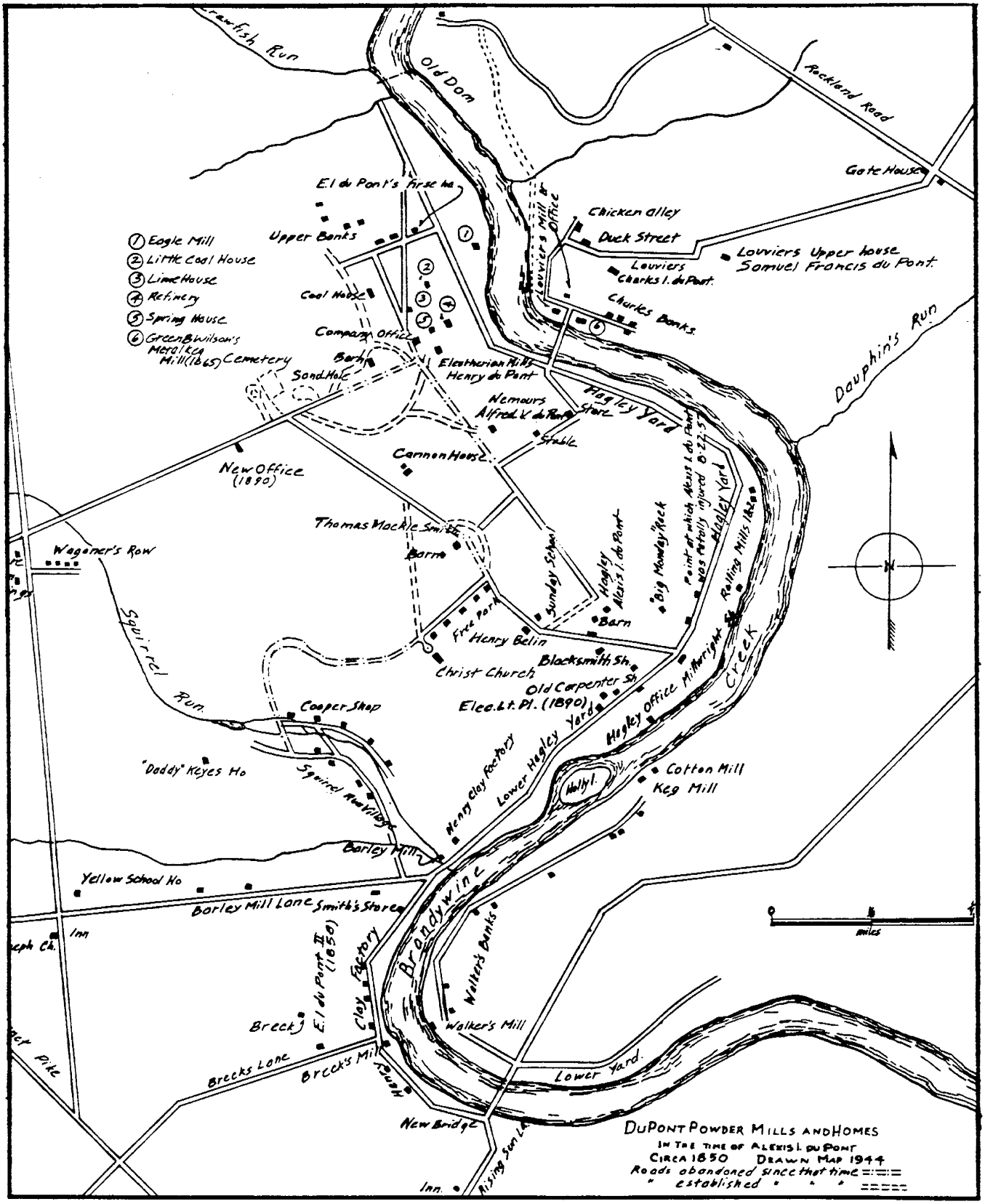
Rt 141 location 1987

FIGURE 13
E. I. DUPONT MAP OF 1944



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constructed before the Civil War as an efficient method of housing workers and their families (Sisson 1980:8). Several different kinds of documents in the company records refer to these dwellings, with greater and smaller degrees of ambiguity, even within the same set of records. Real estate inventories, rent books, and property surveys were reviewed thoroughly to try to discover the earliest mention of the various housing units that were the object of archeological investigation. Secondary sources were examined as well.

The earliest mention of what may be the Long Row House was found in the "Receiving Books" for the Brandywine Manufacturers' Sunday School. This institution was begun in 1817 by E. I. duPont because his daughters were interested in teaching the children of the factory workers (Hoffecker 1977:37). It taught these children the "three R's" as well as to be "disciplined and to defer to their parents and social superiors" (Sisson 1980:28), clearly desirable traits from the mill owner's point of view. The names of the children and the names and residences of their parents are indicated in the school roll books, and an entry for James Benson in May of 1861 states that his father, James, is a Blacksmith, and lives in "Beggars Row" (Brandywine Manufacturers' Sunday School). Frank Zebley asserts that the Long Row and "Pigeon" Row house were built as tenant houses for workers in Breck's Mill, and that Long Row, "still is standing", was formerly known as "Beggars Row" (Zebley 1940:143). On the other hand, a letter from Henry duPont to H. A. duPont in October of 1871 states "We have torn down 'Beggars Row' and have a new block of six good houses up in its place now Ready for roofing which will be finished during the winter" (Henry duPont 1871). Since, by Zebley's account, the Long Row house was still standing in 1940, the construction described by Henry duPont must have constituted a major rebuilding, presumably on the same spot.

An entry in the Sunday School receiving book for March 1865 records the presence of two children named Murray, whose residence is "Long Row"; this is the earliest use of that particular name in those records. A number of other children in this year and the next show residency in that tenement. The DuPont company records include inventories going back to one recorded in French in 1814, and these show buildings as well as raw materials and products. The early inventories give no indication of the location of the buildings listed, but by 1844 there is a notation for dwellings on the "long lot" at New Bridge south of Breck's Mill and various "row houses". There is nothing to specifically identify these as Long Row or Diamond (Pigeon) Row, however. During the 1860's, when Long Row first appears in the Sunday School records, the name does not specifically appear in the property inventory, nor are there any obvious new additions in the property inventory, nor new additions in the record near the listings for Henry Clay Factory and New Bridge.

Workers who lived in company-owned housing could either pay cash or have their rent deducted from their wages, and the payments

were recorded in rent books. One of these books covers the period from 1850 to 1858 and shows some of the dwellings by name. Neither Long Row nor Diamond (Pigeon) Row appear in that list. By the early 1870's, these names do appear regularly in the lists of rent payment and, with various exceptions for missing or ambiguous records, it is possible to identify by name the residents of specific units and to cross reference that information with other sources of information.

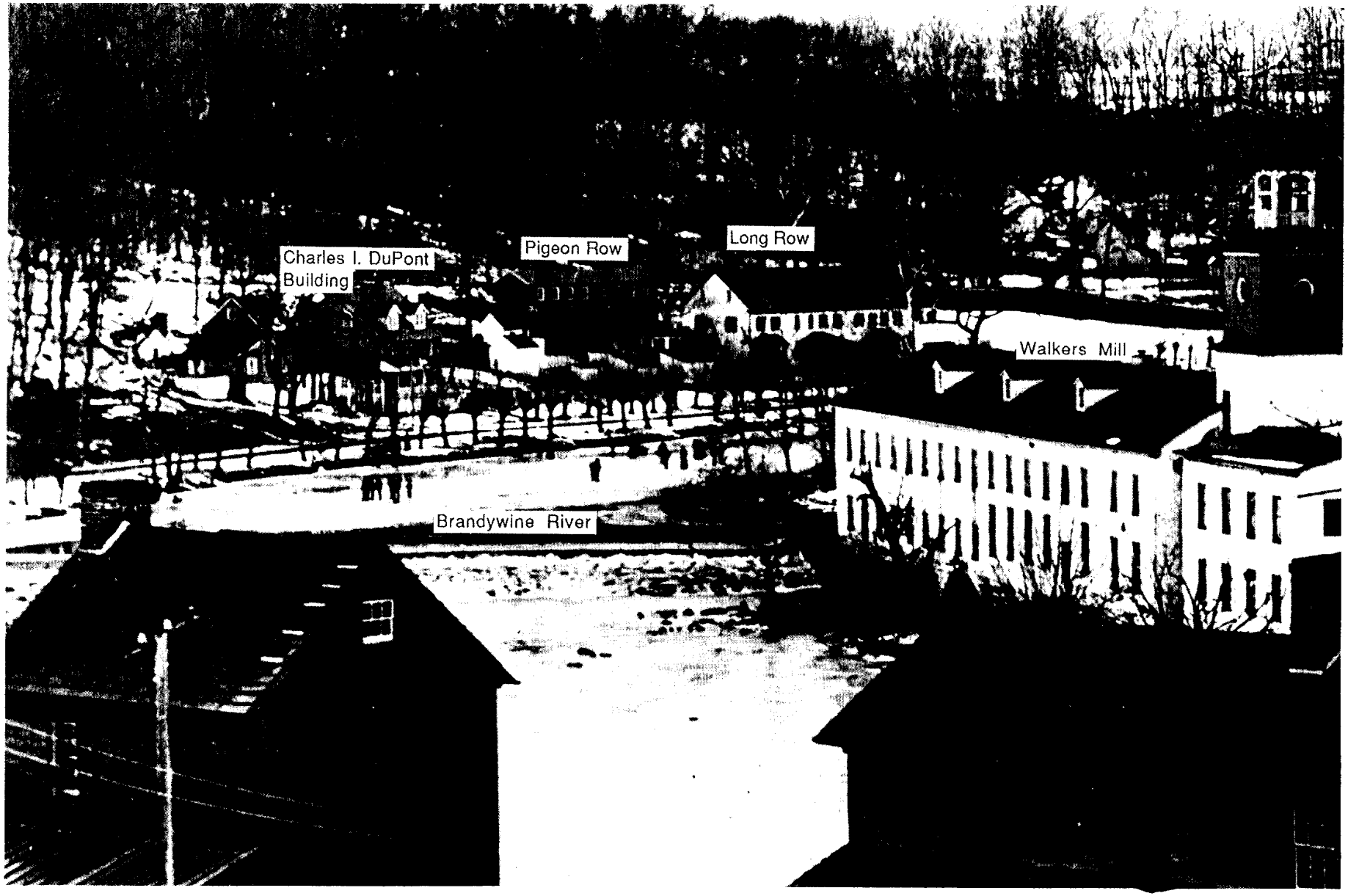
Frazier's 1889 (revised 1903) map of DuPont's Brandywine properties curiously fails to show either of these buildings, though other structures known to be standing at the time are also omitted (i.e. the easternmost of the Walker's Banks houses). The 1903 "W.B.J." survey shows both Long Row and Pigeon Row clearly, as well as C.I.D. house, and gives the residence unit numbers which correspond to those used in Chaney's survey, described below.

By the turn of the century detailed information on the physical condition of each housing unit is being gathered. G. R. Chaney completed a survey of each rental unit owned by the company and recorded the number of rooms, number of stories, and repairs requested by the tenants. We learn for example that Mr. William Andrews, resident of number 156 Long Row, requested a door made in the cellar to the backyard, and reported that the roof leaked in one of his outbuildings (Chaney 1902:55). It also indicates that the Long Row house was made of stone. Around this time photographs of the buildings were taken so that their appearance can be evaluated. The front facade of the Long Row House appeared in a picture from McClure's Magazine in 1895 (H50-92: negative numbers from the photographic collection at the Eleutherian Mills-Hagley Foundation Library) and a photo from a year later shows the CID house, Pigeon Row (Diamond Row) and Long Row house, together with numerous flanking outbuildings (H50-120, Plate 2). The Pigeon Row house appears smaller and of frame construction (Macklem 1936:4).

A photograph taken around 1906 shows the construction of a retaining wall along the Brandywine that was built to elevate the level of the Creek Road above flood level in preparation for the construction of the Trolley Line to Wilmington (H 50-95, Plate 3, Macklem 1936:4). This may have served to protect the road from floods, but apparently did not prevent them from fouling the springs used as household water supplies, since this is one of the complaints of the residents recorded by Chaney (1902).

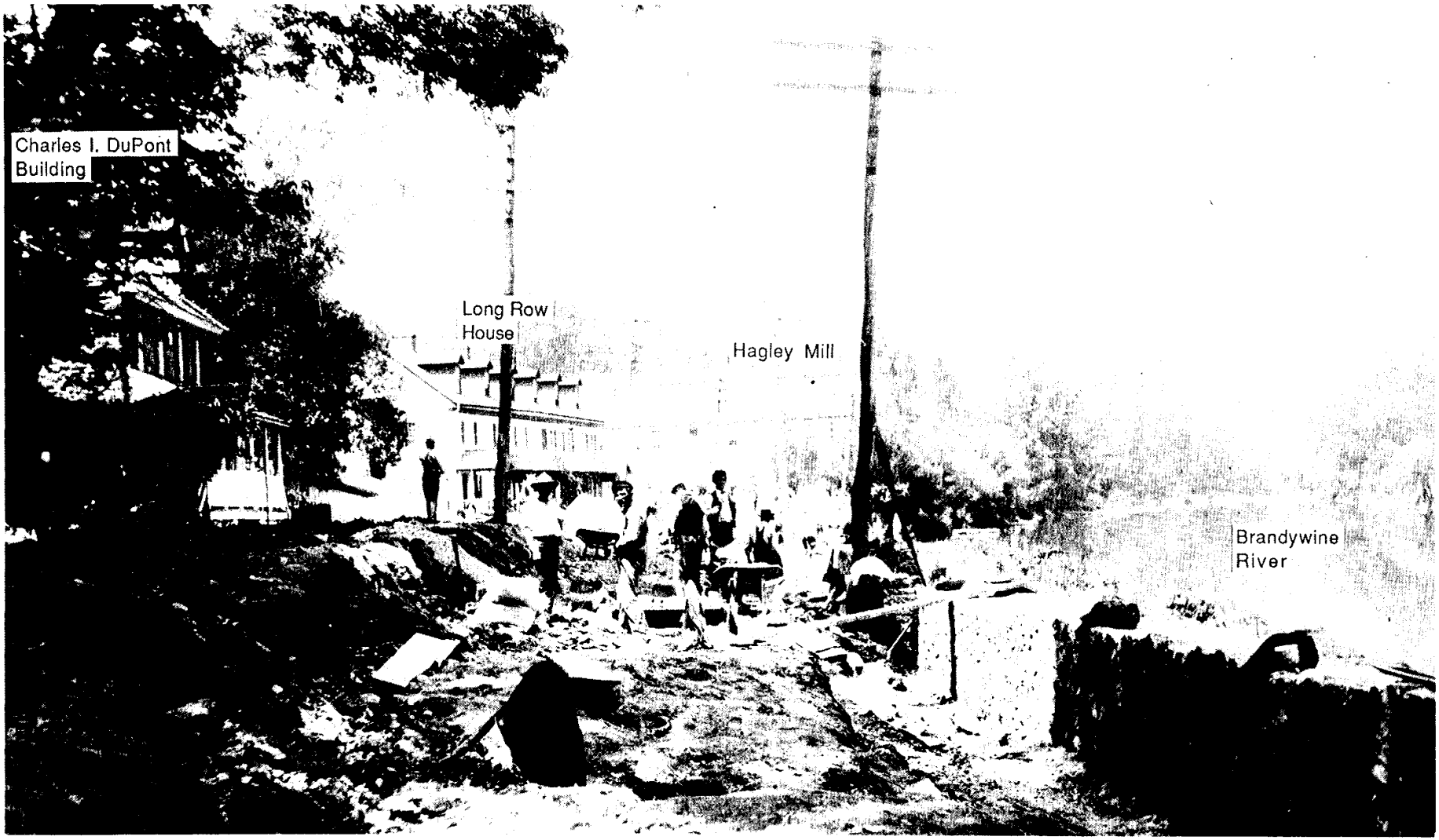
In summary, although structures can be identified in the vicinity of the row houses on the 1849 Rea and Price Map, Long Row and Diamond (Pigeon) Row are not clearly identified and documented until the late 1860's and early 1870's. From that time forward, increasingly good information about the condition of the dwellings and the occupants becomes available through company records. Detailed economic profiles of the residents as individuals and as a group, similar to the one constructed by Uminowicz (1979), could be constructed by cross-referencing the company documents with those from public sources. Further discussion of the cultural

PLATE 2
Long Row House, Pigeon Row House and Charles I. DuPont House



West view

PLATE 3
1905/1906 Photograph Showing Construction of Retaining Wall, Row House Site



North view

characteristics of the residents of the various mill housing units has been given in the discussion of the historical context of the project area.

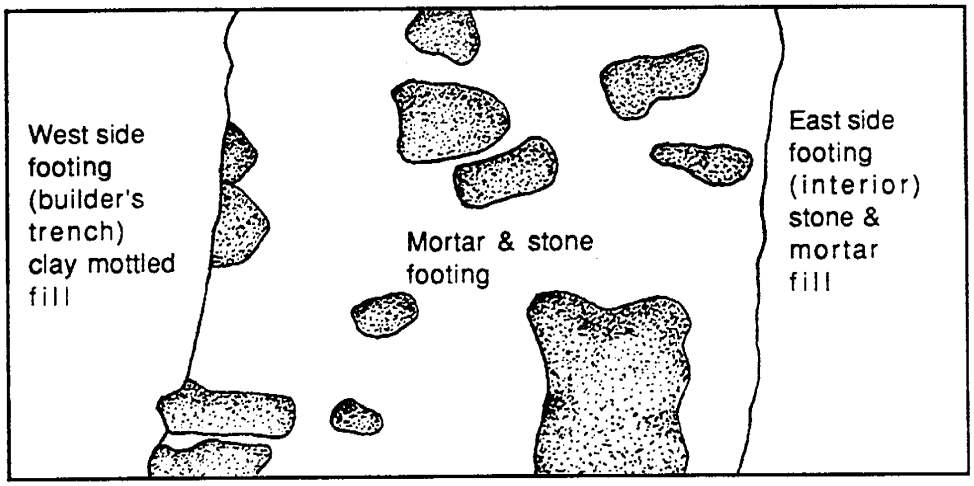
Results of Preliminary Phase I Investigations

Subsurface testing was conducted during the preliminary Phase I survey in the locations of the two structures as determined from the early surveys (Figure 7). This testing included eight 2.5' by 2.5' shovel tests and a walkover inspection of the entire area. The primary goal of the testing was to pinpoint portions of the foundations of the two structures noted above and to determine the extent and condition of subsurface structural remains. The second goal was to assess the potential for more deeply buried land surfaces closer to the creek which might contain prehistoric sites situated on the Brandywine floodplain. The first goal was easily accomplished because portions of the foundations belonging to these two structures were visible on the surface. The southwestern corner of the Long Row House was noticeable at the northern end of the C.I.D. parking lot and slightly up the slope. The architectural plans indicated that this building measured 40 by 100 feet. Using these dimensions and starting at the exposed southwest corner, two 2.5' by 2.5' shovel tests were laid out at points corresponding to the mid points of the east and west exterior walls. This was done in order to confirm that the visible foundation corner was in fact the foundation of the Long Row House and to determine the extent of subsurface structural remains. The two shovel tests did reveal the foundation walls as expected. The western wall foundation footing was encountered in Shovel Test 6 (Figure 14) at a depth of less than .4 feet below the present surface. The eastern wall foundation was encountered as expected in Shovel Test 7, forty feet from the western wall and at a depth of 1.1 feet below the current ground surface (Figure 15). The difference in elevation between the east and west wall indicated that the first or ground floor was cut into the bank and that there was a good possibility that a considerable portion of the foundation lay intact below the present ground surface. Subsequent extended Phase I investigations confirmed this. The plan and profile drawings of Shovel Test 6 are shown in Figure 14. The profile shows a thin layer of humus resting on the foundation surface with rubble and fill on the eastern side (the interior of the house), while the western side contained subsoil. This confirmed the location and orientation of the structure as expected from the plans (E. I. duPont 1902).

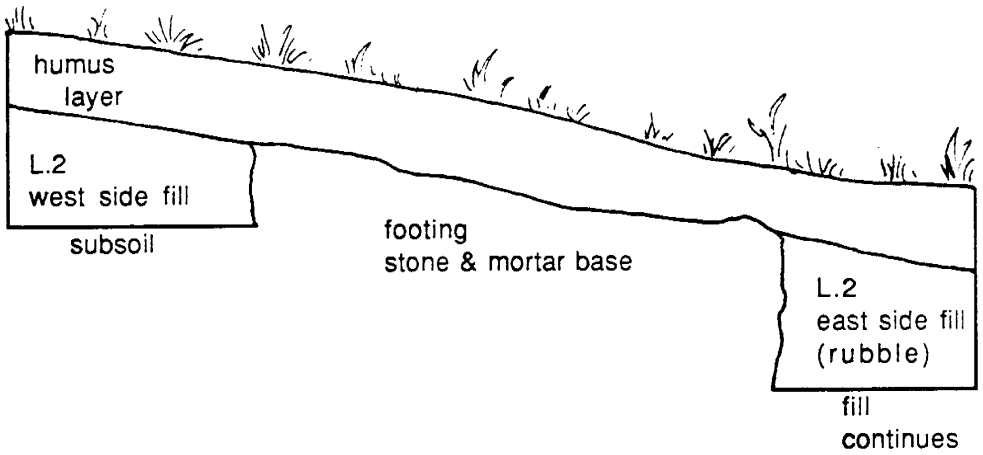
The Pigeon Row House is a slightly smaller multi-family dwelling. A portion of its eastern exterior wall was visible on the surface. A single shovel test (Shovel Test 8) was excavated at the approximate midpoint of this wall. The house location is southwest of the Long Row House which places it above the existing parking lot serving the C.I.D. office. Shovel Test 8 confirmed the presence and orientation of the foundation remains of Pigeon Row (Figure 16). The rock wall feature in Shovel Test 8 was in the proper location for the Pigeon Row House and was correctly

FIGURE 14
LONG ROW HOUSE FOUNDATION
Shovel Test 6

PLAN VIEW



PROFILE OF NORTH WALL



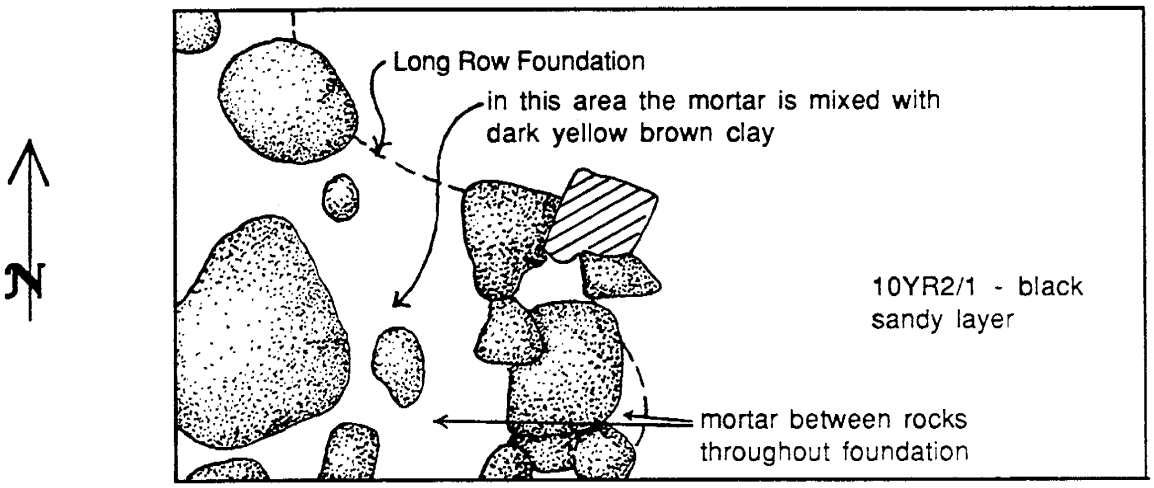
West side fill - very little brick & mortar; clay mottled - 10YR5/8 yellowish brown silty clay

East side fill - mostly stone, brick & mortar - 10YR3/3 dark brown silty loam

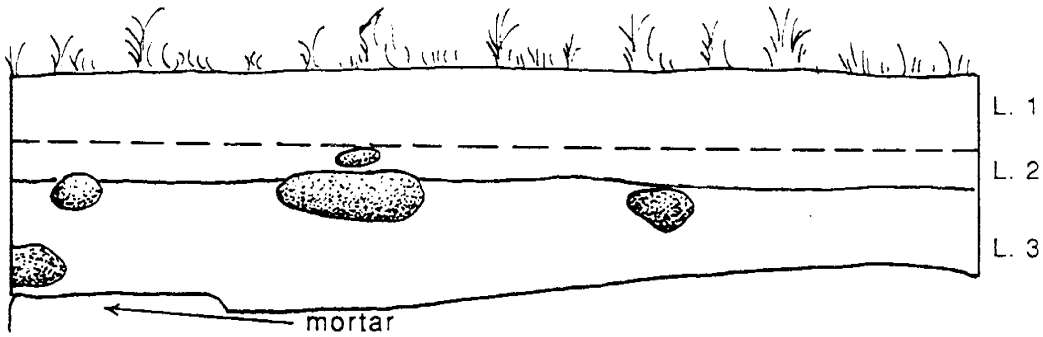
Humus - 10YR4/3 dark brown silty loam

FIGURE 15
LONG ROW HOUSE FOUNDATION

PLAN VIEW, SHOVEL TEST 7, BOTTOM OF LEVEL 3



PROFILE - SHOVEL TEST 7, NORTH WALL



Level 1 - (Ap) 10YR3/2 - very dark grayish brown sandy loam

Level 2 - 10YR4/2 - dark grayish brown silty sand

Level 3 - 5YR3/4 - dark reddish brown silty loam - associated with Long Row Foundation

= rock

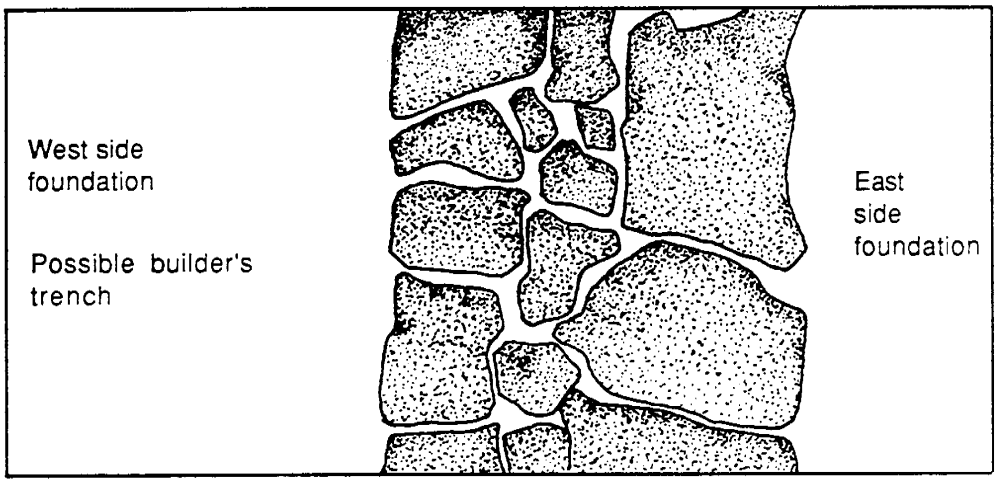
= brick

0 1 2

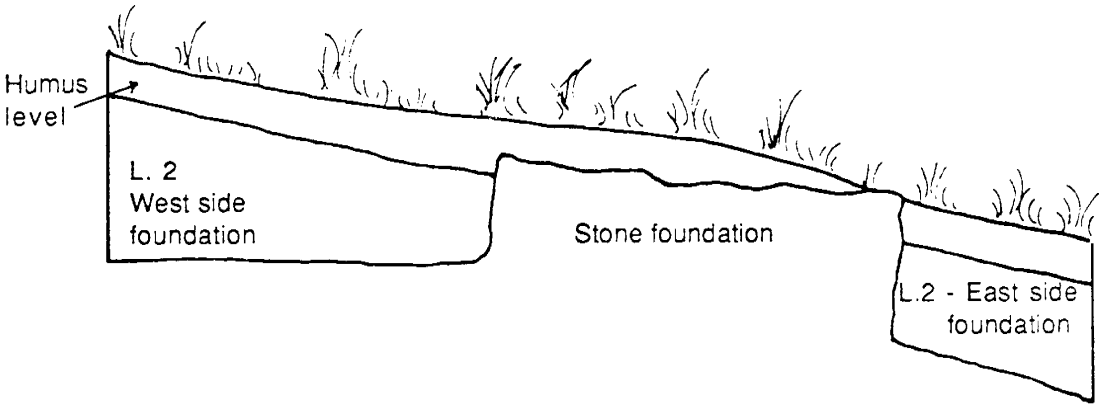
feet

FIGURE 16
PIGEON ROW HOUSE FOUNDATION
Shovel Test 8

PLAN VIEW



PROFILE OF NORTH WALL



interpreted as the eastern exterior wall foundation footing as later demonstrated during extended Phase I excavations.

Other features in the vicinity of the two structures were identified during the preliminary Phase I investigations and are shown on Figure 17. These include several circular depressions and a circular concrete privy which was common in the area after 1902. Additionally, the bridge construction plans provided by DelDOT (noted above) of the area, drawn at the time of the existing Route 141 bridge construction, show an old well farther to the north.

As noted above, the second goal for preliminary Phase I testing in Segment 3 was to determine whether or not buried land surfaces might be present adjacent to the Brandywine which might contain earlier historic period sites or perhaps prehistoric occupation on alluvial sediments. Shovel Tests 1 through 3 were placed in a line extending from the existing road surface to the base of the railroad embankment in order to provide a profile cross section. Shovel Test 1 was excavated to a depth of 2.8 feet (through Level 8) and an auger test was taken down to a total depth of 6.5 feet below the present surface (Levels 9-13). All soil from the excavation and the auger test soil was screened. The results indicated thirteen soil zones (Figure 18). Levels 1 through 7 and Level 12 contained historic artifacts. These artifacts consisted primarily of bottle and window glass, although some ceramics were recovered. Whiteware (5 sherds) made up the majority of the ceramics. Levels 8 through 11 and 13 were sterile. Levels 1 through 11 are fill episodes, while Level 12 is interpreted as a buried A horizon consisting of a dark brown silt loam which may indicate an earlier land surface. Several fragments of coal and 2 nail fragments were recovered from the silt brought up in the auger from Level 12. Level 13 was a dark yellowish brown fine sandy silt and was interpreted as an alluvial C horizon. Ground water was encountered at the transition between Levels 12 and 13.

The buried A horizon (Level 12) was later determined, during the extended Phase I excavations, to have been buried around 1900, during construction of the railroad line.

Shovel Test 2 was placed fifty feet due east of Shovel Test 1 (Figure 6); however, a concrete sewer casing and iron pipe were encountered at 1.0' feet below the surface in this unit and the unit was closed at that point.

Shovel Test 3 was placed near the base of the railroad bed embankment (Figure 7) and the results indicated an .08 foot thick Ap (plowzone) horizon containing numerous historic artifacts. This horizon rested on top of a sterile fine sandy clay colluvial subsoil. Excavations stopped at .9' feet below the surface, at the top of the subsoil; however, augering continued to 2.9' below the surface where it was stopped because of an obstruction. No significant soil changes were noted beyond .9'.

FIGURE 17
PIGEON AND LONG ROW HOUSES

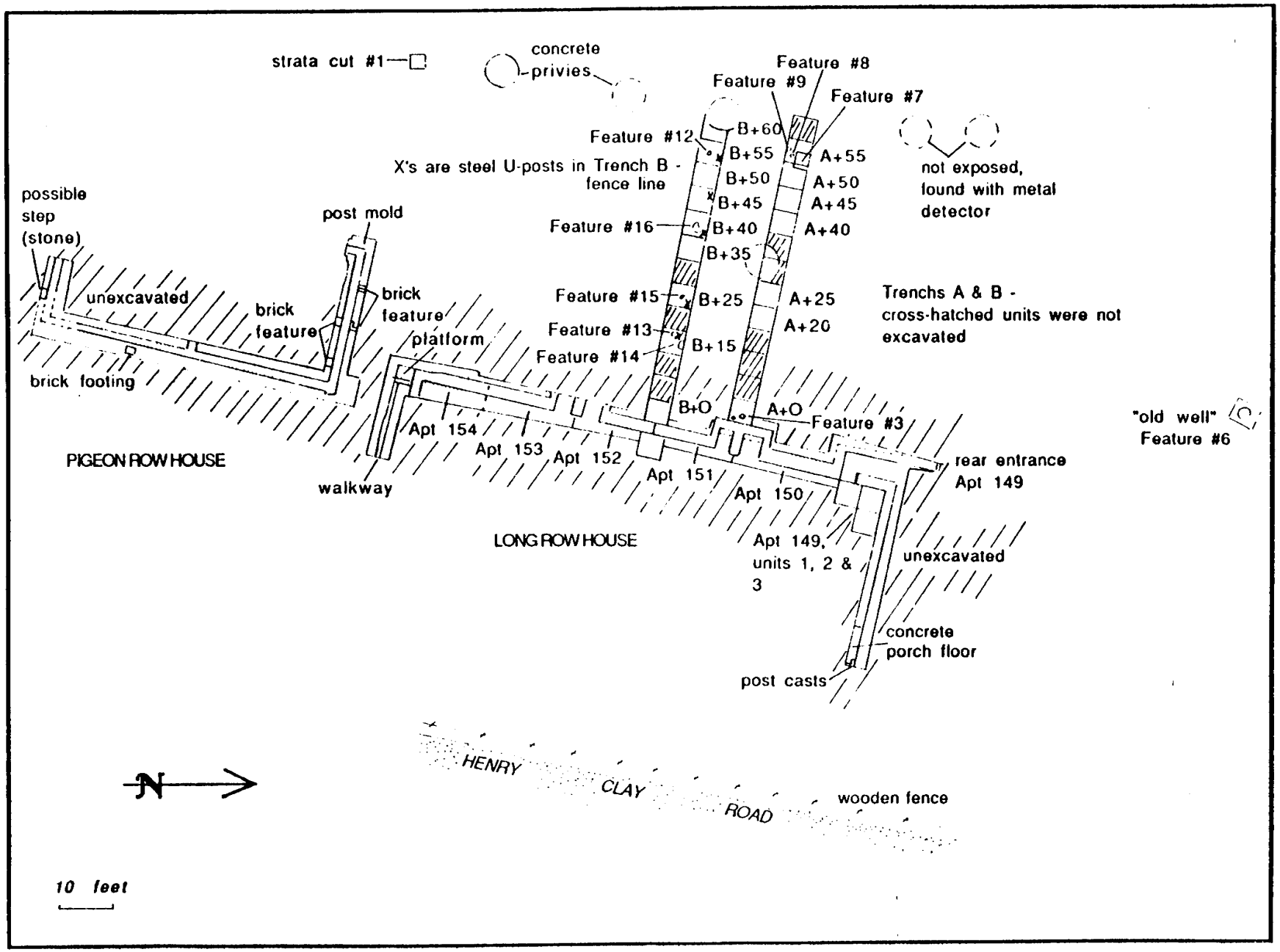
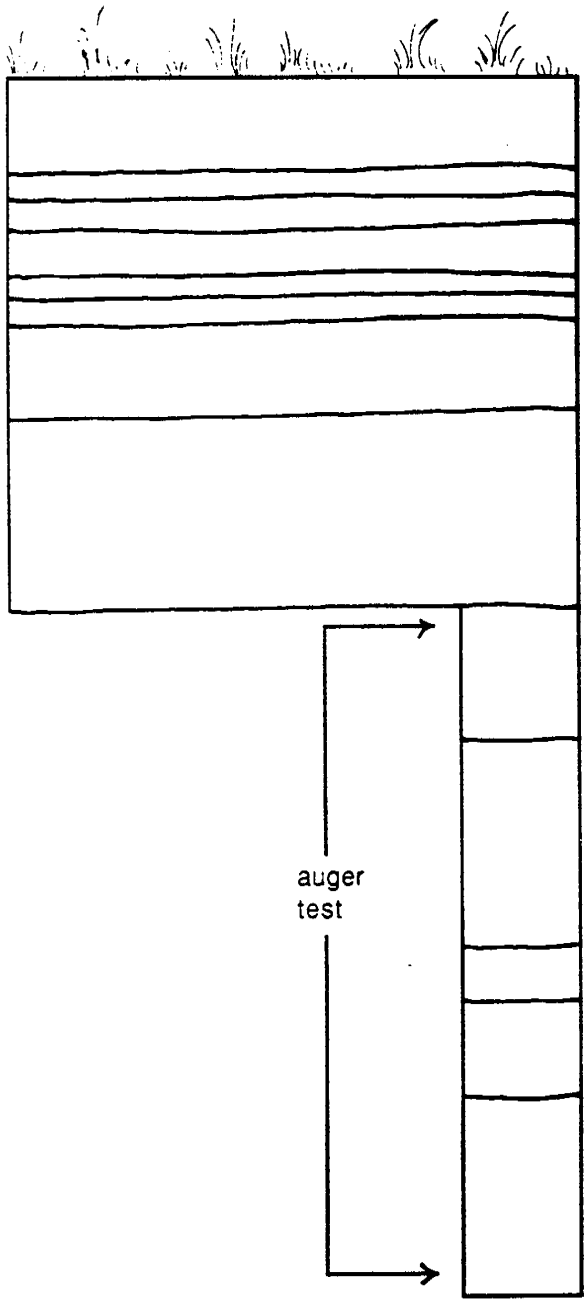


FIGURE 18
SEGMENT 3
Shovel Test 1, Soil Profile



Levels

1 (0-.5') humus & silt layer 10YR3/3 dark brown coarse sandy loam

2 (.5-.65') coarse sand layer 10YR5/6 yellowish brown

3 (.65-.8') sandy loam 10YR4/4 dark yellowish brown

4 (.8-1.05') red sand layer into fine sandy silt 10YR 5/6 yellowish brown

5 (1.05-1.15') sandy silt loam containing much coal & glass 10YR3/3 dark brown

6 (1.15-1.3') variegated coarse sand w/ clay 10YR5/6 strong brown w/ 10YR5/4 yellowish brown

7 (1.3-1.8') 10YR5/6 yellowish brown sand w/ white sandstone inclusions

8 (1.8-2.8') red & yellow coarse sandy loam w/ large subangular cobbles 7.5YR6/8 & 10YR7/1

9 (2.8-3.5') variegated clay w/ weathered rock 7.5YR5/6 predominant color mixed w/ 10YR7/1 light grey

10 (3.5-4.6') variegated silty sand

11 (4.6-4.9') variegated clay w/ weathered rock, sterile

12 (4.9-5.4') buried A - silty loam 10YR3/3 dark brown - coal, metal present

13 (5.4-6.5') 10YR3/6 dark yellowish brown fine silty sand containing mottles of 10YR5/2 greyish brown (gleying); soil becoming very moist

All levels contained cultural material except levels 8 - 11

0 1 2

feet

In general, the plowzone from the preliminary Phase I shovel tests contained a large number of artifacts. A Mean Ceramic Date was not calculated for the plowzone as it was determined to be post-1900. The majority of the ceramics consisted of refined white earthenwares which comprised 65.38% of the total. Coarse red earthenwares were the next largest ceramic types, comprising 20.71% of the total. Most of the glass was machine made, dating from 1903-present.

Shovel Test 4 was placed to sample a bottle dump observed on the ground surface at this location (Figure 7). It was excavated to a depth of 3.2 feet. The soils in this unit consisted of two fill zones resting on a zone which was interpreted as fill associated with the old railroad bed. The first fill zone was a 10YR2/1 silt loam with 10YR4/4 and 10YR5/6 sandy mottles. This zone extended to a depth of about 1 foot. It contained numerous historic artifacts including 321 ceramic sherds, 395 bottle glass fragments, 271 window glass fragments and numerous metal artifacts, including 339 can fragments. Most of the ceramics (252) were ironstone and date from 1813 - 1900+ (South 1977). The remaining ware types include 43 coarse red earthenware, 3 stoneware, 4 pearlware, 2 whiteware, 6 porcelain and 1 coarse buff earthenware. All of the diagnostic glass was machine made and dates post-1903. The second fill zone was a 10YR3/2 sandy loam. Artifacts were considerably reduced in this level. Thirteen ceramic sherds were found, 9 ironstone, 7 whiteware, 2 coarse red earthenware, 1 porcelain and 2 buff bodied earthenware. Seventy-three bottle glass and 6 window glass fragments were also recovered. The railroad fill (the third zone) consisted of a 5YR5/6 sandy clay with 5YR5/8 mottling and many large rocks. Two yellowware sherds, 7 fragments of bottle glass and 5 window glass fragments were recovered from this zone.

A Mean Ceramic Date of 1854.74 was obtained for the first two fill zones in Shovel Test 4. The majority of the ceramics were again refined white earthenwares, with ironstone representing the majority type - 78.14% of the total ceramic assemblage. Coarse red earthenwares made up 13.47% of the ceramics. The majority of the diagnostic glass was machine made.

In summary, the results of Shovel Tests 1 through 3 indicated the presence of at least one buried land surface which was thought, at the end of the preliminary investigations, to contain intact archeological remains. This buried land surface was later determined to be 20th century. The extent of this buried surface could not be determined precisely at the end of the preliminary investigations, but was thought to extend to a point somewhere between Shovel Tests 1 and 3. Shovel Test 4 consisted of fill zones resting on an old railroad bed. A prehistoric component was not located.

Results of Extended Phase I Investigations

Extended Phase I investigations at the Row Houses were initiated in April 1986. A base line for the site grid was established using the east wall of the C.I.D. office as the north/south grid line. The northeast corner of that building was arbitrarily established as N0W100 and a surveyor's nail was set in the parking lot macadam at N100W100. Wooden stakes were set at each fifty foot grid point across the site. At the end of the fieldwork all but one wooden stake was removed. The N200W100 stake was left in the ground flush with the ground surface to avoid destruction from mowers.

In the following discussion, when referring to the orientation of the two Row Houses, "front" is taken to mean toward the Brandywine Creek (to the east), and "side" refers to the north or south end of either ruin. The backyard in the case of Long Row House is the area between the railroad bed and the house itself. The area behind the Pigeon Row is much smaller as the building was within 10 to 20 feet of the base of the railroad bed. The long axis of both houses is north/south. Figure 17 shows the locations of these structures.

The location of each of the buildings was precisely known from both archival research and the preliminary field testing. The primary goal of the extended Phase I excavations was to establish the presence of in situ contexts which would be of greater analytical utility than the disturbed contexts noted in the preliminary investigations. These would include features, midden deposits, etc. In addition, since Long Row and Pigeon Row were multi-family workers' dwellings, there was the potential for isolating contexts which could be associated with discrete family units. Backyard divisions such as fence lines, if present, could be used to separate exterior contexts such as midden or privies and perhaps tie them into individual apartments. The extended fieldwork was designed to determine whether isolating such contexts was possible. This was accomplished by first exposing enough of the foundation to locate apartment divisions on the interior walls and entrance ways. In addition, the backyard area was sampled with two five foot wide trenches in order to isolate fence lines and features. Finally, a number of surface anomalies such as depressions or exposed concrete and the "old well" noted during the preliminary fieldwork were explored as well.

Following the establishment of the grid, the first step was to completely expose two adjacent exterior foundation walls from each of the two row houses. This was accomplished by uncovering the preliminary shovel test units and then following the foundations to the corners using shovels. Since the dirt being removed in this process was plowzone and demolition fill, it was screened only where controlled excavation units were placed and not during the foundation exposure process. Artifacts were collected from the backdirt, however, and were assigned an uncontrolled (unscreened) context. Figure 17 shows the results of the

foundation exposure for the two structures. Plates 4 and 5 show the Long Row foundation. Architect's drawings (E. I. duPont, 1902) show that the Long Row House was divided into six apartments and Pigeon Row house was divided into four. The apartment numbers for the ten units begin at the north end of Long Row with Apt. 149 and run consecutively to the southern end of Pigeon Row, ending with Apt. 158. The drawings show each of the units in Long Row as being the same size, while Apt. 155 (north end of Pigeon Row) is shown slightly larger than the other units in that building. The foundation exposure revealed several rear entrances to Long Row and these are shown in Figure 17. They include a single entrance to Apt. 149 and two double entrances into Apts. 150 through 153. The ground floor at these entrances is slightly lower than the exterior grade and these five entrances each required descending stone steps into the interiors (Plate 6). Apt. 154 at the southern end of Long Row was served by a side entrance as shown by the platform and walk in Figure 17. It is likely that this platform supported exterior steps to an upper level. There was no break in the foundation when steps could reach the ground floor as there were in the other five Long Row apartments.

No entrances were found from the exposed east and north (front and side) walls of Pigeon Row. The north wall did have a chimney footing and it is likely entrance breaks in the east (front) wall are absent because the exposed foundation footing on the east side is below the original ground floor level and entrance breaks would have been removed during demolition. Plates 7 and 8 show the Pigeon Row foundation.

Photographs clearly show that Long Row was a stone structure; it is not clear whether Pigeon Row was partially stone and partially frame, or all stone. The rear wall of Pigeon Row, however, is cut deeply into the bank and at the very least the rear and side walls of this structure were of stone construction.

A single interior dividing wall running east/west and constructed of stone was revealed in the center of Pigeon Row. This may have been for floor joist support as it was slightly narrower than the exterior walls. The results of the foundation exposure show that interior apartment divisions for both houses were framed in and not constructed of stone.

In summation, exposure of the rear (west) and side (north) wall of the Long Row House show that isolation of individual apartments (family units) is possible from entrance breaks and from interior wall imprints which were noted on the walls and floors during the foundation exposure. This was not possible for the Pigeon Row House. The east (front) wall had been removed during demolition to a level below the point where such evidence would have occurred. However, the rear (west) wall was not exposed during the extended Phase I fieldwork, and apartment divisions should be clearly visible from this wall as the rear portion of this structure cuts deeply into the bank and much more detail is expected to remain intact.

PLATE 4
Long Row House Foundation, North Wall

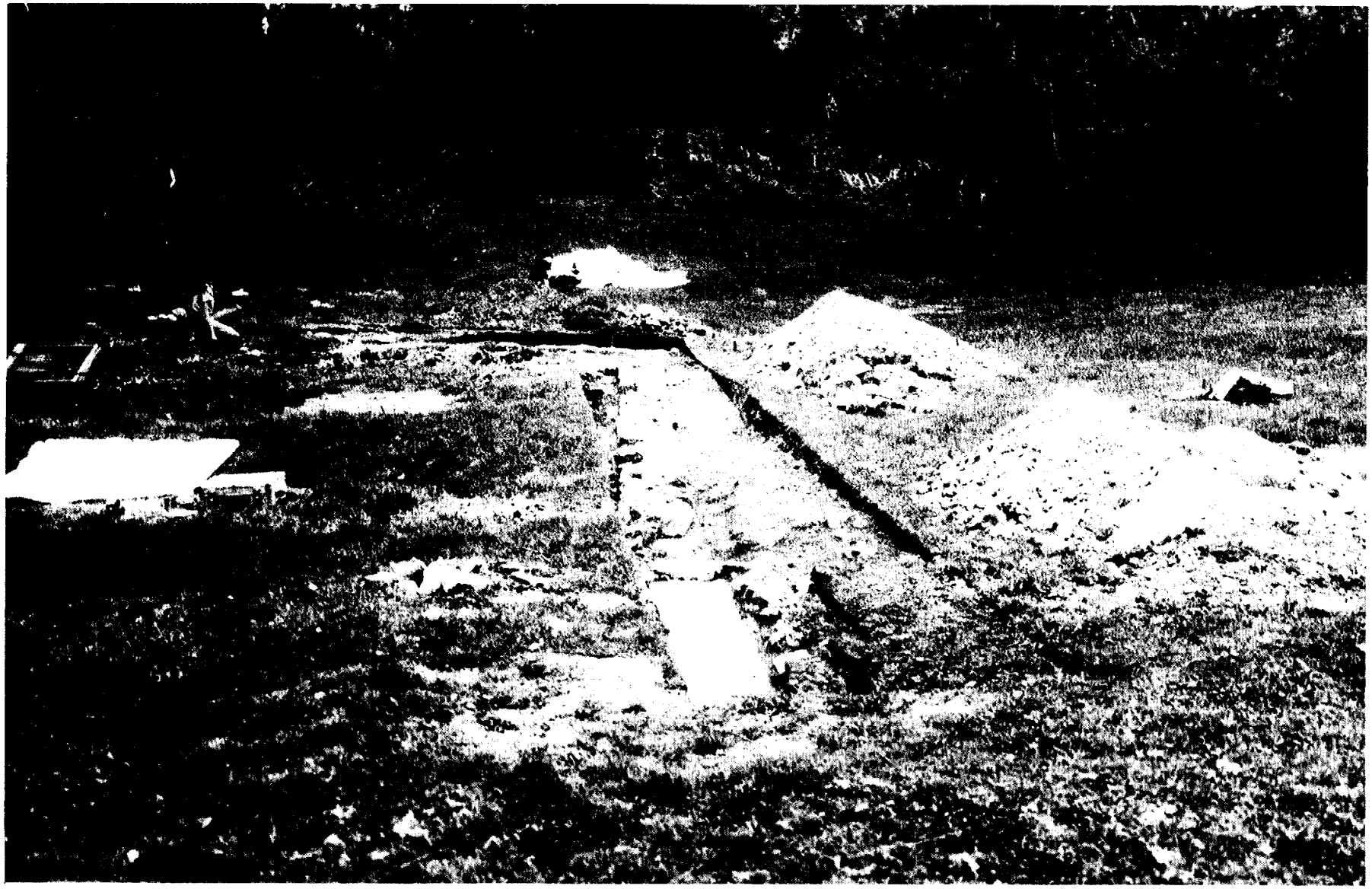


PLATE 5
Long Row House Foundation, West Wall

PLATE 6
Long Row, Rear Entrance, Apartments 150 and 151

Northwest view

PLATE 7
Pigeon Row Foundation, East Wall (Foreground) and Long Row Foundation, West Wall (Background)

North view

PLATE 8
Detail of Pigeon Row Foundation

South view

Results of Trench A and B Excavations

The next stage of fieldwork for the extended Phase I investigations was to conduct controlled excavations on portions of the interior and exterior of one of the houses. This was most easily accomplished at the Long Row House and, since this structure lies completely within the project boundary (Pigeon Row is only partially within these limits), efforts were concentrated here. Two five foot wide excavation trenches were extended from the rear wall of Long Row into the back yards. Each was placed at the apartment divisions noted during the foundation exposure. Trench A (Figure 17) was placed between Apts. 150 and 151, centered at the double entrance separating the two. Trench B was placed at the division of Apts. 151 and 152. The trenches were placed at the apartment divisions because they were designed to locate privies which would have been shared by the apartments as well as to attempt to determine if the yard divisions followed the apartment divisions. Since these trenches followed the orientation of the building and not the established excavation grid, they were designated in the following manner. Each trench was divided into 5 foot units which were designated according to distance from the wall. For example, the first unit in Trench A is A+0 since it directly abuts the foundation wall. The second, A+5, is located five feet from the wall. Seventeen of the resulting five foot by five foot units from both trenches were excavated and are indicated on Figure 17. In addition, Trench B was extended into the interior of the house and the resulting unit was designated as B-0. Fourteen features were identified in the two trenches and include Features 2 through 5 and 7 through 16, discussed in this section.

The trenches revealed a series of postmolds representing fence lines. One fence line was clearly from the terminal period of occupation which, according to Mr. D. DuPont, was in the 1940's or later. The base of steel posts associated with this line were recovered in Trench B where they had been left in the ground, broken off at the base of the plowzone (Ap). They were spaced at 6 to 8 foot intervals. These steel U-shaped posts are of the type which are commonly used today for woven wire fences or snow fencing. In addition to these steel posts, eight other circular and square postmolds were exposed in both trenches which are interpreted as earlier fence lines. These were assigned feature numbers and are shown in Figure 17. Features 4, 8, 12 and 13 were cross sectioned. The profiles of these are shown in Figure 19. Features 10, 14, 15 and 16 were left unexcavated as these were obviously postmolds. Feature 13 was an earlier postmold which had a steel post driven through the edge of it. The other steel posts did not have post molds as they were driven into the ground.

The composite profiles of two trenches are shown in Figures 20 and 21. Both trenches reveal an upper humus/fill horizon which is thickest at the upslope end (west). This is near the base of the railroad bed, but also where six concrete privies are located. Records from Hagley show that these privies were installed around

FIGURE 19
LONG ROW HOUSE
Profiles, Features 4, 8, 12 and 13

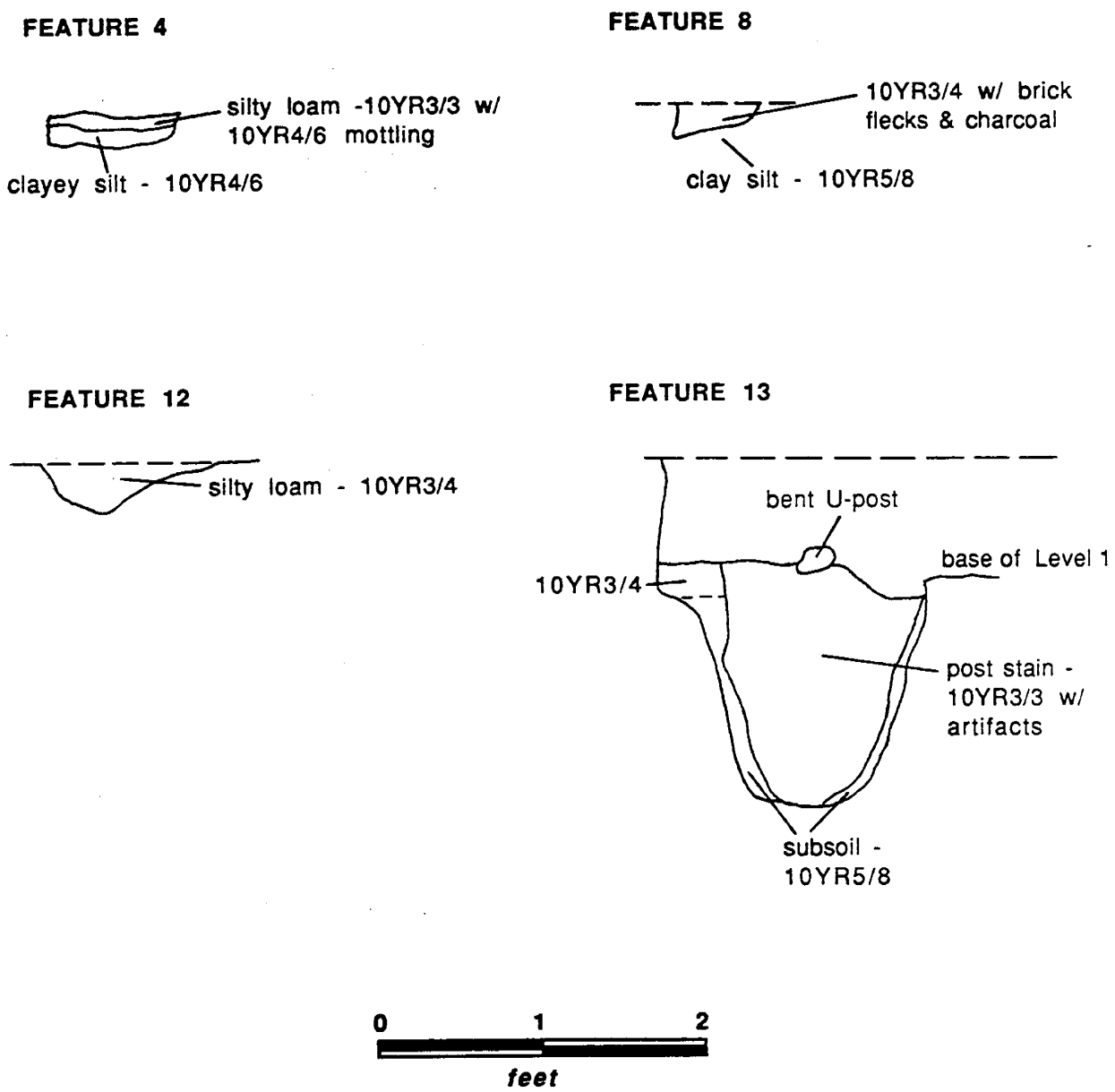
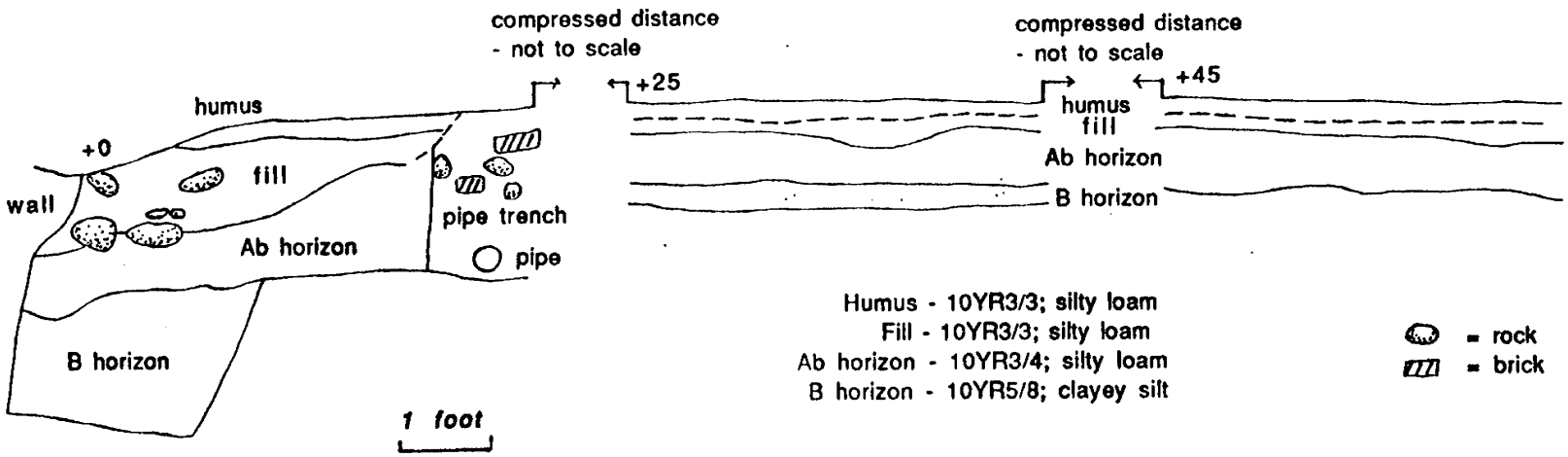


FIGURE 20
LONG ROW HOUSE
Composite Profile of Portions of Trench A



Trench A with profiled squares indicated

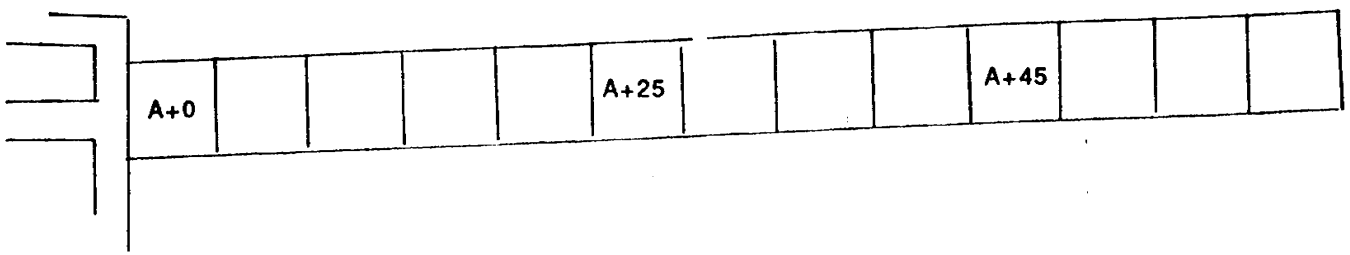
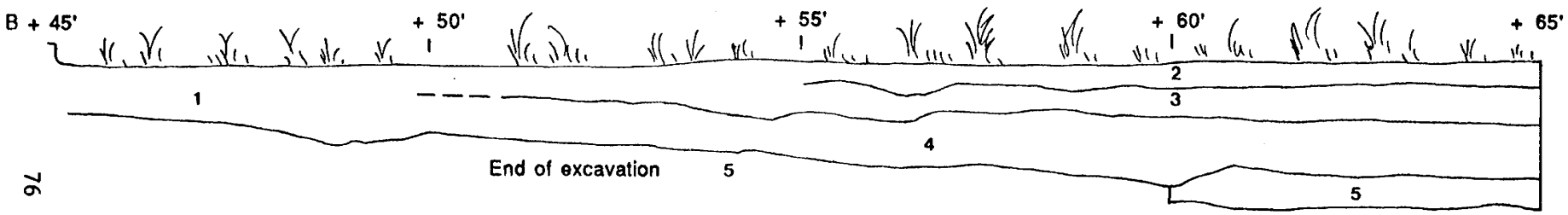


FIGURE 21
LONG ROW HOUSE
Composite Profile of Trench B



1 = mixed humus & fill with coal pieces
2 = humus - 10YR3/3; silt
3 = fill - 10YR5/8; silty loam with pockets of coal
4 = Ab horizon - 10YR3/6; dark yellow brown silty loam
5 = B horizon - 10YR5/8; moist silty clay

1 foot

1900 as a means of improving sanitation along the creek. The humus/fill layer has similar characteristics as the indigenous subsoil and has also been mixed with A horizon material including artifacts. This layer becomes thinner downslope and eventually disappears at B+45. Its origin appears to be from the excavation of the privy pits at the time they were installed.

The profile between B+40 and the foundation wall shows an artifact bearing organic zone (Ap) resting on sterile subsoil. The installation of plumbing is evident in the units adjacent to the back of the house. A cast iron pipe was uncovered in A+0, running parallel to the rear (west) house wall. It measured 2.5 inches (outside diameter), was buried 1.8 feet below the present ground surface, and was 4.5 feet from the edge of the stone step footing. The profile of the south wall of A+0 is shown in Figure 22. The trench created when the pipe was originally placed in the ground is shown crosscutting a buried organic horizon. A more recent organic fill, which is either contemporary with or more recent than the pipe trench, lies above the buried horizon. Cross mends within ceramics recovered occur between these three contexts. The occurrence of the cross mends, however, may be because the pipe trench fill was not excavated separately from the surrounding soil. The pipe trench fill was very similar to the adjacent soil and was difficult to distinguish in the field.

A 1" diameter copper pipe was found protruding from the house wall in B+0. It is a modern type with soldered joints. Feature 5 turned out to be a repair pit in which a section of this pipe was repaired with a soldered joint. Another larger pit, designated as Feature 2, was also uncovered in B+0. It contained some plastic, and a second copper pipe coming out of the wall was found at the base of Feature 2. The contexts in B+0 were obviously disturbed from the more recent copper plumbing installations.

The majority of features noted above from the trench excavations were either post molds or plumbing related. They included Features 2, 4, 5, 8, 10, and 12 through 16. Feature 4 contained 1 pearlware and 3 whiteware sherds. Feature 13 contained 8 coarse red earthenware sherds, 1 pearlware sherd, 6 whiteware sherds and 16 container glass fragments, some of which were machine made. In addition, 21 unidentified nails, 23 cut nails, 6 wire nails, a screw and a clothing hook were recovered from this feature. Four additional features were uncovered during the trench excavations. These include Features 3, 7, 9 and 11 which are discussed below.

Feature 3 was located in A+0 at the eastern edge of the unit and next to the stone step footing for the double entrance into the house. It is square shaped, measuring 1.4 feet on a side. It is somewhat larger than the majority of other postmolds; however, it is centered between the two apartment entrances and may be from a large end post. It was noted just below Level 1 at the same point that Feature 4 was identified, approximately .5 feet below the present ground surface. It is shown in profile in Figure 23.

FIGURE 22
LONG ROW HOUSE
Unit A + O, Profile of South Wall

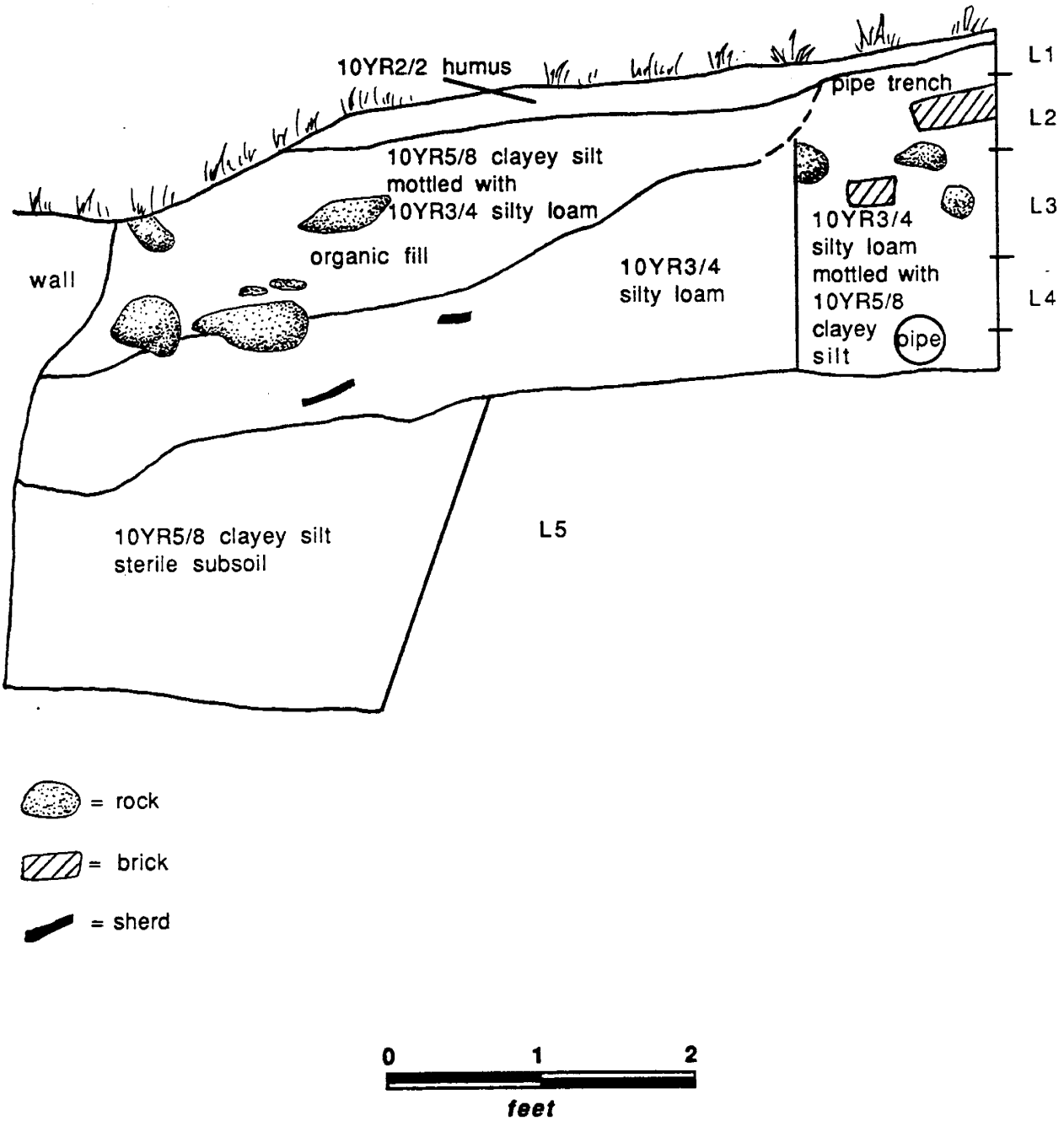


FIGURE 23
LONG ROW HOUSE
Profile, Feature 3, West Wall

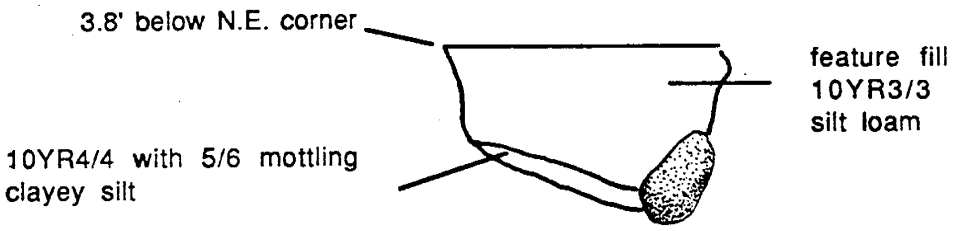
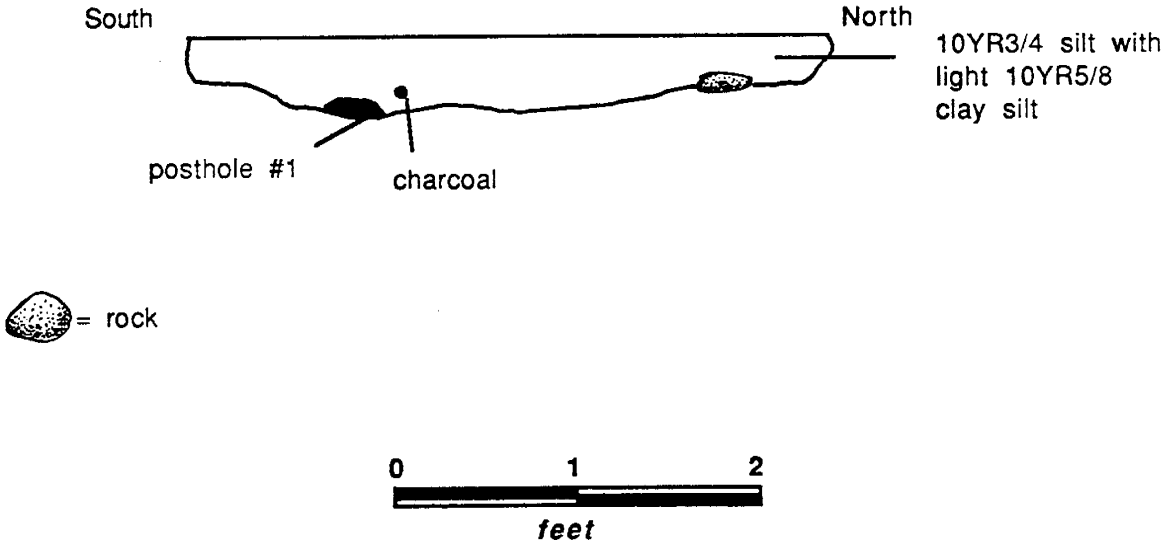


FIGURE 24
LONG ROW HOUSE
Feature 7, Profile



Feature 3 contained 5 sherds of coarse red earthenware, 3 creamware sherds, 5 pearlware sherds, 1 porcelain sherd and 17 whiteware sherds. This feature also contained 15 window glass fragments, 14 nail fragments, a metal washer and a slate pencil. A Mean Ceramic Date could not be calculated because of the small sample size, but the terminus post quem would be provided by the beginning date for whiteware, 1820.

Feature 7 was a large shallow pit identified at the surface of the subsoil in units A+50 and A+55. It measured 3 feet on one side and extended into the north wall of the trench. The feature was cross-sectioned and the southern half was excavated. The remaining portion of the feature was left unexcavated. The profile (Figure 24) shows that it intruded four tenths of a foot into the subsoil, while the surface of the subsoil was .85 feet below the present ground surface. The feature is thought to be from a shallow privy. Feature 7 contained 5 coarse red earthenware sherds and 2 pearlware sherds as well as 11 nail fragments, including 1 cut nail and 3 glass container fragments.

Feature 9 was a shallow depression on the surface of the subsoil and was determined to be noncultural.

Feature 11 was a square stain occurring at the division between A+45 and A+50. It was noted on the surface of the subsoil measuring approximately 2 feet on a side. Feature 11 contained no artifacts and its function is unknown.

Other Excavations

In addition to the excavations associated with the foundations and the trenches described previously, a deep excavation unit, N335W88, was placed in the approximate location of Shovel Test 1 from the preliminary excavations in order to determine the nature of the buried soil horizon revealed in Shovel Test 1 (Figure 7). The upper fill was removed to approximately 5 feet below surface by a backhoe provided by DelDOT in order to expose this buried surface. Feature 1, a well preserved square wood post base, was recovered from the buried A horizon at 4.9 feet below the ground surface. Several square nails were embedded in the post. Feature 1 contained 3 whiteware sherds, 2 container glass fragments, 15 unidentified nails, 2 clinkers and a mortar fragment.

The presence of the post base within its original posthole indicates that extensive filling has taken place here, and earlier photographs show the grade on the north side of Long Row House to be much steeper than it is today. The fill was likely brought in when a trolley track was constructed just to the east of this location.

Feature 6 was a filled-in well which was indicated on the DelDOT maps (Figure 17). It was constructed of stone and capped with concrete. Although it was not excavated, artifacts recovered from the humus above the well included 25 container glass

fragments, 5 can fragments, 2 coal fragments, a mortar fragment, 6 cut nails, a furniture spring and a bakelite comb fragment. Ceramics from the well consisted of 2 coarse red earthenware fragments, 1 coarse buff earthenware fragment and a porcelain fragment. The porcelain fragment contained a maker's mark - "C.AH.....
Limog .....
Patented .....".
This mark was identified as one from C. AHRENFELDT from Limoges, France which dates from 1842-1898 (Kovel and Kovel 1953:26). The well was only exposed enough to determine its construction (Plate 9). A plan drawing of this well is shown on Figure 25 and the location of the well is shown on Figures 5 & 17.

Results of the Long Row House Interior Excavation Units

Four 5' by 5' excavation units were placed on the interior of the house. Three of these were placed at the northwest corner of Apt. 149. The fourth was the result of the extension of Trench B into the interior unit (B-0). It fell at the division of Apts. 151 and 152.

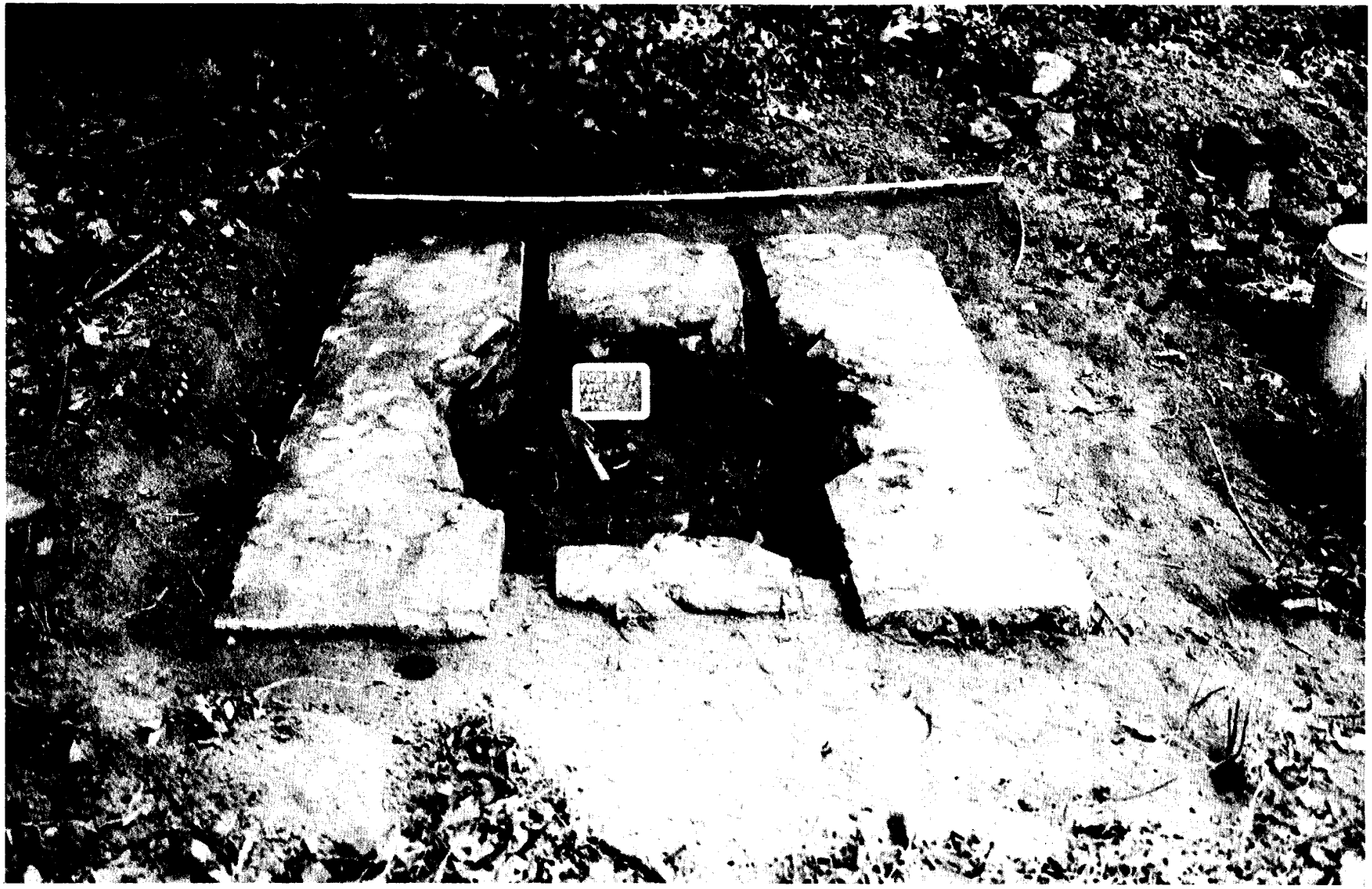
Unit B-0, Apartments 151 and 152

Unit B-0 was excavated to a concrete floor resting 3.5 feet below the present ground surface and approximately 2.4 feet below the top of the remaining west exterior wall of the structure. All soil above the concrete floor was demolition fill. A wall partition between the two adjacent apartments could be seen on the floor surface. Apt. 151 had a tile floor resting on the concrete pad while Apt. 152 had a linoleum floor covering. A hole had been cut through the concrete prior to demolition, apparently for plumbing access. An iron pipe was noted below the concrete and is shown in profile in Figure 26. A sample of the soil was taken from underneath the concrete through this opening and was screened; the artifacts from this soil are probably from the installation of the plumbing. No attempt was made to remove any of the concrete to expose the underlying soil. The results of Excavation Unit 3 in Apt. 149 (see discussion below), however, indicate that there may be an earlier brick floor below the concrete and fill. The concrete pad and linoleum are obviously later modifications to the house and no contexts were excavated from this unit which are from the earlier occupation, although they may be present underneath the concrete. Earlier sealed contexts, however, were found at the base of Unit 3, Apt. 149.

Apartment 149, Units 1, 2 and 3

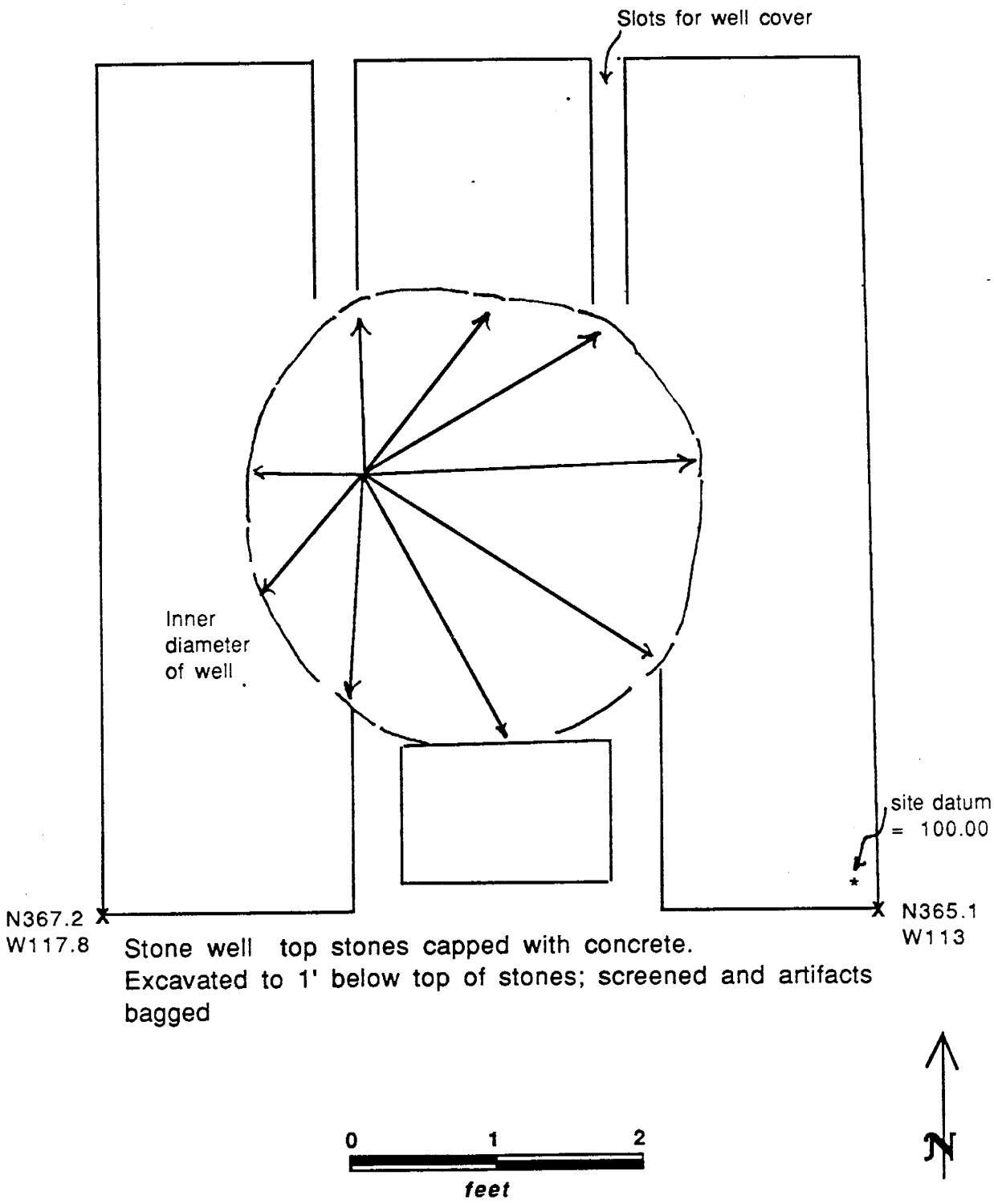
Units 1 and 2 were placed along the west interior wall of Apt. 149 and are shown in Figure 17. The same results were obtained as B-0, demolition fill resting on linoleum covered concrete. Unit 3 was placed to the east of Unit 2 along the north interior wall. Here, the edge of the concrete pad was exposed and found to extend approximately one foot into Unit 3. The concrete floor only

PLATE 9
Feature 6, Long Row House



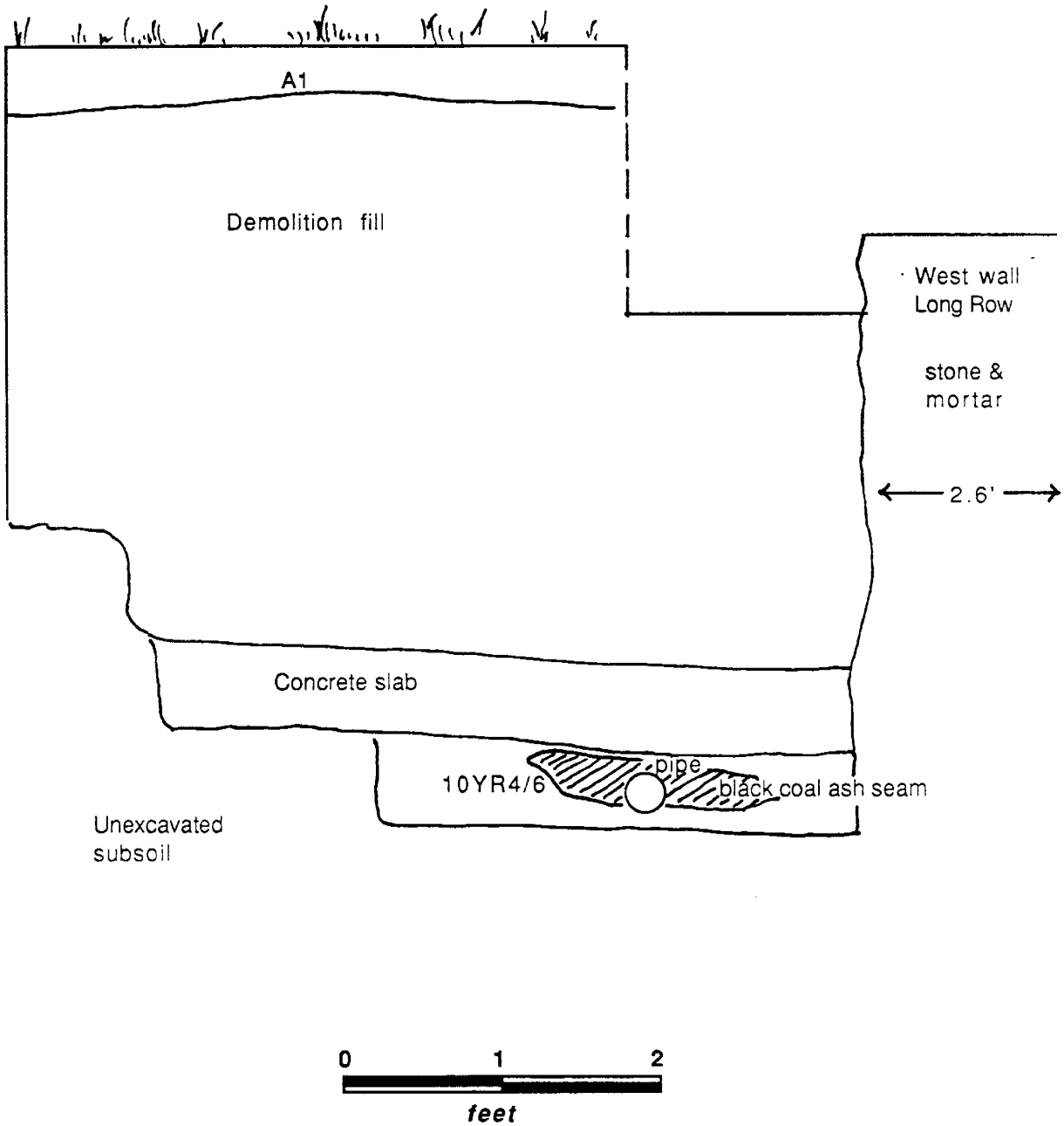
North view

FIGURE 25
LONG ROW HOUSE
Plan View Feature #6



Stone well top stones capped with concrete. Excavated to 1' below top of stones; screened and artifacts bagged

FIGURE 26
LONG ROW HOUSE
Apts # 151 & 152
Unit B & O, Profile South Wall



extended 6 feet from the rear wall of the structure while the rest of the interior had a wood floor. The south profile of Unit 3 (Figure 27) shows that the concrete was poured on a yellowish brown fill. A brick floor rested underneath this fill and the brick, in turn, rested on a stone and mortar wall. The ledge shown in Figure 27 matched a corresponding ledge along the side of the north wall and is probably a floor joist support feature built into the stone walls. The concrete floor apparently replaced an earlier brick floor at this end of the house and it is presumed that the remainder of the house had a wooden floor. One possible explanation of this is that the brick floor at the rear of the apartment(s?) was replaced with a concrete floor when modern plumbing was installed in the apartments. This leaves the possibility that a half or partial cellar may be present toward the front of the structure. This possibility could not be explored during the extended Phase I excavations because of the maximum safe depth to which the excavations could be conducted.

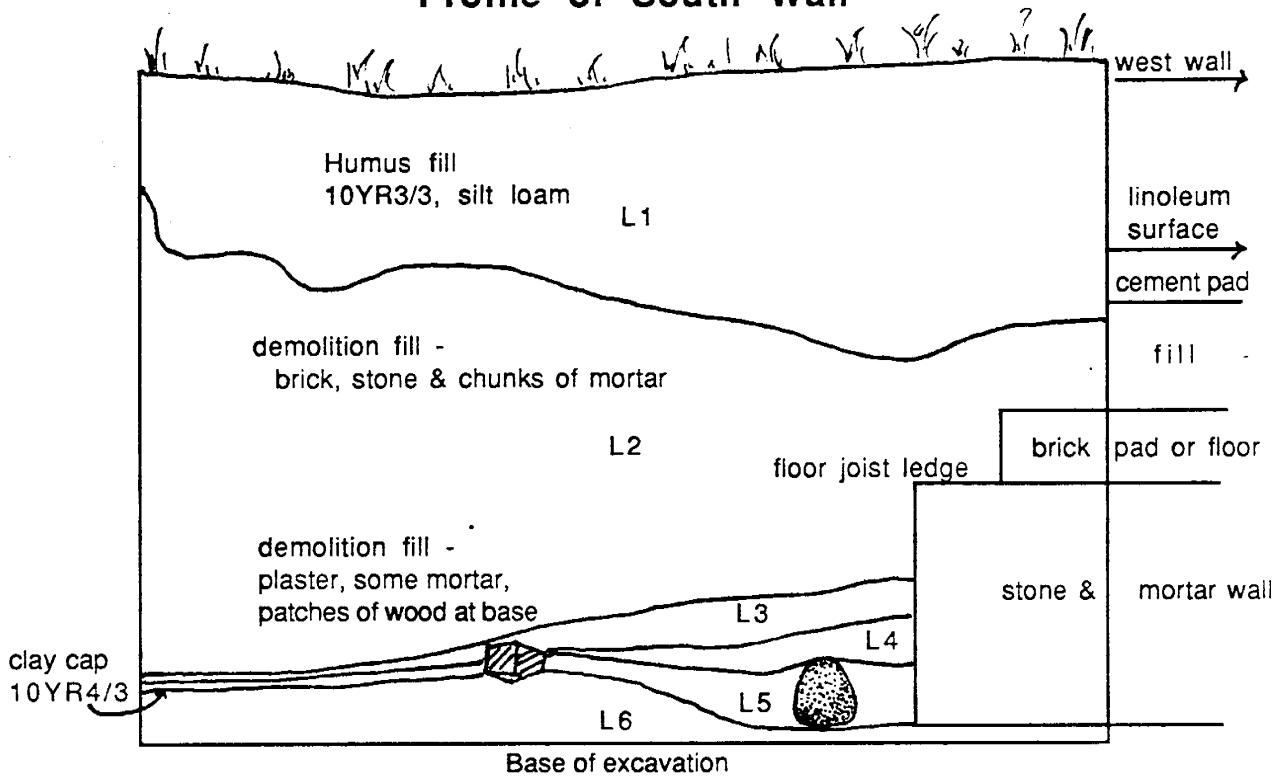
Excavation of Unit 3, as shown in Figure 27, revealed demolition fill (Levels 1 and 2). At the base of Level 2 were patterns of wood, the remains of hardwood flooring which was crushed and had collapsed onto underlying artifact bearing deposits (Levels 3-6). Three separate lenses (Levels 3, 4 and 5) were excavated below the flooring and are therefore in sealed contexts. Levels 3-5 compose the crawlspace midden. Level 6 was excavated into the clay subsoil. None of the excavation levels had ceramic cross mends nor were there any matching decorative motifs or types between levels. These lenses were thickest at the western end of the unit where the brick and concrete flooring began. These lenses became very thin towards the east (front). These results demonstrate an excellent potential for recovering sealed contexts from the interior of the Long Row House that can be directly associated with individual family units. Plate 10 shows the excavation in Apt. 149.

Intrasite Analysis

For the purposes of analysis, the artifacts from the site were examined in several different ways. The first is by provenience groupings. These groupings are based upon the soil horizon/context in which the artifact was found. The second is by the structure or portion thereof, i.e. Long Row House, Pigeon Row House or Apartment 149. The third is the entire site as a total. These sub-divisions were used to investigate ware type distribution, South's function and to calculate the Mean Ceramic Dates. Descriptions of the various provenience groups are presented below; however, Groups I-IV contained 20th century contamination in the form of modern glass, plastic, coins, etc. and the results are not discussed in detail here. The results of the analysis of the middens (Group IX) and Group V, as well as Group VI are discussed below, however, even if some contamination was evident.

Group I consists of fill associated with modern disturbances such as the installation of plumbing fixtures, etc. This group

FIGURE 27
LONG ROW HOUSE
Apt. #149, Unit 3
Profile of South Wall



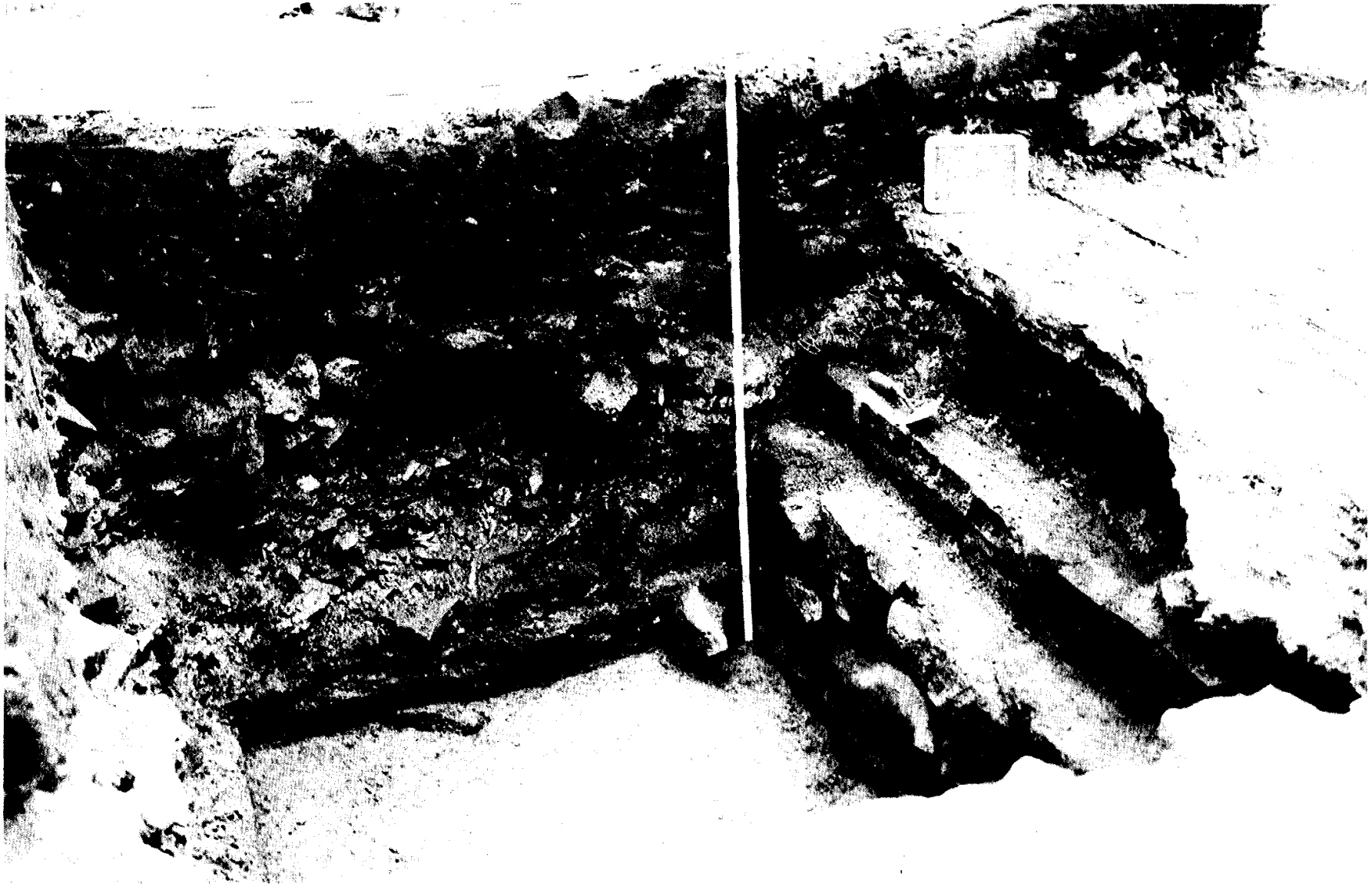
Level 3 10YR4/4, sand
Level 4 10YR5/8, sand
Level 5 10YR3/4, clay
Level 6 10YR3/6, micaceous clay loam subsoil

= stone
= brick

* one of the surface depressions that show on the site survey map is south of unit 3 and shows in the surface of the south wall profile above

0 1 2
feet

PLATE 10
Apartment 149, Long Row House



South view

contained machine made glass (1903-present), celluloid and wire nails as temporal markers, as well as other non-diagnostic glass and ceramics.

Group II consisted of fill zones that were not definitely associated with modern features. This group contained 20th century machine made glass and plastic, as well as 1916 and 1918 Lincoln Head pennies and a 1901 Indian Head penny. A token from the Wilmington & Philadelphia Transit company was present in Level 1 of the north wall at Pigeon Row House. In addition, a 1789 silver coin with "DEL .GRATIA .1789 .CAROLUS III* on the face and "R .M .F .F .HISPAN .ET IND ." on the reverse was found in Level 2 of Trench A+0.

Group III consisted of fill zones which could not be ascertained as belonging to one of the previous two groups. This group contained plastic, a 1944 Lincoln Head penny, a television knob and a toothpaste cap as evidence of 20th century contamination. A silver thimble was found in Level 2 of N335W88. A brass religious medal dated 1850 or 1880 was also found in this group, in the overburden at the west wall of Long Row House. This medal contained a representation of the Virgin Mary with the words "MARIE CONCUE SANS PECHE, PRIEZ POUR NOUS QUI AVONS RECOURS A VOUS" and a large M and a cross on the other face. The phrase roughly translates as "Mary conceived without sin, Pray for us who have recourse for you".

Group IV consisted of the plowzone and A horizon at the site. This group contained 20th century machine made glass, wire nails, a safety razor as well as a 1919 Lincoln Head penny and ceramics.

Group V consisted of the Ab horizons in N335W88 and in Trenches A and B. As stated previously, the Ab horizon found in N335W88 was associated with the railroad construction and dates to approximately 1900 or shortly thereafter. The Ab horizon found in Trenches A and B predates the railroad construction and does not contain 20th century contamination. A Mean Ceramic Date of 1830.90 was obtained for this horizon in both trenches. No machine made glass was present; all of the glass for which method of manufacture could be obtained was mold blown and therefore predates 1903. The majority of the artifacts (66.437%) are associated with South's kitchen group, with architectural items (29.71%) comprising the next largest group. In addition to ceramics, bottle glass and window glass, this group also contained cut nails, a brass button, slate pencil fragments, can or thin metal fragments, a whistle mouthpiece and miscellaneous metal hardware fragments.

Group VI consisted of the demolition fill overlying the concrete/linoleum floors which are believed to lie over the in situ deposits. This horizon also contained 20th century machine made glass in addition to a gold buckle and an 1895 Indian Head penny. The presence of 20th century materials in this horizon is not surprising as the structures were not demolished until the 1940's. This horizon also contained a much higher percentage of South's

Group 2 - Architectural Materials - as would be expected if this fill zone resulted from the demolition of the structures.

Group IX consisted of the crawlspace midden found in Levels 3 through 6 of Unit 3 in Apartment 149 in Long Row House. The crawlspace midden had a Mean Ceramic Date of 1836.3. None of the diagnostic glass from this midden was machine made, although some of the types such as pressed glass have date ranges which extend into the 20th century, i.e. 1827-present. Mold blown glass, which predates the snap case, or pre-1857, was found in this horizon as well. Early 20th century materials were found in Level 3 which contained 1897, 1901, 1903, 1905, and 1911 Lincoln Head pennies and a 1907 Barber nickel. Level 3 also contained ceramics, bottle glass, can fragments, a bone handle fragment, cutlery, cut and wire nails, lamp parts, numerous buttons and other clothing parts and miscellaneous metal hardware. Level 4 contained ceramics and bottle glass fragments as well as cut and wire nails. Level 5 contained ceramics and bottle glass, cut nails, can fragments, a brass straight pin, a brass knob and a brass jewelry fastener as well as a small plastic fragment. The plastic fragment is felt to be post excavation. Level 6 did not contain any diagnostics, only 2 bottle glass fragments and a single brick were recovered. All of the levels associated with the crawlspace midden in Unit 3 had a high percentage of architectural materials and a low percentage of ceramics relative to the rest of the site. Most of the architectural group items are window glass; only two bricks were found in this horizon. The percentage of items belonging to South's furniture group in the crawlspace midden at Unit 3 appears extremely high; however, almost all of the items in the count consist of lamp chimney glass which could be the result of breakage of a single lamp. If these were deleted from the total, the percentage would be closer to the ranges for the other portions of the site.

The Mean Ceramic Date for the site as a whole is 1826.94. Long Row House as a whole had a Mean Ceramic Date of 1822.2. A Mean Ceramic Date could not be calculated for Pigeon Row because of insufficient sample size. Apartment 149 had a Mean Ceramic date of 1836.3. Based on the documentary evidence, all of these dates predate the historically recorded occupation, something which is discussed in more detail below.

An examination of the ware type distribution as a whole, Long Row House, Pigeon Row House and Apartment 149 revealed the following. The site as a whole contained the following distributions: pearlware was the largest ceramic type - 2,058 sherds (33.10%), followed by whiteware - 1,871 (30.09%), coarse red earthenware - 1,354 (21.78%), creamware - 359 (5.77%), ironstone - 359 (5.77%) and porcelain - 110 (1.77%). The remaining ware types were stoneware (51), yellowware and other coarse earthenwares (75). At Long Row, pearlware was the major ceramic type represented with 1,744 sherd (40.89%), followed by whiteware - 1057 (24.78%), coarse red earthenware - 945 (22.16%), creamware - 335 (7.85%), and refined red earthenware - 46 (1.08%). Coarse

stoneware, refined stoneware, yellowware, ironstone, porcelain and other coarse earthenwares all comprised less than 1% of the total. Very few ceramics were recovered from Pigeon Row, only a single whiteware sherd and two coarse red earthenware sherds. Apartment 149 had the following breakdowns - whiteware - 23 (51.11%) pearlware - 16 (35.56%), coarse red earthenware - 5 (11.11%) and porcelain - 1 (2.22%).

As mentioned previously, the presence of so many early ceramics is surprising as the documentary evidence does not indicate an occupation at Long Row and Pigeon Row houses early enough to account for these. The earliest definite mention of occupation in these structures is in the rent books from the 1870's. Heirlooming is not an adequate explanation as the counts appear to be too high to be the result of this factor. However, some suggestion of earlier structures at the site are contained within the documentary evidence. As mentioned in the archival section, the 1849 Rea and Price map (Figure 9) shows some structures in this approximate location, as do the Lake and Beers map of 1860 (Figure 10) and the Beers map of 1868 (Figure 11). In addition, the Receiving Book for the Brandywine Manufacturers Sunday School has an entry for a James Benson, whose father is listed as residing in Beggars Row. Zebley (1940) states that Long Row was known as Beggars Row. However, it appears likely that the structures mentioned in the documents and shown on the maps prior to 1870 are not the same structures which were uncovered in the investigations reported here. In a letter dated October 1871, Henry duPont mentions that Beggars Row was torn down and replaced by a new block of "six good houses." It is probably these "six good houses" which are represented by the structural remains reported here. However, the possibility of earlier structures at the site does account for the earlier artifacts, although no archeological evidence such as structural remains was found in these investigations. It is also possible that the earlier artifacts may have come from the C.I.D. house, reported to have been built in 1823, or the Miller's house.

An examination of South's function groups at the site as a whole and at Long Row House, Pigeon Row House and Apartment 149 revealed the following percentage breakdowns. For the site as a whole, South's Group 1 (kitchen) had the largest representation - 10,053 (54.36%), followed by Group 2 (architectural) - 7,452 (40.30%), Group 3 (furniture) - 237 (1.28%), Group 4 (arms) - 16 (.09%), Group 5 (clothing) - 191 (1.03%), Group 6 (personal) - 65 (.35%), Group 7 (tobacco pipes) - 165 (.89%) and Group 8 (activities) - 313 (1.69%). Long Row House had roughly similar percentages: Group 1 - 5,273 (52.29%), Group 2 - 4,205 (41.70%), Group 3 - 189 (1.87%), Group 4 - 5 (.05%), Group 5 - 101 (1.00%), Group 6 - 37 (.37%), Group 7 - 138 (1.37%), and Group 8 - 136 (1.35%). Pigeon Row House only contained items from the first two groups and they break down as follows - Group 1 - 20 (47.62%) and Group 2 - 42 (67.74%). Apartment 149 had a significantly smaller percentage of Group 1 items - 162 (17.31%) with a corresponding increase in Group 2 items - 518 (55.34%). The remaining groups

contained the following counts - Group 3 - 134 (14.32%), Group 4 - 2 (.21%), Group 5 - 52 (5.56%), Group 6 - 13 (1.39%), Group 7 - 2 (.21%) and Group 8 - 53 (5.66%). Plates 11 and 12 show artifacts from the Row Houses.

Summary and Conclusions

The archival investigations revealed a chain of title for the parcel which dates back until the mid 18th century. This portion of the Brandywine had been used for industrial purposes since this time, beginning with the saw mill established by Few in 1749, which would have been located downstream from the Row Houses. This mill was converted by Gilpin to a cotton mill in 1813 and a larger mill was built adjacent to it. The larger textile mill was called Brecks Mill and it is still standing today. Although tenement houses were listed for the area in 1815, it is likely that these were located on Brecks Lane, farther downstream. The first evidence for structures in the location of the Row Houses was on the Rea and Price map of 1849. The Lake and Beers map of 1860, the Beers map of 1868 and subsequent maps also show structures in this location. The earliest mention of a structure in the documents is in the 1861 Receiving Book for the Brandywine Manufacturers Sunday School. In this, James Benson, whose father was a blacksmith, is listed as living at Long Row (which was also known as Beggars Row). The 1865 Sunday School records also show children as living in this location. However, based on a letter from Henry duPont in October of 1871, it appears as if the structures shown on the earlier maps and mentioned in the 1861 and 1865 Sunday School records were torn down and new structures built in the same approximate location, although evidence for the earlier structures was not found in the excavations reported here. In the 1870's, Long Row and Pigeon Row are mentioned in the Dupont Company rent books and, presumably, the structures mentioned here are the one which had been rebuilt in this location. The 1870's documents also name the specific residents of the row houses.

The extended Phase I excavations at the Long Row House revealed entrance breaks and interior wall imprints which would make the isolation of individual apartments possible. In addition, controlled excavations conducted in portions of the exterior of Long Row House revealed fence lines and concrete privies. Although the fence lines may help to isolate discrete deposits associated with individual apartment units, it is doubtful that the concrete privies will provide information about the earlier occupants at the site, as they were used until relatively recently when modern plumbing was installed and they were cleaned out frequently. The possibility for in situ deposits is also good as Apartment 149 appears to contain sealed deposits in the crawlspace and a half or partial cellar which would provide a good, sealed context. There is excellent potential for sealed deposits at Apartments 151 and 152; in addition an earlier floor appears to be present beneath the concrete/linoleum which is now covered with demolition fill.

PLATE 11
Row House Site Artifacts

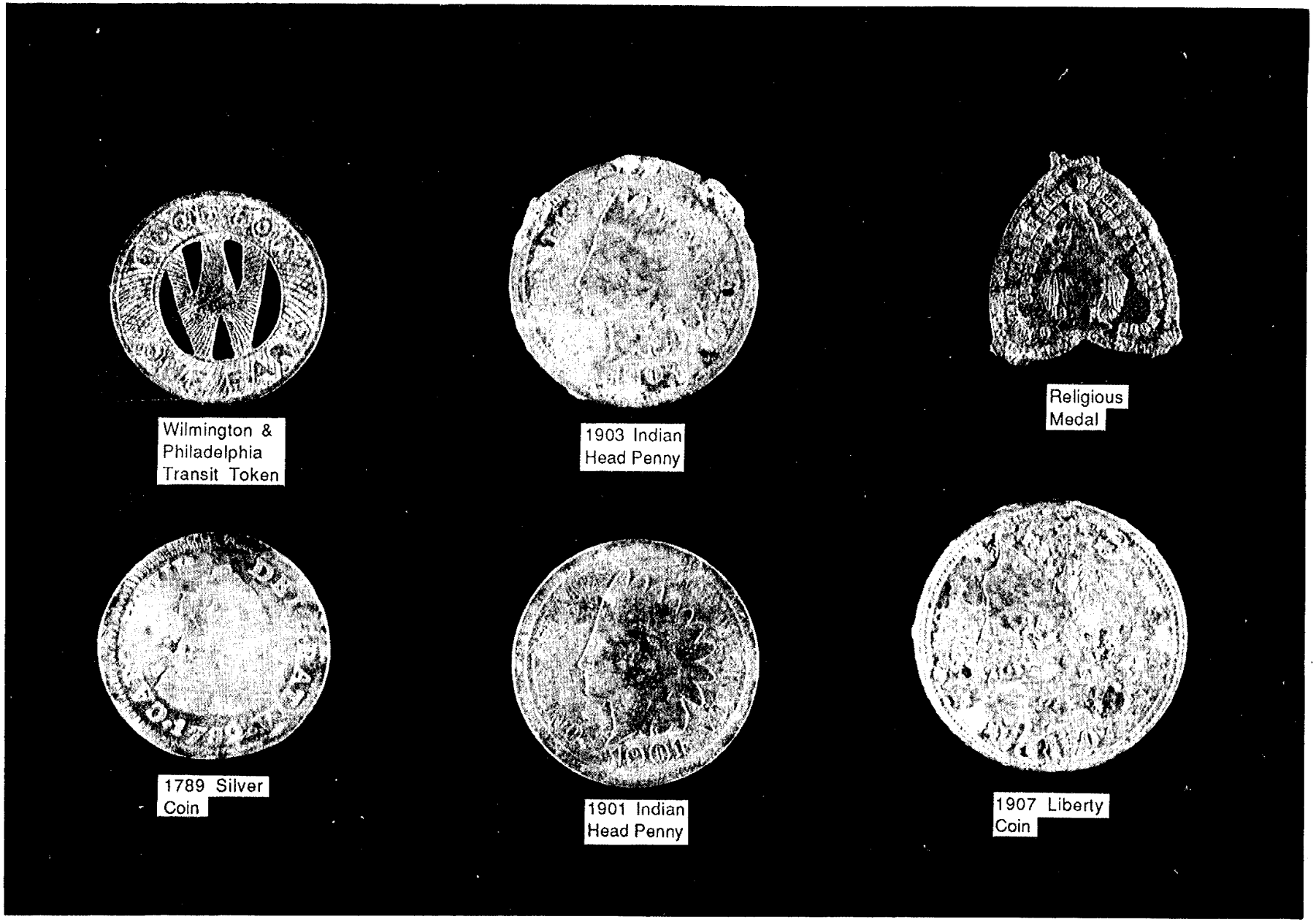
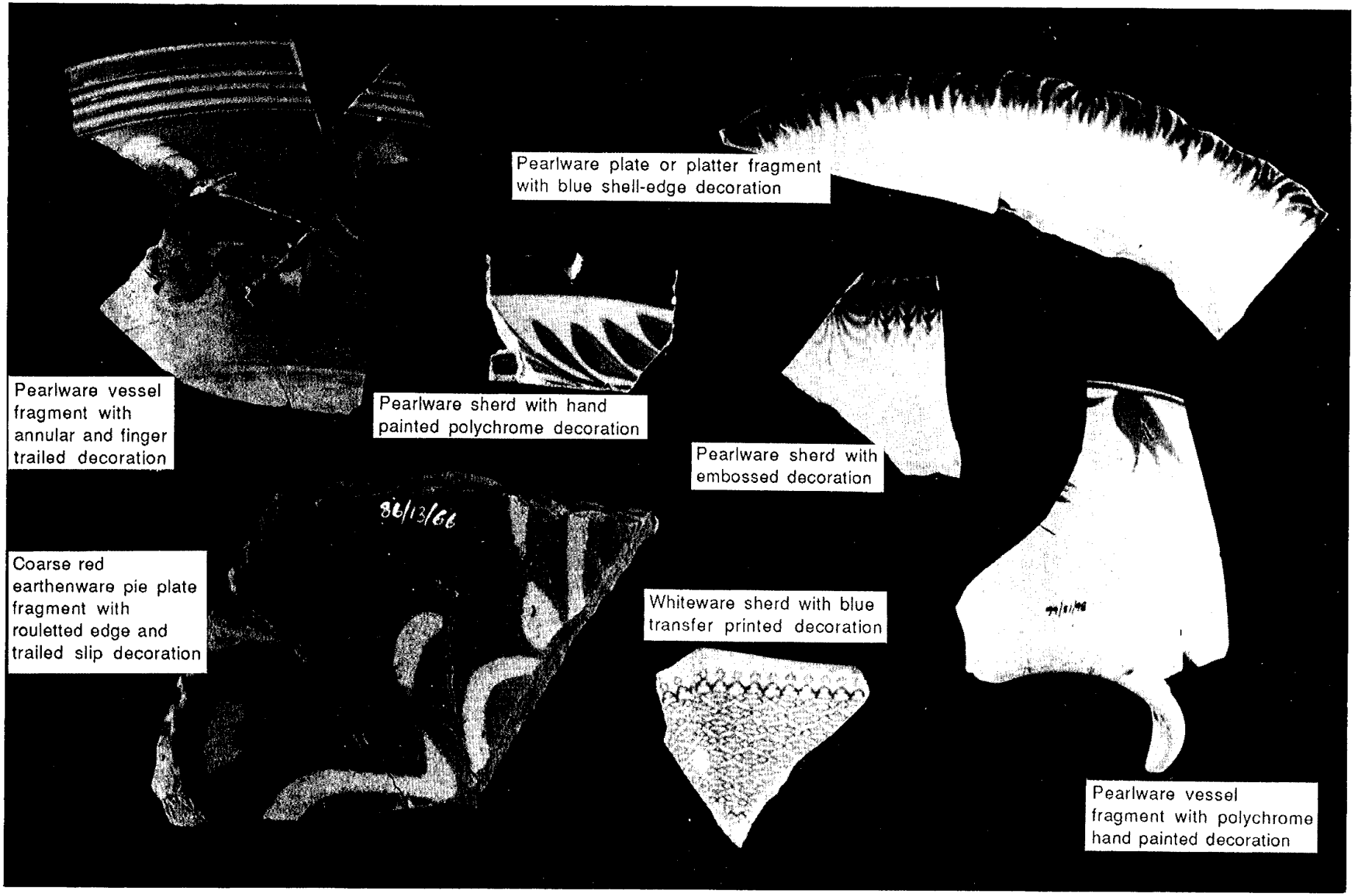


PLATE 12
Row House Site Artifacts



Although the isolation of individual apartment units at Pigeon Row was not possible during the extended Phase I, during which only two walls were exposed, excavation of the rear wall of the structure, which may be less disturbed, should provide a delineation of the individual family units.

In addition, the Ab horizon in Trenches A and B does not appear to be contaminated and, although it will not provide specific information about individual occupants, should provide general information about the occupants of the row houses.

Additional intact contexts are present in Feature 6, a well sealed with a concrete cap. This well was not excavated during the Phase II investigations. Like the Ab horizon, it has the potential to provide general information concerning the occupants of the Row Houses.

Recommendations

In our opinion, additional archeological work should be conducted at the Row Houses to provide data concerning early industrial workers along the Brandywine. This additional work should be directed toward gathering information about the individual apartment units. Good document evidence exists which would allow for a precise determination of the individual occupants of the units within the row houses and detailed economic profiles of the residents, as well as their lifeways, and statements concerning ethnicity are possible.

1. Except for information referenced to "Warrants and Surveys", the property history prior to 1786 has been taken from the deed F2:421, New Castle County Property Records. Book and page number references to earlier deeds are given in that document, but the records themselves have been lost.

2. The original mill was probably the mill building referred to as "Rokeby Mill". This building was used as the original DuPont experiment station, and it burned in 1906 (Webster 1970).

3. Here and in the following discussion of company records it should be remembered that the Eleutherian Mills-Hagley Foundation Library archives contain literally millions of items pertaining to the company history and that of the DuPont family. Some of this material is well indexed and some is not, but clearly an exhaustive search of all documents on a particular topic was not feasible, and the general index and finding aid prepared by Riggs (1970), supplemented by the irreplaceable advice of the experienced researchers on the staff at the Eleutherian Mills-Hagley Foundation, determined the scope of each search.

SEGMENT 4

Segment 4 (Figures 2, 7 and 28) is located along the east bank of Brandywine Creek and begins 450 feet south of the present Route