by South in his table, a more general category called "General Pearlware was added. This was used for artifacts on which the decorative element was too incomplete to allow specific assignment into one of South's types or which the decorative element was not included by South, such as sponged. The entire date range for all of South's pearlware types was used to date this type, i.e. 1780-1890, on the premise that it could date anywhere within this range. Variables 18 and 19 were used to code directly for the dates for South's types unless more specific dating information such as a maker's mark was present. Variable 20 was used to code for the presence or absence of the ceramic manufacturer's mark, the specifics of which were noted in the margin. The sherd counts (Variable 21) and the vessel counts (Variable 22) were coded as they were for glass.

In the Grant Tenancy ceramic analysis, Variable 23 consisted of Econscale Type. The Econscale types are numbers which are arbitrarily assigned to specific ware types and decorative types based on their cost to the consumer when purchased, following Miller (1980). These were coded directly for the Grant Tenancy project because a major portion of the research design was to analyze the various economic aspects of the site. The analytical process is described in more detail under the Results of the Excavations section.

RESULTS OF THE INVESTIGATIONS

Archival

The following presents the results of the archival research undertaken during the investigations. The field in which the Grant Tenancy site is located is part of a large holding in which the main structure was in the vicinity of a house presently occupied by Mrs. A. L. Downs. A number of different names are present for this structure on historic maps. On the Rea and Price Map of 1849 (Figure 7), the structure is labeled "W. Tatnall". The deed research for the previous investigations was terminated with the sale of the property by Henry Grant to John Peoples in 1866 (Deed Book H8, page 142, New Castle County records). This is undoubtedly the "H. Grant" whose name appears on the property on the Lake and Beers "Map of the Vicinity of Philadelphia and Wilmington", published in 1860. (Figure 8) This is the only map which shows a structure in the immediate vicinity of the Grant Tenancy site. "H. Grant" is also shown next to two houses on the same map that are at or near the locations of the two large houses that are still standing on the property. The relatively limited appearance of the structure on maps, along with its association (by the name "H. Grant") with two large structures on a sizeable plantation suggested the hypothesis that it was a dependency, probably a tenancy.

Subsequent property research, however, revealed a rather complicated pattern of shifting property lines across the site location, and suggested some additional hypotheses about site function. Figure 9 presents a chain of title for the property.

FIGURE 7

Rea and Price Map of 1849

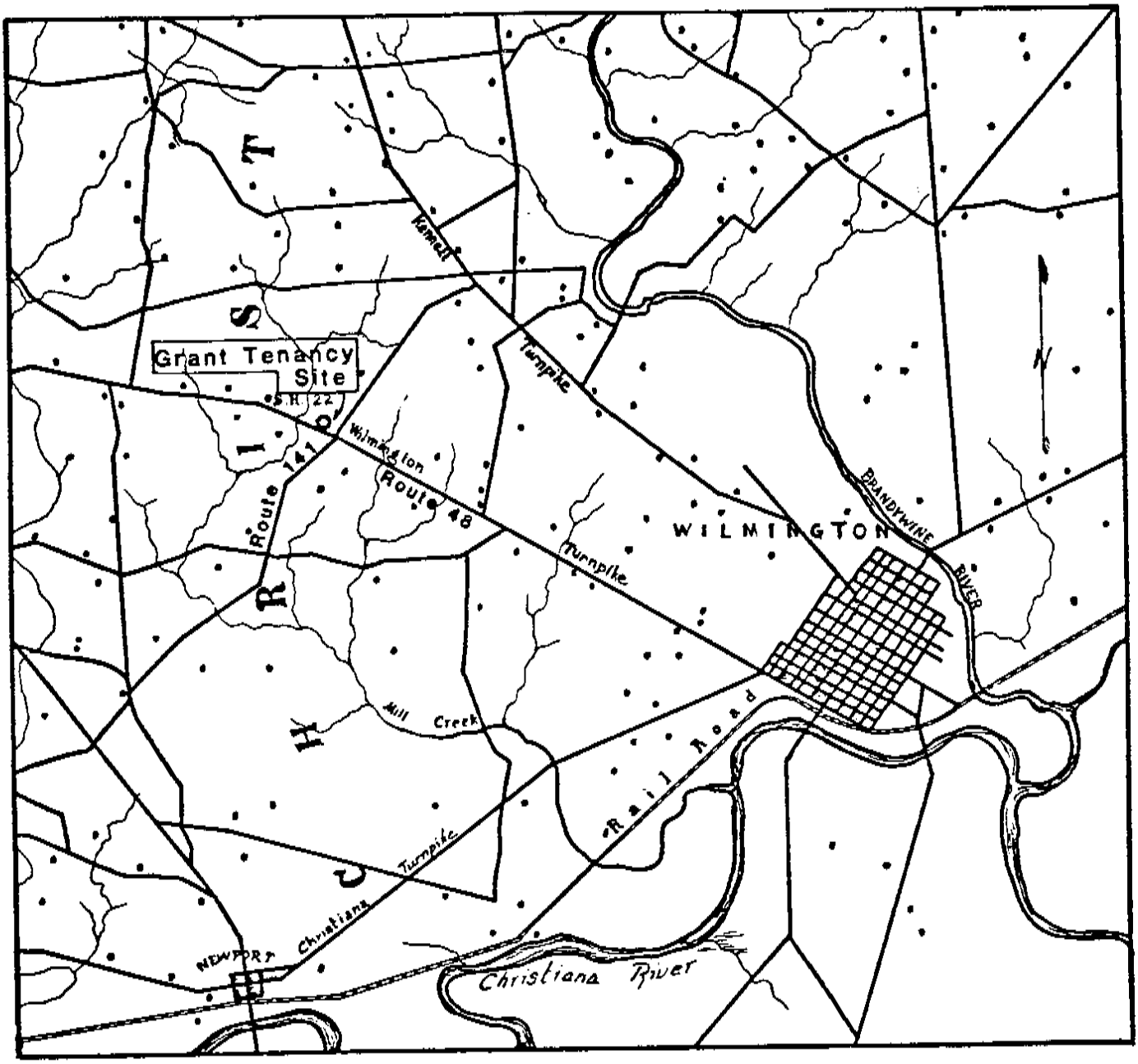


FIGURE 8

LAKE AND BEERS 1860

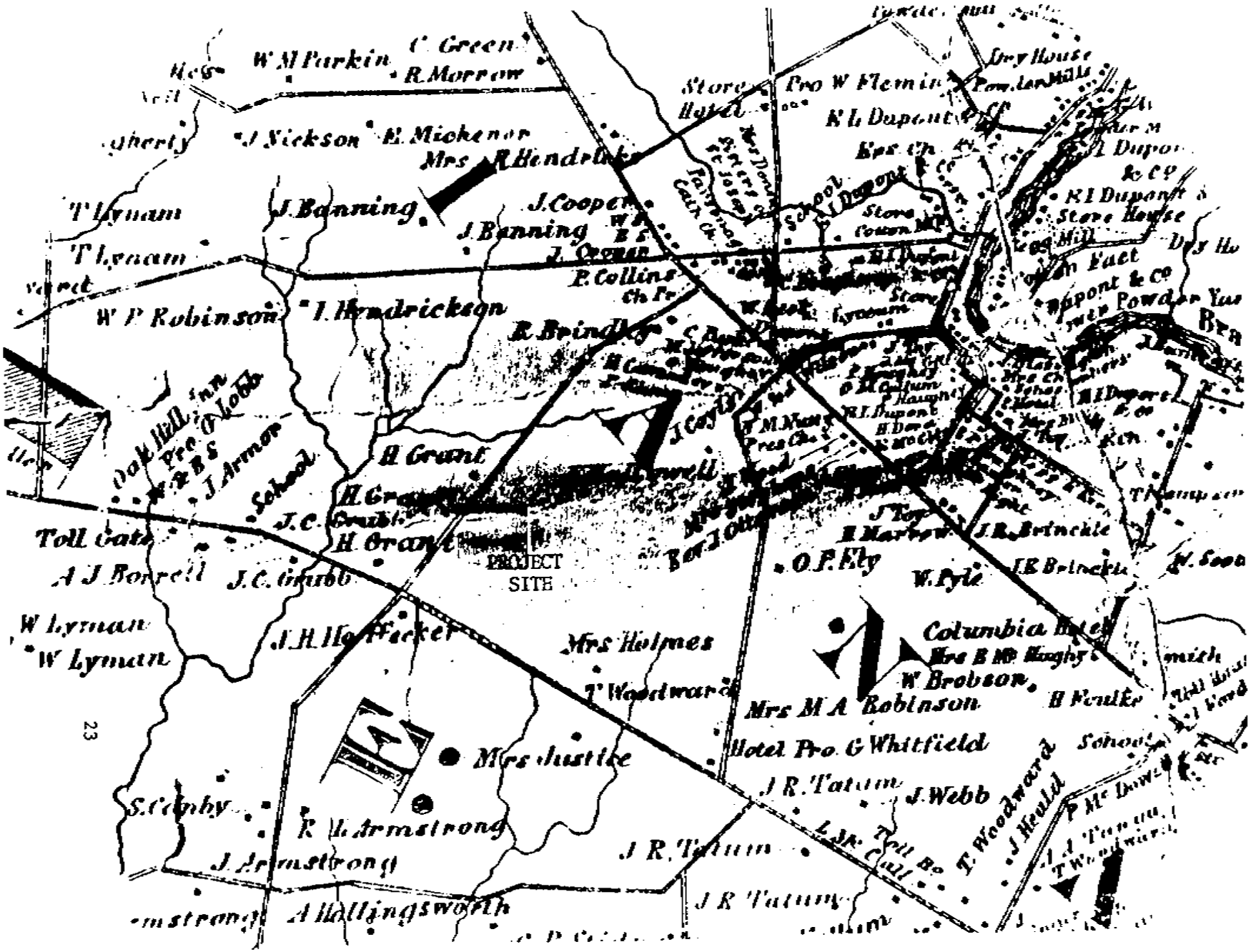


Figure 9: Property Ownership, Grant Tenancy Site

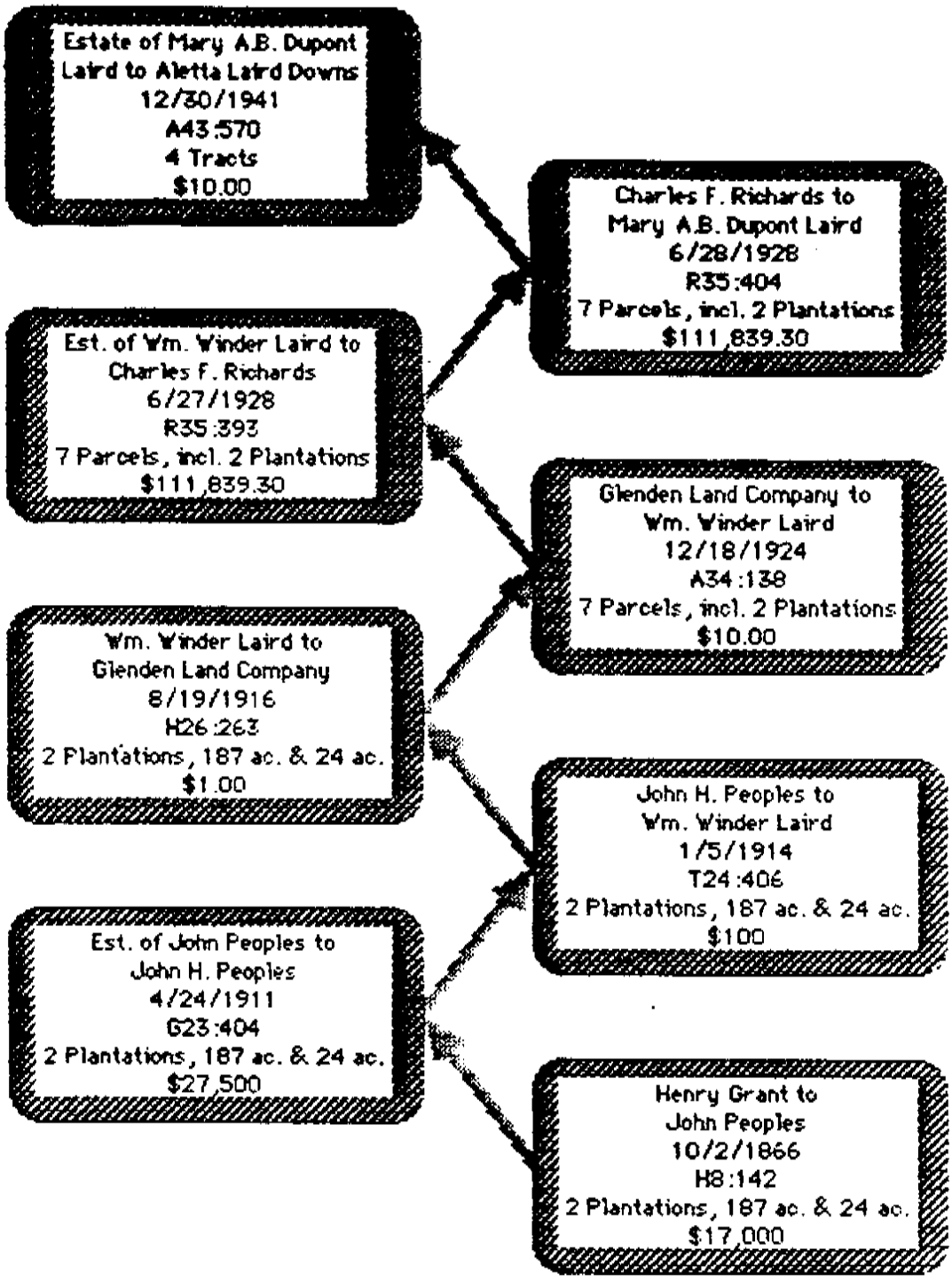


Figure 9, continued

Plantation "No. 1", Grant to Peoples, HB:142

Edward Tatnall, Brandywine Hundred transferred 187 ac, 2 roods, 32 perches to Henry Grant, Philadelphia in 1852 (L6:204). Tatnall acquired this tract through five deeds: The first of these may contain the excavated site.

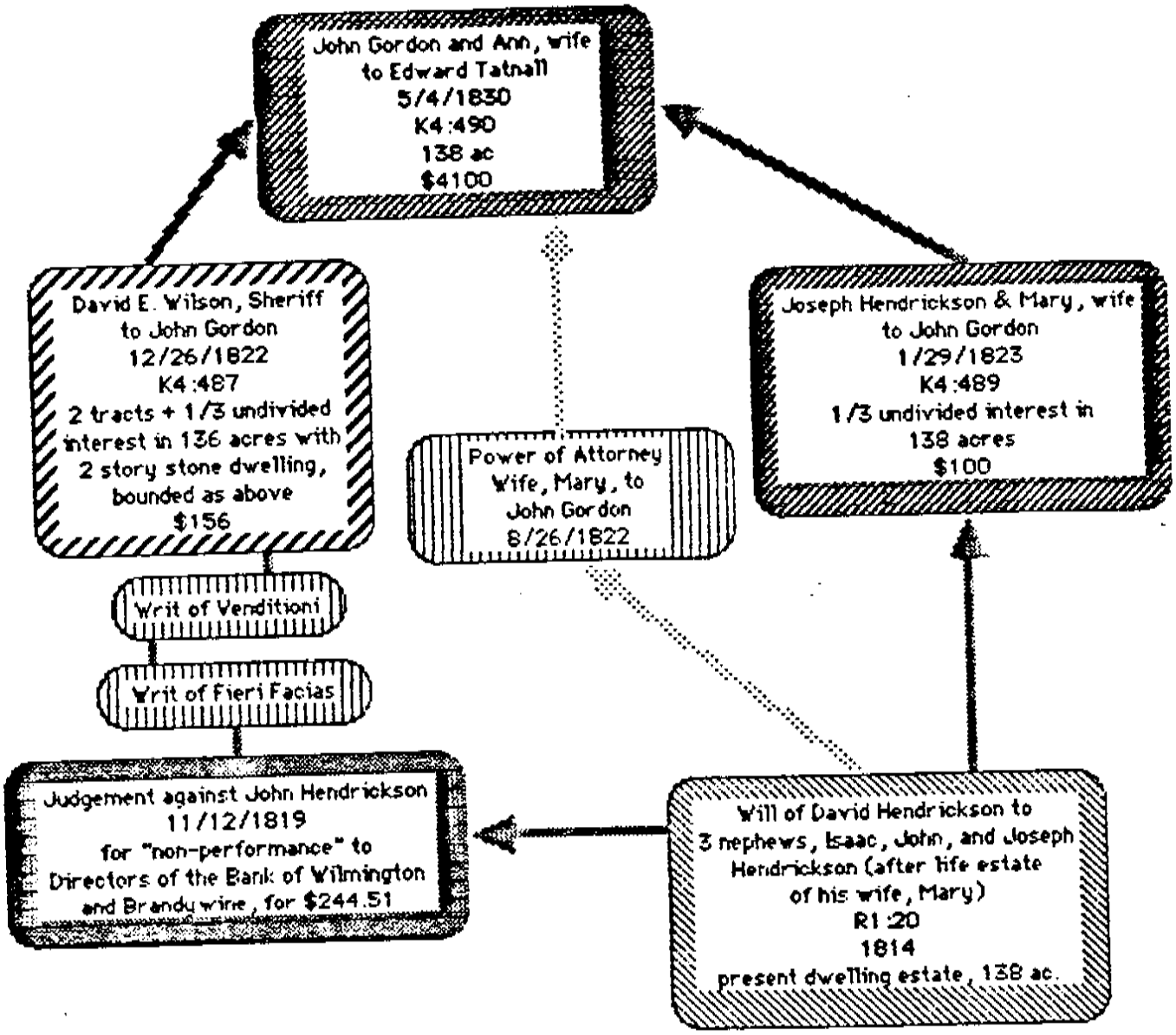


Figure 9, continued

Second Plantation, "Templle Tract", Grant to Peoples, H6:142

Samuel Grant, Philadelphia, transferred 24 acres, 70 perches to Henry Grant, Wilmington, in 1864 (Y7:251). If Plantation "No. 1" does not contain the excavated site, it may be on this property.

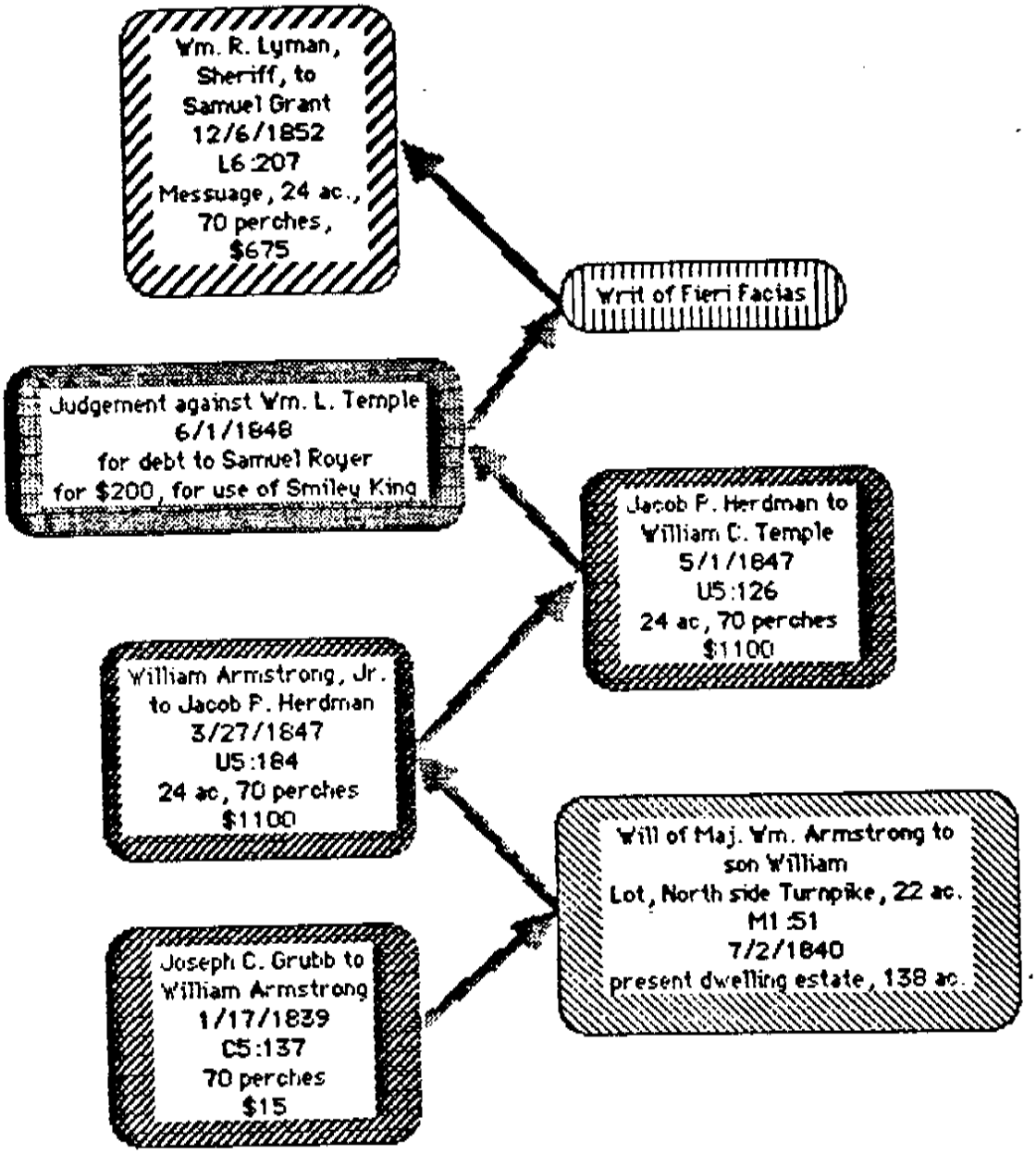
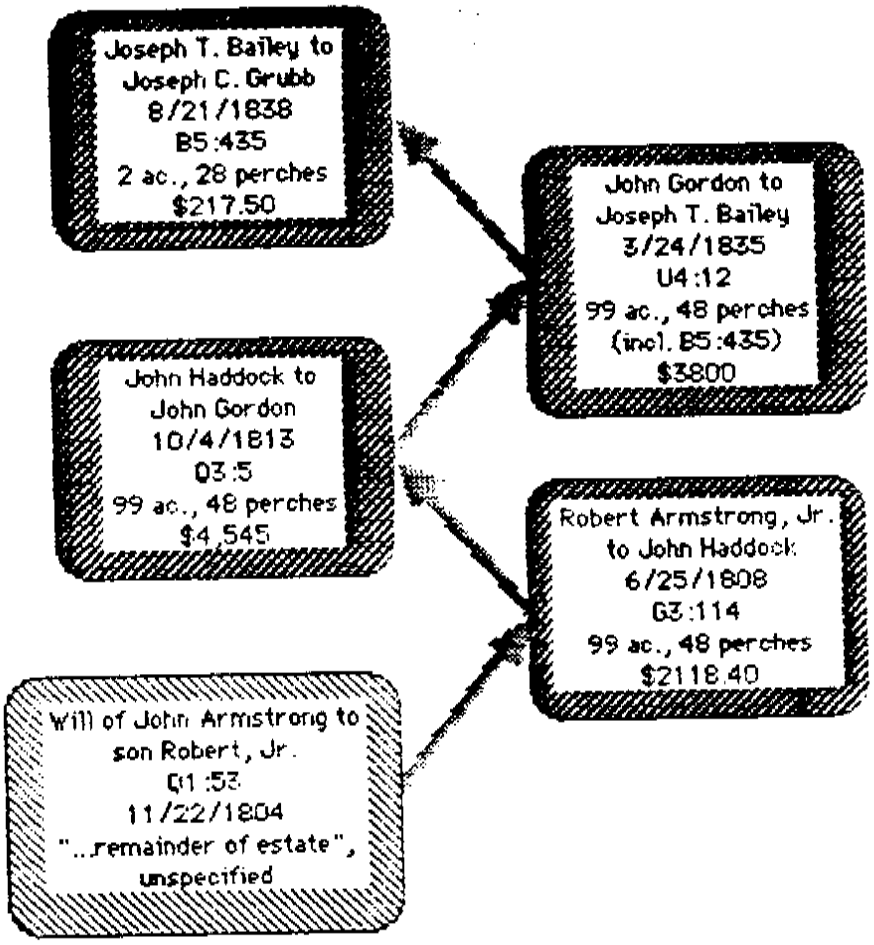


Figure 9, continued

Second Plantation, "Temple Tract", Grubb to Armstrong, C5:137

Joseph Grubb transferred a 70 perch lot which separated the southern boundary of Armstrong's 24 acre tract from the Wilmington and Lancaster Turnpike, because of the change in alignment of that road. This 70 perch lot had orignally been part of a 2 acre, 28 perch lot acquired by Grubb to bring his line east to Centre Road.



After 1866, the site location appears to remain with the tract identified as the one transferred from Grant to Peoples (H8:142). That plantation, as well as another immediately to the northwest, passed to John H. Peoples in 1911. John Peoples had died in 1892 and the property had been held in trust for 10 years under the terms of his will. John H. Peoples, presumably his son, purchased the land from the trustees (G23:404). In 1914, he sold it to William Winder Laird (T24:406). The subsequent history of the property involves the transfer of the property among a number of his heirs and a holding company until it was acquired by the present owner, Aletta Laird Downs in 1941 (A43:570; Figure 10).

The Grant-to-Peoples deed (H8:142) mentions an earlier transfer from Tatnall to Grant and, from this point backwards in time, the picture is complicated by the fact that the site location sits at the corner of several different pieces of property. The margin of error in the metes and bounds given in fractions of a degree and fractions of perches, rather than minutes and seconds and fractions of feet, is such that at any particular time the site location might be on any one of three or four different tracts. An attempt will be made to provide an intelligible summary of the possibilities, without going into enormous detail. From the Grant-to-Peoples transfer forward in time, two plantations along the Lancaster Pike (in some cases, other property elsewhere as well) are mentioned. For ease of reference, these will be referred to as "No. 1" and the "Temple Tract". These are indicated on Figure 11, and before proceeding further it will be desirable to discuss that diagram.

The diagram was created by plotting separately the metes and bounds of several of the properties encountered in the deed search, and then sliding them around until the best fit was achieved. The various over-and-under-laps of property lines suggest the variations in nineteenth century survey accuracy as well as changes in magnetic declination, which was the standard alignment reference in the nineteenth century. Seven separate tracts are shown in Figure 11, each with a separate history which may or may not include the archeological site excavated as the "Grant Tenancy". A 165 foot (10 perch) circle of error around the position of the archeological site was plotted. The position of the site was plotted with reference to the intersection of the Centre Road and the Lancaster Pike as indicated by the metes and bounds of the 1940 deed to Aletta Laird Downs, which is also shown on Figure 11. The excavated features were surveyed to this position in the field. The positions of the nineteenth century properties are estimated against each other and the former twentieth century plot, as described above. The various property boundaries are shown on Figure 11, and it is impossible to obtain a perfect alignment of the corners in the neighborhood of the site. The circle of potential location error is probably considerably greater than shown, but even with an optimistic assumption of precision about the location of the site with relation to the various properties, it may have been located on any one of six different tracts. An additional complicating factor is the fact that two different roads are given as bounds

Figure 10 1940 PARCEL BOUNDARIES

Deed A43:570 -

12/30/1940, Wilmington Trust Company, executors of the estate of Mary A.B. Dupont Laird, etc., to Alette Laird Downs of Christiana Hundred, Tract 1, 135.91 acres.

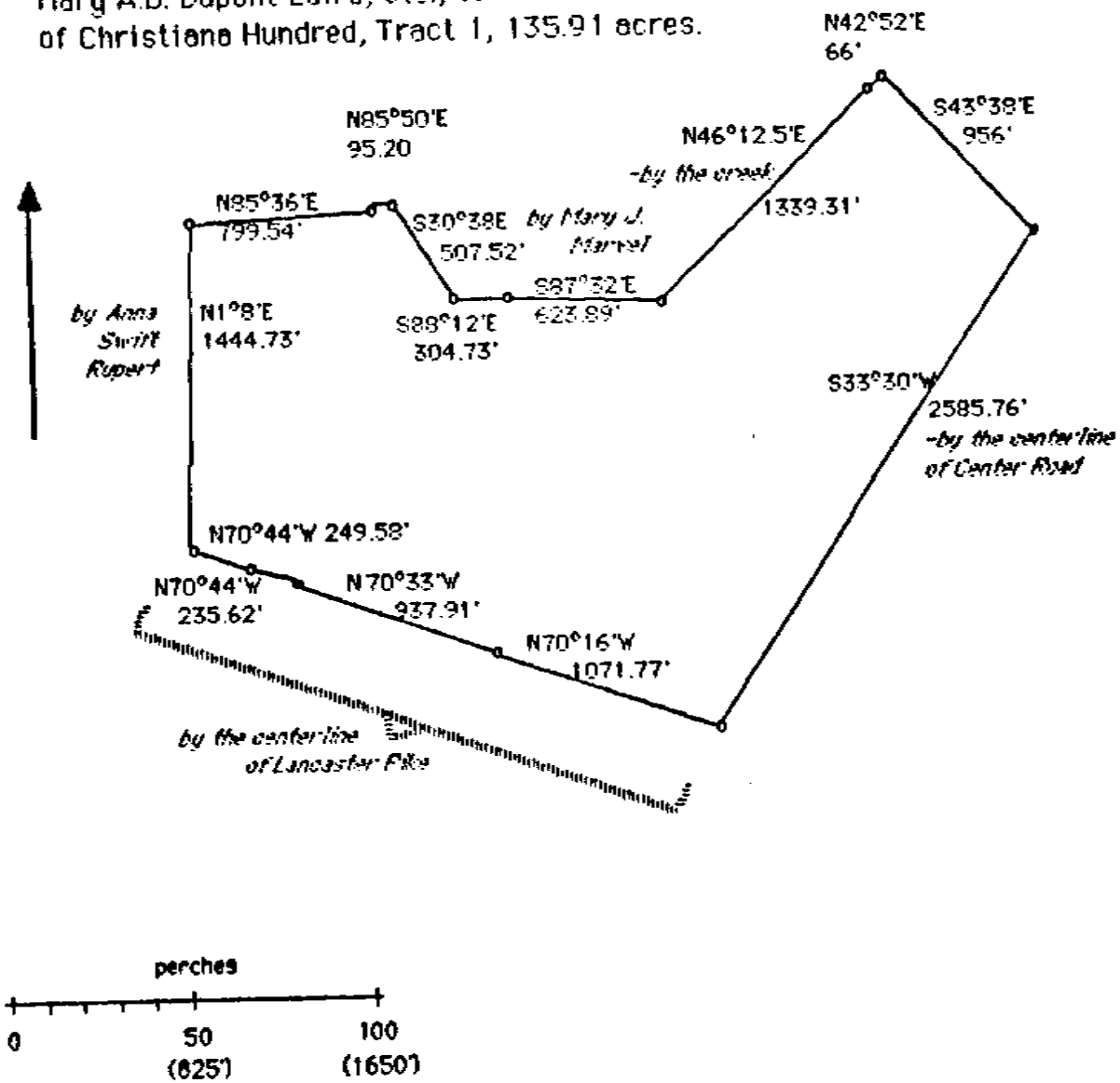
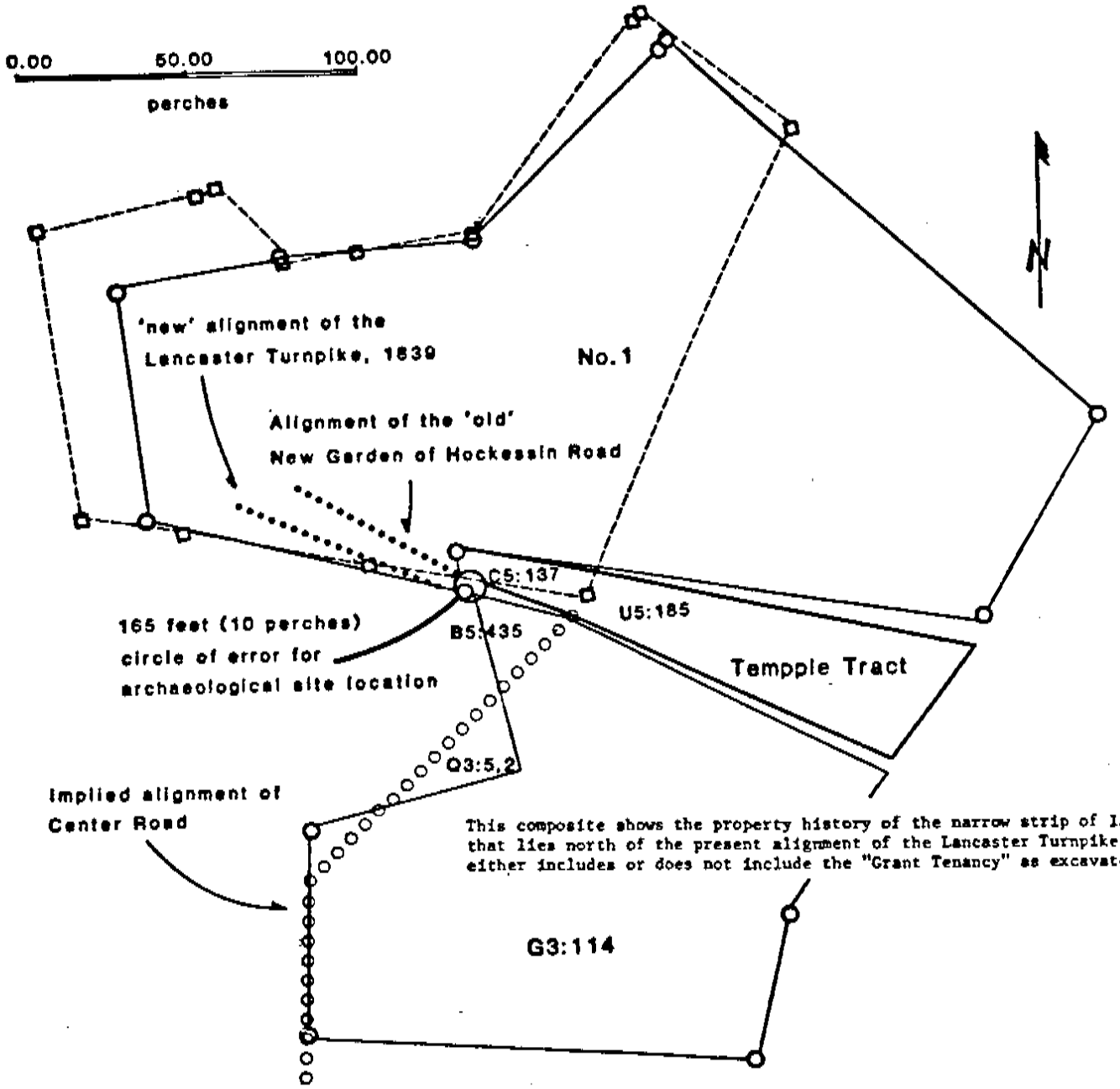


FIGURE 11

Property Boundaries, Composite



This composite shows the property history of the narrow strip of land that lies north of the present alignment of the Lancaster Turnpike and either includes or does not include the "Grant Tenancy" as excavated.

□ corners of A43:570, 1940, Wilmington Trust to Aletta Lawd Downs contemporary property lines, for reference

○ corners of L6:204, 1852, Tatnall to Grant

Grant Tenancy, L6:204, 7/1/1852, Edward Tutnall to Henry Grant, 187 ac. 2 rods 32 perches, this tract assembled by 5 other deeds to Tatnall. This is identical to Plantations No. 1 in R35:404 and Plantation No. 2 is shown here at the southeast corner of the plat. The larger overlay is plotted from A43:570- the eastern boundary of this tract is the center line of Center Road and its southeast corner is the intersection of the centerlines of Center Road and the Lancaster Pike.

for various tracts, and the change in location for one of these, the Lancaster Turnpike (and its predecessor, the "Hockessin Road") can be documented from the deeds themselves, and it is possible that the Center Road also changed position during the critical period of the deed research. This is another reason why the boundary fits along the roads do not always appear to align.

The other documentary sources investigated, including agricultural census, tax records, and others, failed to provide a positive association of a property, or owner identified in the deed research, with a structure that might have been located in the position of the excavated site, so we are left with the 1860 map (Lake and Beers) as the only evidence for an identified structure in the vicinity of the site. Since that indicated an association with "H. Grant", our research emphasized the properties traceable backwards and forwards to him. The most recent property shown on Figure 11 is the tract transferred from Wilmington Trust to Aletta Laird Downs in 1940. A modern survey had been completed for the boundaries of this property, so the boundaries are quite accurate with relationship to each other. Their relationship to the less precisely surveyed metes and bounds of the nineteenth century property is not necessarily reliable, except at a gross level. Since the site is located at or near the boundary between the two tracts transferred forward from Henry Grant (No. 1 and the Temple Tract, mentioned above) the discussion will focus on those.

Henry Grant had received "No. 1" Plantation from Edward Tatnall on the first of July in 1852 (L6:204). The deed indicated that Tatnall was a resident of Brandywine Hundred, and Grant resided in Philadelphia. Tatnall had assembled that plantation from five separate pieces of property between 1830 and 1851. The first tract mentioned is 138 acres and may include the excavated site. John Gordon acquired this plantation by assembling three undivided portions of the dwelling plantation of David Hendrickson, whose will (Will book R, page 20:1814) describes him as a farmer of Christiana Hundred. Gordon was a resident of Wilmington, and various tax assessments indicate that he owned property throughout New Castle County, presumably for purposes of rental and speculation. The land was designated by Hendrickson for his three nephews, Isaac, John, and Joseph, but no evidence was located that reveals whether or not any of them ever lived on it. No evidence could be found in the property or probate records concerning how or when David Hendrickson acquired this tract. The tract was sold by Gordon to Edward Tatnall in May of 1830 (K4:490), and was described in the deed as a "Messuage or tennement" which means that the property contained a dwelling. Since this deed also describes Tatnall's residence as Brandywine Hundred, it is unlikely that he lived on the property during his period of ownership.

If the site were not located on the tract described above, it may have been on the tract labelled "Temple Tract" on Figure 11. Henry Grant had acquired this property from Samuel Grant in September of 1864 (Y7:251). The deed describes Samuel Grant's

residence is Philadelphia, but Henry Grant appears to have moved to Wilmington by this time. The tract is described as containing 24 acres, 70 perches, and Samuel Grant had acquired it at a Sheriff's Sale in December of 1852 (L6:207). William L. Temple had defaulted on a debt to Samuel Royer, and Royer had obtained a judgement against this property, which is described as a "message", implying that it contained a dwelling. Various records in the Superior Court Books (originals in the Delaware Hall of Records) indicate that Temple himself had brought actions against others after Royer's action was brought in 1848, suggesting that Temple may have been in financial straits. Royer's suit requested a judgment for the "use of Smiley King", a fact mentioned in the Sheriff's deed, but the identity and significance of this individual could not be determined.

Temple had acquired the 24 acre, 70 perch tract only a year before Royer's suit, from Jacob P. Herdman, "Merchant of Wilmington" (V5:156; May 1, 1847). Temple is described in this deed as a mason of Mill Creek Hundred, so it is unlikely that he ever resided on the property. Two months prior to this sale, Herdman had acquired the property from William Armstrong, Jr., of Christiana Hundred for the same price he received from Temple: $1100 (V5:184; March 27, 1847). Armstrong had received this land from his father's will of 1840 (Will Book M, page 51), and that document separately disposes of the plantation "whereon I now reside", indicating that he did <u>not</u> live on the Temple Tract. In that document the Temple Tract is described as "that lot on the north side of Wilmington & Lancaster Turnpike" that contained 22 acres, plus or minus. It could not be determined where William Armstrong, Sr. acquired the majority of this property, but a small section of it, probably not coincidentally 70 perches, did have an identifiable history. Since this small lot, labelled C5:137 on Figure 11, would be the portion that might contain the excavated site, its history was pursued.

Armstrong had acquired this lot from Joseph C. Grubb, who owned the plantation on the south side of the Turnpike, in January of 1839 (C5:137). The price was only $15.00 which doesn't suggest that it was much improved. The lot was part of a larger parcel which Grubb had obtained the previous year from Joseph T. Baily, and the boundaries given for the smaller lot indicate the reason for the sale. The northern boundary of the 70 perch tract is given as the "Old Road between Wilmington and Hockessin" and the southern boundary is given as "the middle of the turnpike road". On Figure 11, these two alignments are extended as dotted arrows. It is reasonable to assume that the old road had not been used since the establishment of the Turnpike after 1811. It was still given as the southern boundary of the Temple tract in this location, however, so this transfer merely extends that property south to the road that was currently in use, and eliminates the small sliver of land owned by the Grubb, whose major land holding extended along the south side of the Turnpike.

The transfer of the larger parcel on the south side of the

The transfer of the larger parcel on the south side of the Lancaster Turnpike from Baily to Grubb (B5-435; August 21, 1838) appears to be an example of a similar realignment of property lines with reference to the Centre Road. This two acre parcel was originally acquired by Baily as part of a larger tract, labelled G3:114 on Figure 11, which straddled the Centre Road, so with this deed, the property on the west side of Centre Road was consolidated and separated from that on the east side.

That the 70 perch lot was included as part of G3:114 in its previous history is confirmed by the deed in which Baily acquires the latter tract. That deed is from John Gordon, of Wilmington, to Baily, whose residence is given as Christiana Hundred, and the northern boundary of this 99 acre tract is given as the "middle of the New Garden and Wilmington Road" (V4:12; March 24, 1835). The last named road is assumed to be equivalent to the Hockessin Road. Also transferred is a similar triangular parcel to the south (labelled Q3:5 on Figure 11) which represents a previous consolidation of property on the east side of Centre Road. The 99 acre, 48 perch tract, which included the parcel marked B5:435 on Figure 11, had been acquired by Gordon in 1813 from John Haddock, a farmer of Christiana Hundred. Since we know that Gordon continued to reside in Wilmington during this period, this farm must have been rented, or unoccupied. In the absence of any other evidence, it seems likely that the principal residence for this tract would have been located at or near the location of the structure marked "J.M. Hoffecker" on the Rea and Price Map (1849, Figure 7). This is the only structure location ever mapped within the property boundaries plotted as "G3:114" on Figure 11. If the excavated site was located within these boundaries, it would have been at the extreme northwest corner of the property on the Turnpike Road, during a period when "Manor Houses" were more commonly located near the center of a property and away from the roads.

John Haddock had acquired G3:114 in 1808 from Robert Armstrong, Jr., a farmer of Christiana Hundred. Haddock is described as a farmer of the Northern Liberties in the City of Philadelphia, and it seems likely that, since he is listed as resident of Christiana Hundred when he sells it in 1813 that he moved from Philadelphia to occupy this tract. Robert Armstrong Jr., on the other hand, inherits his interest in the property, and, since the boundaries include a new line which separates this tract from the remainder of his property it is likely that he resides there on the south side of this tract, or elsewhere. Various Armstrongs own property from this area south, and the earlier history of this tract was not pursued.

While this provides the ownership history for the properties most likely to contain the excavated site, it adds little additional basis for deciding which of these histories is pertinent to the site, and how the issue of site function might be resolved. A few additional observations might be made, however. The position of the building adjacent to the road was not typical of the residence of a major property owner, as was

previously observed. Although small lots (70 perches, two acres) appear briefly in the property histories recited above, it is fairly clear that these represent the adjustment of property holdings to the road network, rather than the creation of small residential lots, so it seems likely that the excavated site was always a rented or leased residence. Whether or not the tenant was engaged in agricultural activity is another matter, and one of particular interest since one of the research goals was to help clarify the relationship of this occupation (tenant farmer) to the artifact assemblage. Because of the location of the site near the intersection of Centre Road with Lancaster Pike, the possibility that the site represented a Toll House was raised. Also, there was some question as to why the Turnpike did not just follow the alignment of the older Hockessin road, rather than following a new alignment, as indicated by the boundaries of the 70 perch lot (C5:137 on Figure 11).

With these questions in mind, research into the Wilmington and Lancaster Turnpike was carried out. Because the economic ties of each colony had been external, following the mercantile system toward England, internal transportation networks had not been developed. As the economic integration of the various parts of the United States developed the need for better transportation arteries was perceived, but political bickering hindered government action. The need was strong and private capital was put forth to address it, specifically for building toll roads, or turnpikes (Heilbroner 1977:29-31). By the 1790's, the toll road from Lancaster to Philadelphia had been completed, and its success stimulated similar ventures. Farmers in southern Lancaster and western Chester counties sought outlets for their produce (Lindstrom 1978:100), and a toll road in Pennsylvania from Gap, on the Lancaster Turnpike, toward Newport was authorized by the Pennsylvania legislature in April of 1807. The Delaware Legislature responded by authorizing a corporation to build the section from the Pennsylvania Line to Newport (Enrolled Bills 1808-1810, Accessioned Legislative papers, originals on Microfile, Delaware Hall of Records).

The lengthy introductory material for the authorization bill emphasizes the bad condition of the existing public roads and the needs of the farmers to transport their produce, while Lindstrom suggests that the transport of low-volume high-value market goods from the regional centers to the interior was a more important factor (Lindstrom 1978:100). The fact that a petition for the building of a branch turnpike from Wilmington to the Newport-to-Gap Turnpike was granted by the legislature in 1808 tends to support the notion that the influence of merchants, more numerous in that city, was important. This branch is the "Lancaster Pike", Route 48, which runs past the Grant Tenancy. The Delaware bills authorizing the construction of turnpikes were basically copied from the Pennsylvania law with minor exceptions. Right of eminent domain and materials are granted to these private corporations, and the form of the road is specified: not more than 100 feet in width, with a twenty foot width improved by bedded wood, stone, clay, gravel or other proper and convenient

material, well packed and crowned in the middle for drainage. Provision is made for selecting the straightest route, and this is probably the explanation for the shift in alignment reflected in the deeds described above. A local variation for the Wilmington Branch is that toll houses are authorized every two miles, instead of the five mile interval specified for the original road.

The original manuscripts of the Minutes of the Wilmington Turnpike company were examined at the library of the Delaware Historical Society and some entries pertaining to the study area were noted. In March of 1812, a committee inspected a portion of the road "undertaken by John Haddock" and declared that they were satisfied. In 1814, a toll house under construction near Springer's Tavern was removed because of some unspecified "trouble to the workmen", and this may be near the location marked "Springer" west of the Oak Hill School on the Heald map (1820, Figure 12). In 1818, the road was divided into two parts: 1. from Market Street for 3 1/2 miles, and 2. from that point to the Gap Road, 3 miles, 138 perches, and different toll rates set for the two sections. Scaled on a modern map, this point would fall about 1000 feet west of Little Mill Creek, or about 1750 feet west of the excavated site. The rates are lower on the outer section, from this point to the Newport Road. The receipts and expenditures show two gates, as does the Rea and Price Map (Figure 7), but the latter map shows a gate a considerable distance further west than the dividing point calculated above, as well as one at the edge of Wilmington. In general receipts at the outer gate are lower than those for Gate 1. In 1824, the minutes acknowledge that there is no hope that the income from the road can ever pay off the principal of the bank loans for its construction, and by the late 1850's the assets, including the toll houses are being liquidated.

In summary, the turnpike was probably relocated south of the old road in order to provide a more direct route, and all of the available documentation suggests that the toll houses were in locations other than that of the excavated site. A further observation is in order at this point. The general assumption adopted during the background research was that the present alignment of the Lancaster Pike was very near to the nineteenth century position of the road, clearly leaving the excavated site on the north side of the road, even in the nineteenth century. An unsuccessful attempt was made to locate any documents that may have been retained by local governments, who were responsible for public road construction and maintenance until the first decade of the twentieth century, to determine if the present alignment was, in fact, further south than the turnpike. If the alignment of the turnpike was further north by the amount of the distance from the site location to the present road, then the excavated site would have been located on a property or properties south of the nineteenth century turnpike, and these properties were not researched for this project. A glance at Figure 11 should reveal that this is possible, though not as likely as the assumption used.

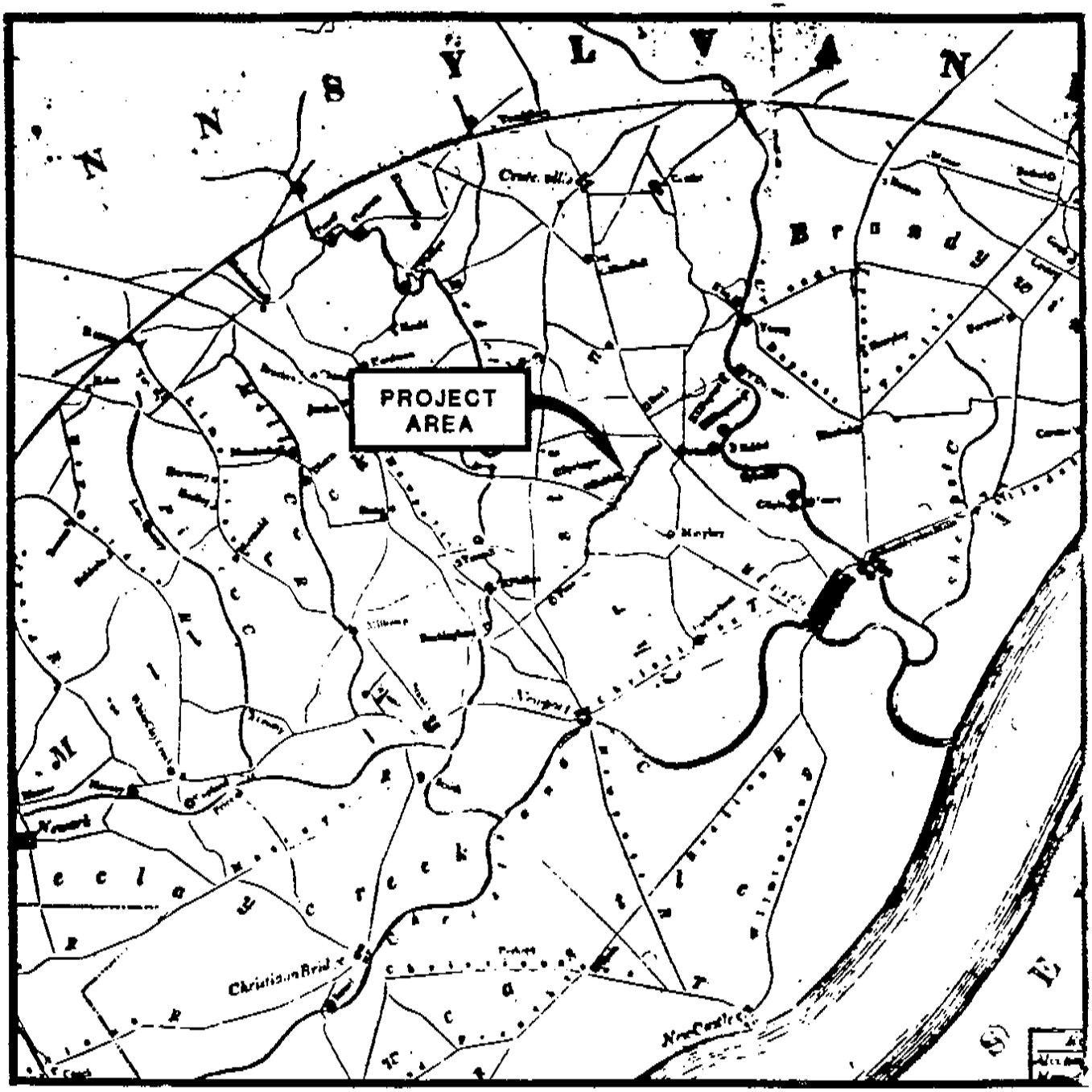
Provision is made for selecting the straightest route, and this is probably the explanation for the shift in alignment reflected in the deeds described above. A local variation for the Wilmington Branch is that toll houses are authorized every two miles, instead of the five mile interval specified for the original road.

The original manuscripts of the Minutes of the Wilmington Turnpike company were examined at the library of the Delaware Historical Society and some entries pertaining to the study area were noted. In March of 1812, a committee inspected a portion of the road "undertaken by John Haddock" and declared that they were satisfied. In 1814, a toll house under construction near Springer's Tavern was removed because of some unspecified "trouble to the workmen", and this may be near the location marked "Springer" west of the Oak Hill School on the Heald map (1820, Figure 12). In 1818, the road was divided into two parts: 1. from Market Street for 3 1/2 miles, and 2. from that point to the Gap Road, 3 miles, 138 perches, and different toll rates set for the two sections. Scaled on a modern map, this point would fall about 1000 feet west of Little Mill Creek, or about 1750 feet west of the excavated site. The rates are lower on the outer section, from this point to the Newport Road. The receipts and expenditures show two gates, as does the Rea and Price Map (Figure 7), but the latter map shows a gate a considerable distance further west than the dividing point calculated above, as well as one at the edge of Wilmington. In general receipts at the outer gate are lower than those for Gate 1. In 1824, the minutes acknowledge that there is no hope that the income from the road can ever pay off the principal of the bank loans for its construction, and by the late 1850's the assets, including the toll houses are being liquidated.

In summary, the turnpike was probably relocated south of the old road in order to provide a more direct route, and all of the available documentation suggests that the toll houses were in locations other than that of the excavated site. A further observation is in order at this point. The general assumption adopted during the background research was that the present alignment of the Lancaster Pike was very near to the nineteenth century position of the road, clearly leaving the excavated site on the north side of the road, even in the nineteenth century. An unsuccessful attempt was made to locate any documents that may have been retained by local governments, who were responsible for public road construction and maintenance until the first decade of the twentieth century, to determine if the present alignment was, in fact, further south than the turnpike. If the alignment of the turnpike was further north by the amount of the distance from the site location to the present road, then the excavated site would have been located on a property or properties south of the nineteenth century turnpike, and these properties were not researched for this project. A glance at Figure 11 should reveal that this is possible, though not as likely as the assumption used.

FIGURE 12

PORTION OF 1820 HEALD MAP OF ROADS OF NEW CASTLE COUNTY. SURVEYED AND PRINTED BY HENRY HEALD



Additional research for other purposes is underway for the property south of the present alignment of Lancaster Pike, and this may shed additional light on the problem at some future time. In the meantime, it must suffice to observe that the background research has not positively identified the function or occupants of the site excavated as the Grant Tenancy, though the probability that it may have been occupied by a property owner has been considerably reduced. It is therefore likely that it was, indeed, a "tenancy". Whether or not the site was occupied by a tenant farmer is another matter. Since it sits immediately adjacent to roadways of some antiquity, it may have provided some services to travelers. Neither maps nor documents specifically indicate the presence of a tavern at or near this spot, but that does not rule out the possibility that this activity occurred there. Court records indicate frequent prosecutions for the selling of spirits without a license, suggesting that this was not an uncommon practice. The identification of distinctive archeological patterning for site function may further clarify the status of this site, but, for the moment, the background research leaves some ambiguity.

Fieldwork

The following presents the results of the fieldwork by provenience group and/or method of excavation. The provenience groupings were based on the soil and depositional contexts, the collection methods used and the integrity of the materials collected. Brief descriptions of the types of artifacts found are given below for each provenience group. A summary listing of the artifacts recovered is given in the Artifact Inventory, Appendix II.

Controlled Surface Collection

The results of the surface collection are shown on Figures 3-6. The site was plowed the week before the archeological team was to arrive to allow for a rain to fall and thus optimize collecting conditions. The results of the initial collection indicated that the highest concentration of artifacts occurred at the very western edge of the plowed area. The plow was brought back to the site and the surface collection was extended an additional 60 feet to the west in order to better define the entire site area. However, collecting conditions were not the same for both sections, a point which needs to be emphasized when examining the results in the figures provided here. The collection west of the East 370 line was collected under less than ideal conditions (very little rain had fallen after the plow/disc operation) and this is probably reflected in the raw counts. The results of the surface collection did prove to be a useful tool in predicting the presence of subsurface features. The house foundation and the larger features fell within the areas with the highest concentration of artifacts. As shown in Figures 3-6, this corresponds roughly to the area between East 350 and East 410; North 140 and North 200. The surface

collection, however, failed to foretell the "midden" (Feature 5, see discussion below), located south of the North 140 grid line and in the east. The reason for this is not clear.

Ceramic types recovered from the surface collection include undecorated refined white earthenwares as the majority type with pearlware (1,930) dominating and smaller amounts of creamware (241) and whiteware (433). Decorations present on the refined white earthenwares include transfer printing, hand painting, annular and edge decorated. The second largest ceramic type represented in the surface collection was coarse red earthenware (1,584), followed by refined redware (144), yellowware (49), stoneware (28) and porcelain (43). No identifiable maker's marks or patterns were present in the controlled surface collection artifacts. Tobacco pipes (301) were also present including one which was glazed. Most of the bottle glass (389) recovered consisted primarily of small sherds on which the manufacturing technique could not be determined, however, examples of both machine made and mold blown glass were found. Various miscellaneous types of hardware were found as well as slate pencils and buttons. Coins recovered from the controlled surface collection include a 1961 copper penny. A pewter tableware handle with "BEST TAR... LET...9" and an embossed crown was recovered during the surface collection. Several prehistoric artifacts were also found including a jasper flake, a chert flake and a quartz flake. A complete artifact inventory is found in Appendix II.

Plowzone Sampling

The excavation of five by five foot units was started at grid points N125E395 and N130E415 in order to relocate Units A and F from the 1983 test excavations (Figure 13). These two adjacent units had contained Feature 2 (herein referred to as Feature 2/83 to distinguish it from features recovered during the Phase III excavations), a rock cluster which was interpreted at the time as a portion of a house foundation (Barse 1985:75). The Phase III investigations later proved this interpretation to be incorrect, however. Beginning at about #410, an artifact rich midden deposit was noted lying stratigraphically between the layer of field stones and the plowzone, again, increasing with depth towards the northwest (Figures 14 and 15). Artifacts were associated with both the midden and the stone layer, but not the underlying subsoil. Figure 14 shows the profile across the site and the relationship between the plowzone, midden, stone layer and subsoil. The absence of the midden east of E405 appears to be due to its having been incorporated into the plowzone where these two strata occur at a shallower depth.

The artifact assemblage recovered from the plowzone was similar to that from the controlled surface collection with refined white earthenwares comprising the largest percentage of the ceramics. Pearlware comprised the largest group with 5,699 sherds, followed by whiteware with 1,767 and creamware with 756. Decoration on the refined white earthenwares includes transfer

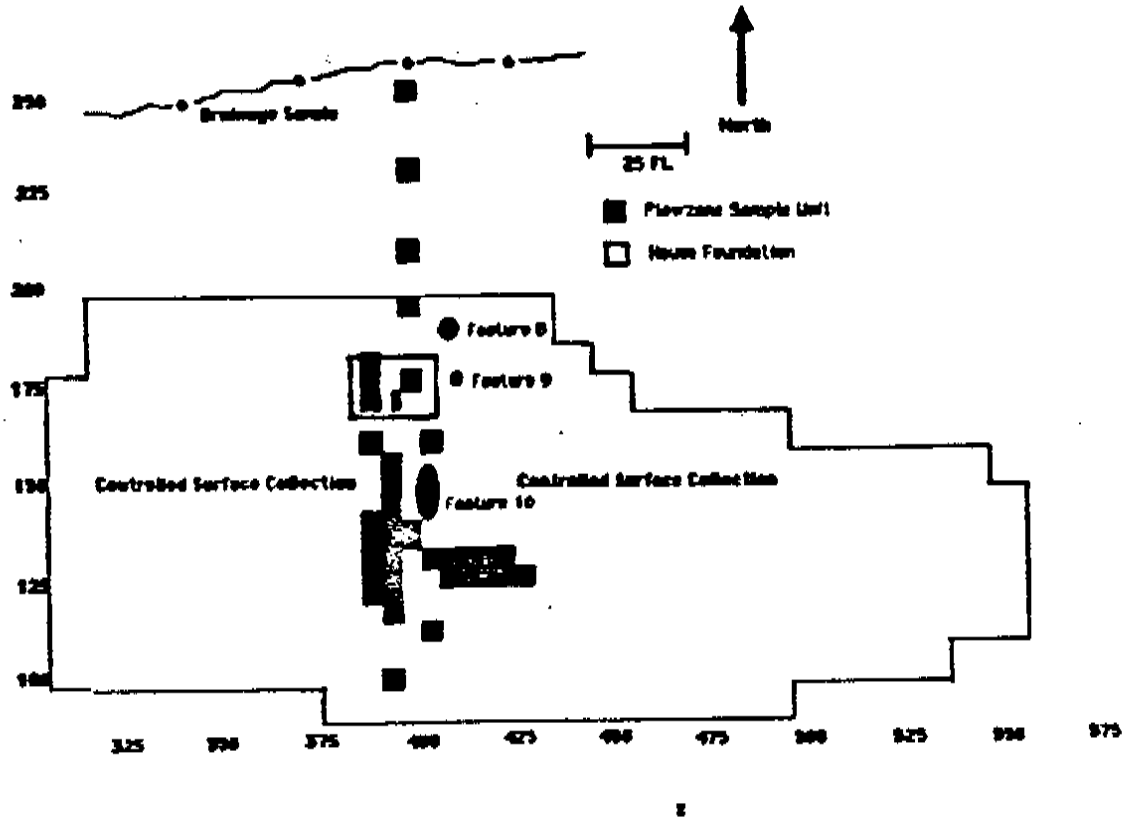
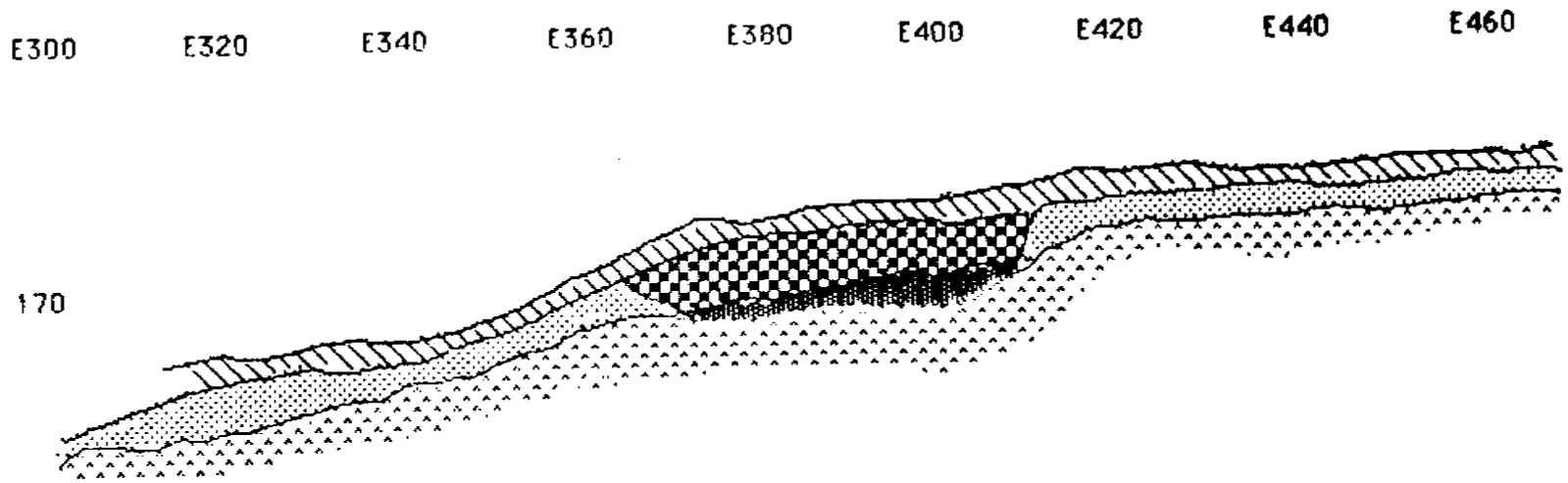


FIGURE 13
H. Grant Tenancy Site (7NC-B-6)
Site Grid Showing Controlled
Surface Collection Boundary and
Plowzone Sample



SCALE

VERTICAL SCALE - 1"=4'
HORIZONTAL SCALE - 1"=20'
VERTICAL EXAGGERATION = 5X

LEGEND

- AP (plowzone) - Dark brown silty loam, 10YR4/4
- IIAP (buried plowzone) - Dark brown silty loam, 10YR3/4
- Midden-Silty loam, 10YR3/4, w/ high concentration of artifacts
- Fill -Coarse sand w/ large rocks, 10YR4/6, w/ artifacts
- Subsoil- Sterile, 10YR4/6, w/ mica and decaying rocks

FIGURE 14
H. Grant Tenancy Site (7NC-B-6)
East/West Profile @ N135 Grid Line

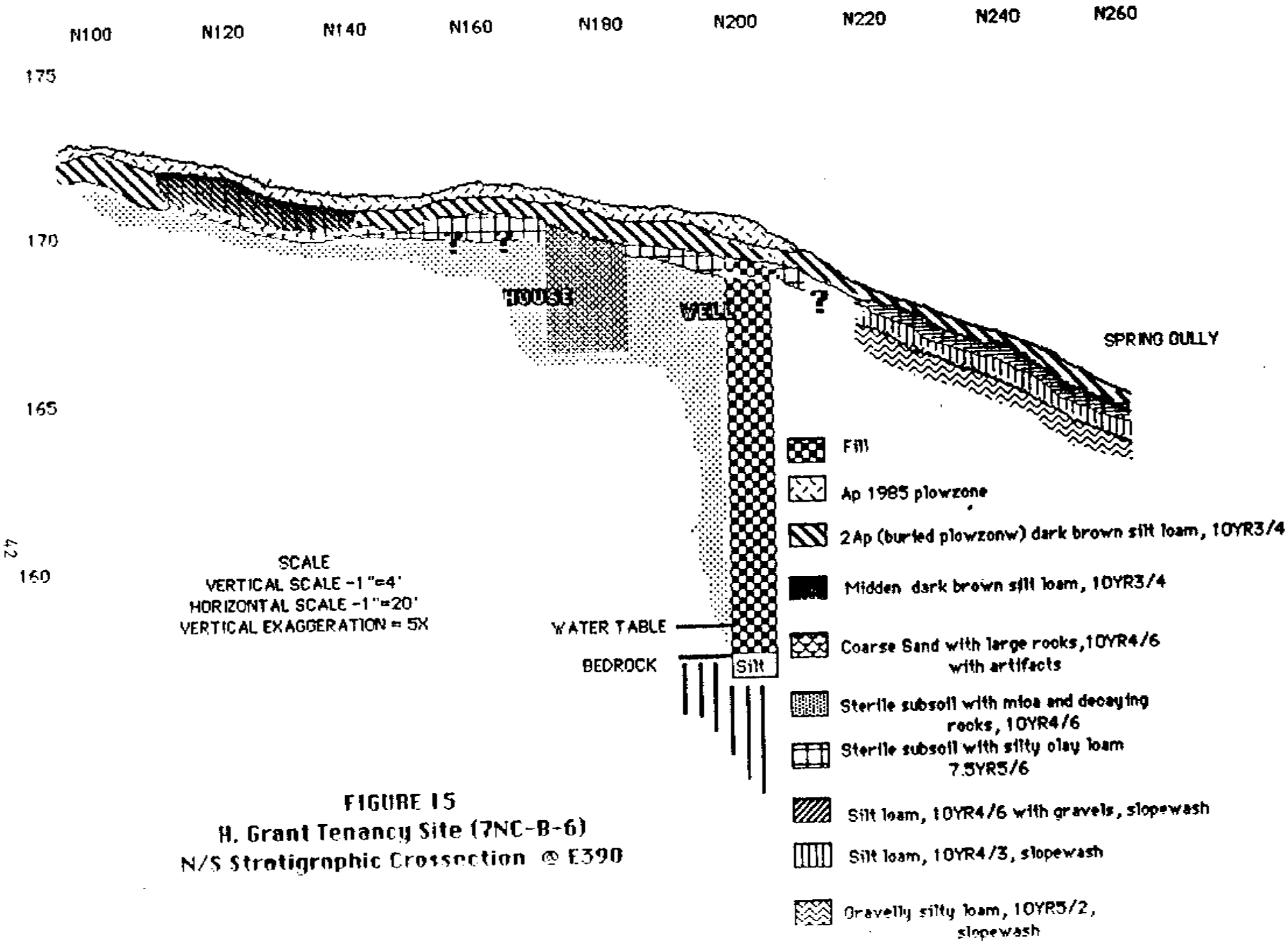
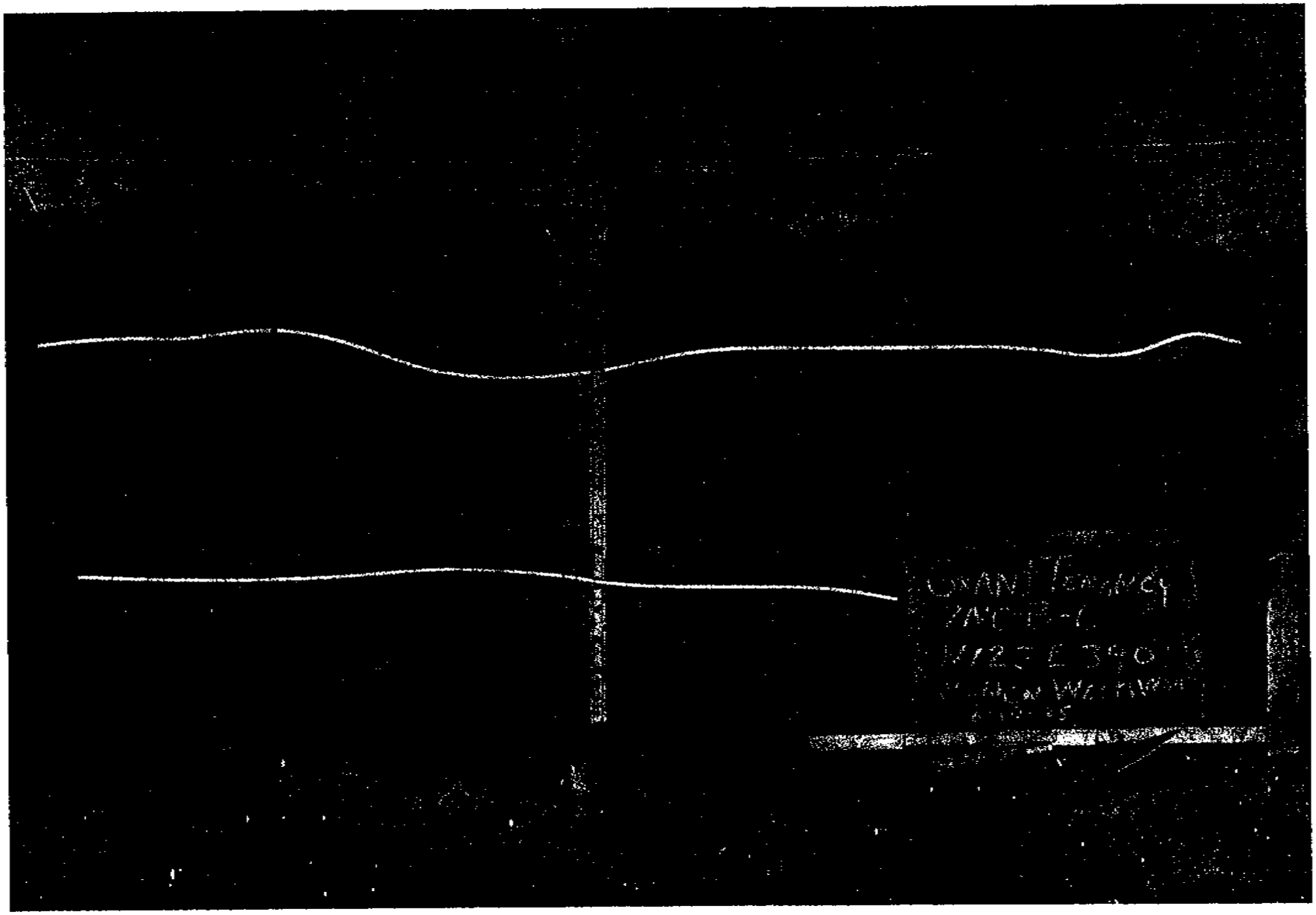


FIGURE 15
H. Grant Tenancy Site (7NC-B-6)
N/S Stratigraphic Crossection @ E390

PLATE 3

PROFILE SHOWING MIDDEN



printed, hand painted edge decorated and annular. These were followed by coarse red earthenwares, (4,743) refined redware (705), yellowware (276), stoneware (39) and porcelain (91). The bottle glass (926) was generally undiagnostic, although some examples of pressed glass as well as fragments and mold blown bottle glass were recovered. An 1850 Indian Head Cent, an 1858 Flying Eagle Cent and an 1852 Silver Cent were recovered during the excavation of the plowzone. Other metal artifacts include various buttons (15), miscellaneous hardware and a jew's-harp. Three of the buttons were embossed with "Double Gilt...2nd Quality". A chalcedony gunflint was also found. Prehistoric artifacts found include 3 chert spalls, 4 chert flakes, 3 quartz flakes, 3 jasper flakes and the distal portion of a milk quartz projectile point or knife, in addition to heavily reworked quartz side notched point/biface which cannot be typed and a temporally undiagnostic contracting stem biface.

Feature 5, or "Midden" is defined as an artifact rich layer of dark brown silt-loam soil which rests in an elongated depression (Plate 3). This depression was not apparent on the ground surface however it penetrated the subsoil for as much as a foot in some areas (Figure 14). It appears to be an old road bed or erosional gully which has been filled in with the artifact rich soil. This soil is not appreciably different in texture and color from the overlying plowzone and may represent topsoil which has been pushed into a gully perhaps for erosional control or landscaping. There was no evidence to suggest whether this had been done recently or whether it had been done at the time of occupation of the house. From its appearance it does not seem likely that the gully had filled in naturally although this possibility cannot be ruled out. Portions of this midden were excavated and portions were simply exposed and mapped during plowzone removal with the backhoe. The base of the midden was characterized by a layer of field stones.

The Midden begins at about N125E410 and extends across the site to the northwest generally getting thicker in this direction (Figures 2, 14, 15). The gully in which the midden rests actually extends to the southeast slightly beyond the end of the midden. The absence of the midden at this point is due to the fact that the gully is shallower here and the midden fill would have been incorporated into the plowzone. It was in this gully where Features 2/83 was located during the Phase I/II investigations. The stones at the base of the gully were originally interpreted as a foundation feature.

The midden soil was a dark brown silt-loam containing artifacts which were larger and less fragmentary than those recovered from the plowzone above it.

The configuration and orientation of the midden and underlying rock feature suggest two possible interpretations, neither of which could be confidently accepted in preference to the other. One possible interpretation is that the midden represents an in situ refuse deposit in which trash was thrown

into a nearby gully on the opposite side of the house from the well. This as a practice is consistent with similar domestic sites during the 19th century. However, if the location of Lancaster Pike today is the same as it was at the time the site was occupied then this would place the refuse dump between the house and the road.

Another possible interpretation for the presence of the midden and stone layer is that stone, and then afterwards, artifact bearing soil was pushed into an erosional gully or abandoned road bed in an effort to level the field for agricultural purposes. This might have occurred at the same time the house was destroyed and the cellar and well were filled in. In each of those cases it is clear that cultivation was possible after that time. The house and the well were demolished in a manner which permitted cultivation afterwards, even directly over these two ruins. The remaining stone foundations and debris from the house and well were below the reach of the plow. The field was planted in hay at the time of the excavations and there was no surface evidence of the house except for the presence of the artifacts lying on the surface.

Artifacts recovered from the midden were again similar to those recovered from the first two provenience groupings with undecorated refined white earthenwares and coarse red earthenwares comprising the two largest groupings. Of the refined white earthenwares, pearlware was the largest group with 1,874 sherds, followed by whiteware (441) and creamware (260). Decorations on the refined white earthenwares include transfer printing, hand painting, edge decoration and annular decoration, etc. Hand painted refined white earthenwares made up a slightly larger percentage of the decorated wares, with a decrease in the various minimally decorated wares (edge decorated, annular, finger trailed, etc.). Yellowware made up the next largest group (173) followed by porcelain (50), refined redware (21), refined stoneware (22) and coarse stoneware (10). The bottle glass (248) was generally undiagnostic, with several pieces of pressed glass and mold blown glass being present. A silver thimble, various buttons and flatware fragments, a slate pencil, barrel band fragments and a gunflint were also recovered from the midden deposit. One hundred six tobacco pipe fragments were found. Prehistoric artifacts recovered include 2 distal ends of quartz biface/points, a chalcedony flake, 2 quartz flakes and a heavily reworked point.

Forty-seven and one-half 5 by 5 foot units were hand excavated with the plowzone screened. They were distributed in a linear fashion across the area of the site with the highest concentration of surface artifacts. Figure 13 shows the distribution of these units. A composite profile across the site from north to south is presented in Figure 15. A number of features including the house foundation were encountered in these units at the surface of the subsoil and a discussion of each is presented in the following section of this report.

Feature Excavation

After completion of the excavated five by five foot units, the plowzone was stripped from the remaining site area with the backhoe in order to expose the entire house foundation and to expose all other features not already identified during the plowzone sampling. The total area exposed in this manner is shown on Figure 2. A description of each feature is presented below.

House

Overlying the actual foundation of the structure was a 2Ap horizon or buried plowzone consisting of a dark brown silty loam. Artifacts recovered from this horizon include decorated and undecorated refined white earthenwares, coarse red earthenwares (531), refined redware (104), yellowware (35), coarse stoneware (5) and porcelain (21). Pearlware (613) comprised the major portion of the refined white earthenware grouping with whiteware (235) and creamware (83) also represented in smaller quantities. Glass artifacts included both window (982) and bottle glass (149). The remaining glass artifacts were undiagnostic. Can fragments, various metal hardware items, tableware fragments, buttons (14) and 2 gun flints were also found. One of the buttons was a shank type with an eagle marked with ".AN.HORSTMANN & ALLIEN" and was found in the 2Ap. Another shank button marked "Robinson...EXTRA..." was also found. Seventy tobacco pipe fragments were recovered. A quartz distal portion of a biface/projectile point was also present.

All traces of the house above the surface of the subsoil were missing other than one or two stones and, of course, the artifacts within the plowzone. Plate 4 shows the exposed house foundation. Below this level, however, the cellar walls were virtually intact. The north and south walls were slumped slightly towards the interior of the house as though these were the walls which were originally pushed in at the time that the house was demolished. The cellar walls were made of stone cemented with mortar which, at the time of the excavation, was very friable and had lost its bonding properties. The interior surfaces were coated with whitewash, most of which had deteriorated and fallen off. The thickness of the walls ranged from 1.4 to 1.7 feet and were constructed by first forming two rows of larger "face stones" along the exterior and interior surfaces and then filling the resulting voids with smaller irregular stones (Figures 16 and 17). This method of construction results in a smooth "finished" appearance to the interior surface of the cellar wall.

The brick from the Grant Tenancy site was generally coarse sand with a few glazed specimens and the colors ranged from 2.5YR4/6 to 5YR6/8. The length of the brick ranged from 8.2-8.4" with a mean of 8.25". The width ranged from 3.2-4.2" with a mean of 3.93" and the thickness ranged from 1.9-2.4" with a mean of 2.04".

PLATE 4

VIEW OF FOUNDATION LOOKING SOUTHWEST

FIGURE 16
H. Grant Tenancy Site
(7NC-B-6)
House Foundation -
Detail Chimney Footing

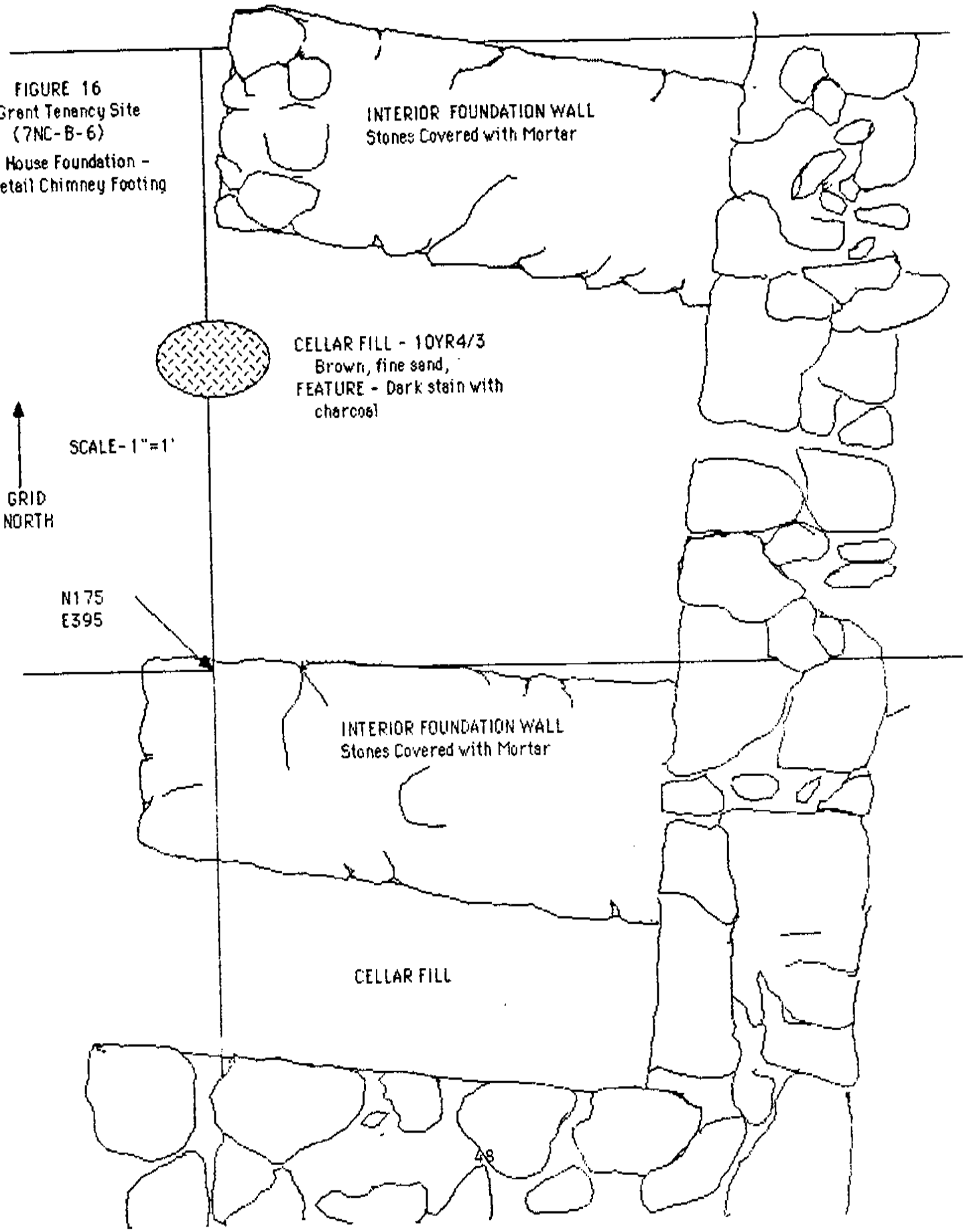


FIGURE 17
H. Grant Tenancy Site (7NC-B-6)
House Foundation - Detail SW Corner

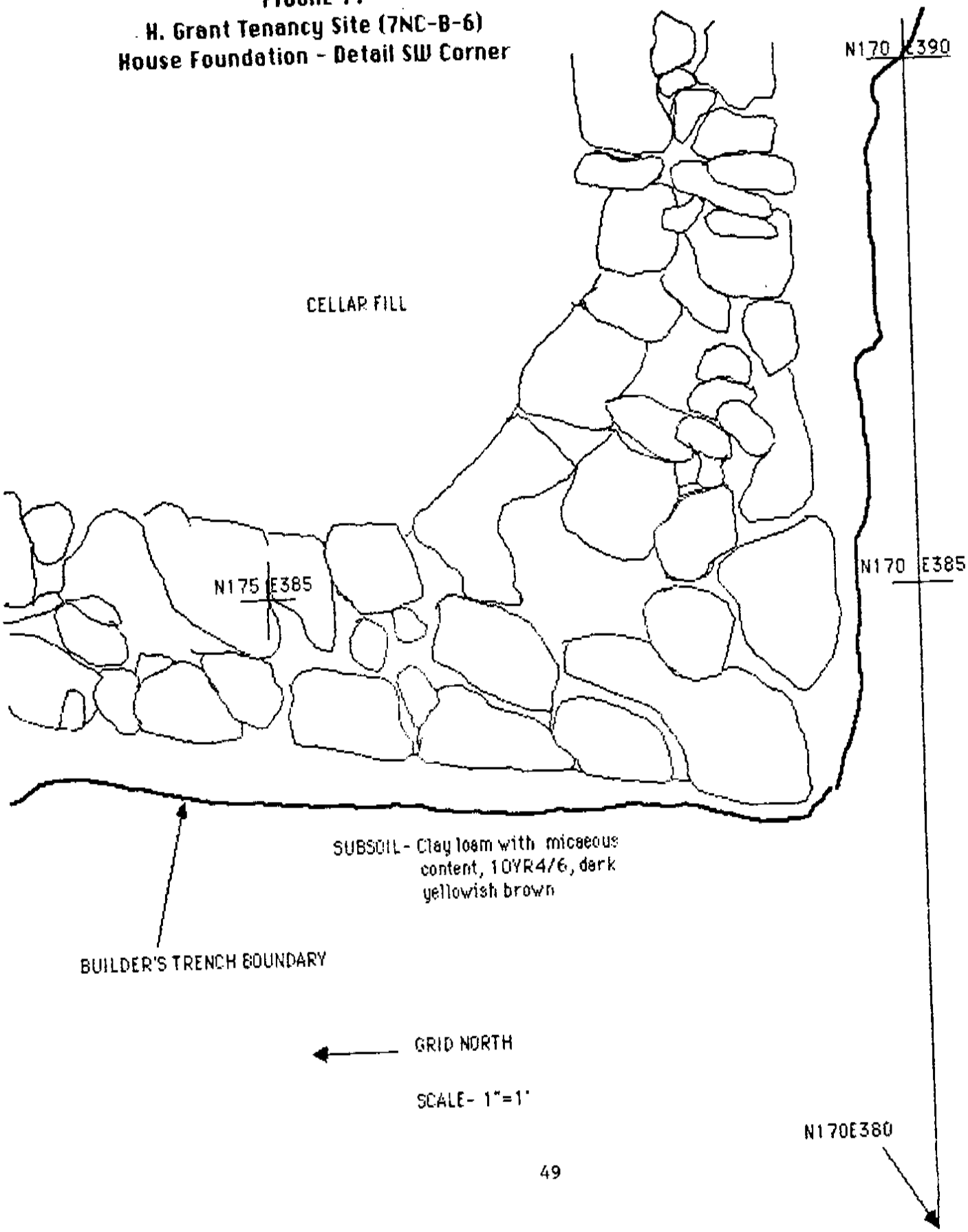


PLATE 5

CHIMNEY SUPPORT DETAIL LOOKING EAST

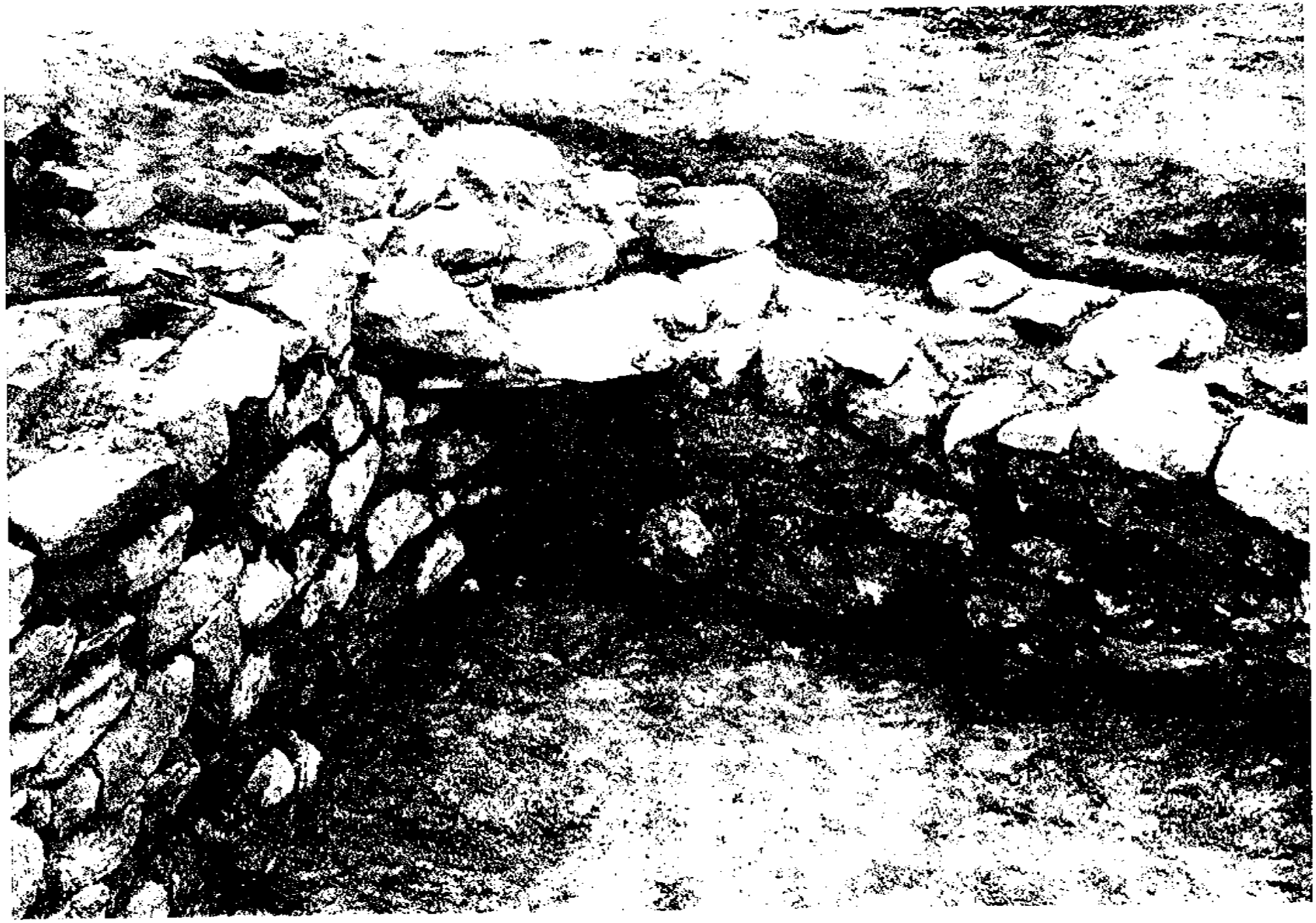
Two walls extended out from the east wall into the interior of the house (Figure 16). These were constructed in the same manner as the cellar walls and were between 1.6 and 1.7 feet thick, measuring four feet in length from the interior surface of the east cellar wall. They are positioned slightly off center of the centerline of the house and measure 5.2 feet from center to center. Each of the interior walls is simply butted against the exterior cellar wall rather than being joined with interlocking stones. This might suggest that they were added at a later time or, alternatively, that the strength provided by the interlocking method of construction was not a consideration in their design. They are interpreted as a chimney or stove support. Plate 5 shows a detail of the chimney supports. The cellar contents contained a small ash and brick concentration at the northeast corner of the cellar adjacent to these interior walls. This appears to represent a discrete depositional episode which may be some sort of ash and refuse dump. The artifacts contained within this ash and brick concentration were probably mixed with the brick at the time of demolition or shortly before. It is unlikely that they were present in the fireplace as they were unburned.

The southwest corner of the cellar wall was constructed differently from the other three corners. A detail drawing is shown in Figure 17. The corner is heavily buttressed, beginning at approximately 3 feet above the level of the cellar flow. Unfortunately, not enough of the wall remained to determine why this extra buttressing was required at this corner. It is perhaps a support for steps or a staircase (Plate 6).

An estimate was calculated of how much of the walls had been removed above the subsoil based on the amounts of stone recovered from the cellar fill. Given the very large quantity of stone removed from the excavation of the cellar fill, the question was raised as to whether the structure was wood frame or log, resting on a stone foundation or perhaps portions of the house above the cellar were also constructed of stone. The fill was predominantly stone with the remainder consisting of soil and artifacts. Very little wood was recovered from the cellar fill which may indicate that either most of the structure was stone or that the wood was simply missing at the time of demolition either from natural decay or from scavenging. By calculating the volume of stone contained within the remaining walls and comparing this with an estimate of the amount of stone contained within the fill, it is possible to determine whether or not enough stone was present in the fill to have provided an upper story. This is, of course, assuming that the stone within the cellar fill was in fact from the house walls. Excluding the two interior support walls, the cellar walls contained 294.0 cubic feet of stone and mortar. Given the exterior dimensions of the structure at 16 x 15.5 feet and with each wall averaging 1.5 feet in thickness and 3 1/2 feet high, each additional foot of wall above what was left intact would require 84.0 cubic feet of stone and mortar. The volume of stone and soil contained within the cellar fill amounts

PLATE 6

SOUTHWEST CORNER OF HOUSE



to 546.0 cubic feet. Allowing for voids and soil within the cellar fill comprising anywhere from 1/4 to 1/2 of that volume (based on a visual estimate at the time of excavation) and accounting for the volume taken up by the ash and brick concentration (21 cubic feet), and the interior wall supports (47.6 cubic feet), this leaves from 3.97 to 4.46 additional feet of cellar wall that can be accounted for from the stone recovered from the cellar fill. This translates to 6.47 to 7.96 feet of cellar wall height (measured from the cellar floor), enough for a full cellar but little else. If the structure did contain above ground portions made from stone, then the stone was removed from the site at demolition or shortly thereafter. In any case, there was very little stone in the plowzone and it appears that the site was cleared sufficiently to allow for easy cultivation of the area. Because there was very little evidence for a large scale fire, it is presumed that the absence of lumber recovered from the cellar fill indicates that the wood was either totally scavenged at the time of demolition or that the structure was abandoned for a long enough period of time for natural decay and/or scavenging to have removed most of the lumber prior to the collapses of the building in on itself and the intentional filling of the cellar.

Ceramic artifacts from the cellar fill included undecorated refined white earthenwares as the largest group, followed by coarse red earthenwares (618). Transfer printing was the major decorative type found on the refined white earthenwares. Other ware types found include refined redware (118), yellowware (42), coarse stoneware (23), refined stoneware (8), and porcelain (48). Most of the refined white earthenwares were typed as pearlware (1,225), although whiteware (419) and creamware (96) were also found in smaller percentages. An almost complete brown salt glazed stoneware bottle was reconstructed from sherds from the cellar fill (Plate 7). An impressed mark and date were present on the bottle. The mark was "J. B. Bryant" and the date was "1847". In addition, an almost entire trailed slip decorated coarse earthenware pie plate with a routletted edge was recovered as well (Plate 8). Undiagnostic container (274) and flat glass (1,673) was also present in the fill as well as fragments of a mold blown bottle, mold type unknown. Several pieces of embossed mold blown bottle fragments were also found, however, the embossing was fragmentary and no additional information is available. Pressed glass fragments were also present. Can fragments, miscellaneous pieces of hardware, buttons (40), a thimble, a gun flint were present in the cellar fill. One of the buttons was a brass shank type marked "London...Super Fine". Three coins were found and a religious medal was also recovered from this provenience group. This has a figure on the obverse side with the words "mere de dieu priez pour nous" which translates as "Mother of God pray for us". The reverse side shows the peaked hat symbolic of the French Revolution and what appears to be a symbol of Calvary. Prehistoric artifacts recovered from the cellar fill include 2 chert flakes, the distal portion of a quartz biface, and 2 quartz flakes. In addition, a mass of charred wood fragments and heavily oxidized and

PLATE 7

STONEWARE BOTTLE

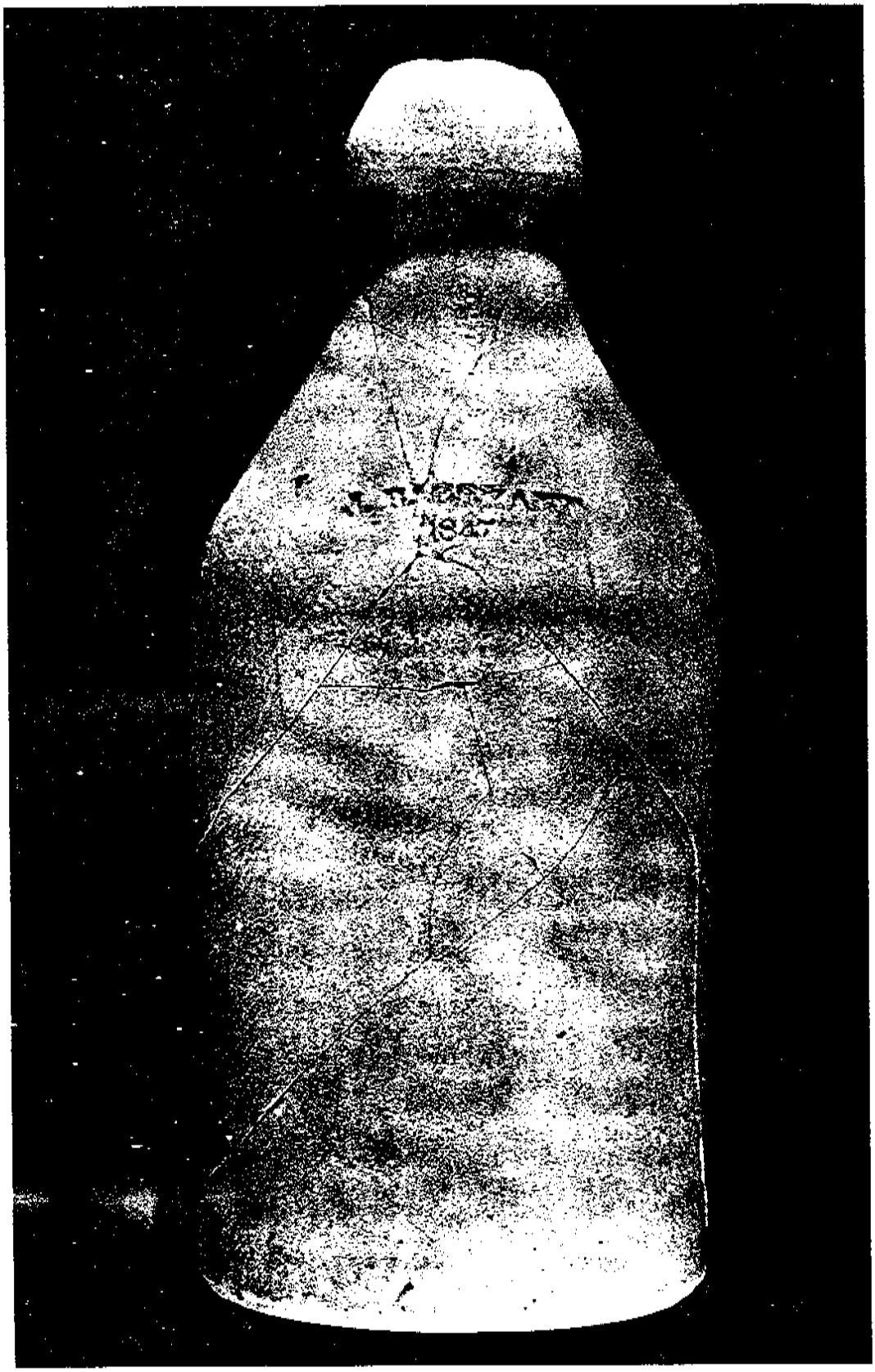


PLATE 8

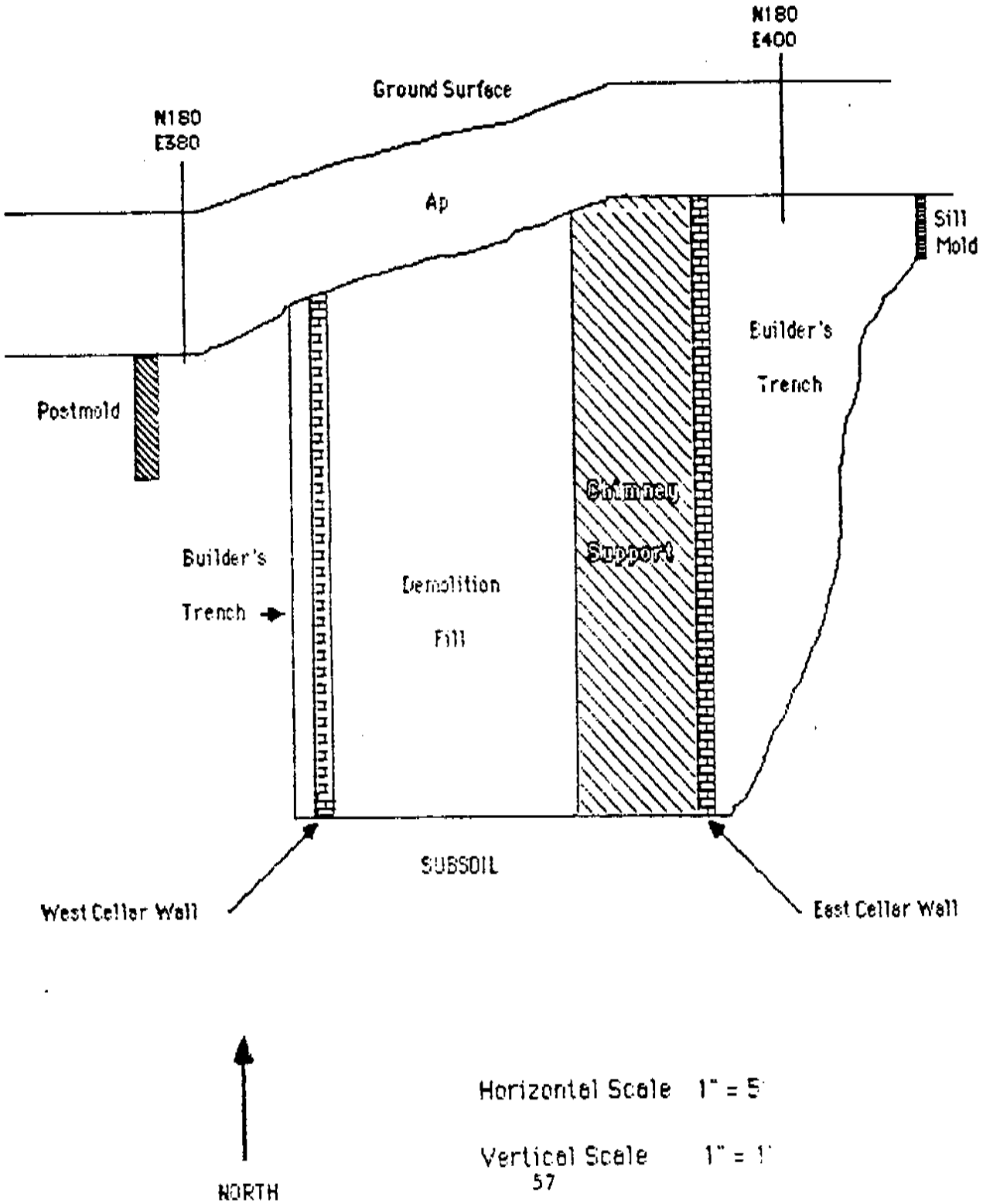
REDWARE PIE PLATE

deteriorated ferrous metal encrusted with sand was removed from the cellar fill. Based on the impression left after excavation, this was interpreted as a burned keg and was mapped in situ in the field. Upon close examination in the laboratory, it was decided that the condition of the remains was beyond conservation and it was discarded.

Underlying the cellar fill was a floor midden which was clearly discernible as a compacted sandy loam and contained artifacts. It is interpreted as a "living surface" which was deposited during the occupation of the structure. It was .3 feet thick and varied little in depth across the floor. Below this level was the banded coarse sandy "C" horizon material consisting of weathered bedrock that forms the parent material for the soils in this area. Excavation of the floor midden was divided into two units. The floor midden lying between the two interior support walls was separated from the rest of the floor. Artifacts from between the two interior support walls included no ceramics, 1 bottle fragment, 4 flat glass fragments, 2 cut nails and 16 brick fragments. The artifacts recovered from the rest of the floor area included 39 ceramic fragments which were predominantly pearlware. Fourteen flat glass fragments and six bottle fragments were also included. Forty-three can fragments, a lead bale seal and a number of brick fragments, as well as a heavily reworked quartz stemmed projectile point were also recovered from this area.

The upper portion of the house extended beyond the cellar walls on the east side of the house and an addition or attachment (such as an exterior shed or porch) may have been present on the western side of the house as well. Removal of the plowzone surrounding the cellar revealed a series of six circular postmolds (P.H.1-6, Figure 2) on the western side. These followed a line parallel to the west cellar wall at a distance of 5 feet from its edge. The spacing was slightly irregular and ranged from 2.1 to 3.1 feet. Other than the builder's trench which followed the cellar wall, no other features were noted to provide clues as to the nature of the postmolds. They may represent an attached structure, a porch, or, alternatively, a fence. This is in contrast to the east side of the house where an addition or an attachment to the house was clearly evident. Here, the builder's trench extended beyond the east cellar wall forming a rectangular shaped pit measuring six feet wide and sixteen and one half feet in length, just slightly longer than the east cellar wall. The fill within this area was labeled as "exterior midden" when it was first identified and this label, although somewhat misleading, was retained for consistency. In profile (Figure 18), the trench slopes steeply from the far eastern edge to the base of the cellar wall. A linear stain was present along the eastern edge which runs parallel to the eastern cellar wall. This stain ran the length of the wall and measured 1.5 feet wide and .9 feet in depth, measured from the base of the plowzone. It is interpreted as a sill stain; the wooden sill would have provided support for floor joists extending from the top of the cellar wall. With the exception of the sill stain,

FIGURE 18
H. Grant Tenancy Site (7NC-B-6)
Profile of House Foundation Looking North



the fill within this feature was relatively homogeneous from the cellar wall to its eastern edge. It consisted of a micaceous coarse sand with small weathered rocks and was relatively loose and uncompacted. It appears to have been derived from the local "C" horizon material which was re-mixed with humus and occasional artifacts. The sill stain consisted of a dark silty loam and the portion which was excavated did not contain artifacts. Including the eastern extension, the length of the house was 22 feet, with the possible addition of another five feet on the western side (of the six postmolds there represent a porch or attachment and not a fence line). The width of the house is 15.5 feet, based on the dimension of the cellar wall.

Materials recovered from the "exterior midden east" include, like the previous provenience groupings, undecorated refined white earthenwares (29) as the majority type, followed by coarse red earthenware (18), hand painted refined white earthenwares (6), transfer printed refined white earthenwares (4), minimally decorated refined white earthenwares (2), porcelain (2) and refined redware (1). Most of the refined white earthenwares were typed as pearlware (28), followed by whiteware (13). Flat glass (20) and container fragments (4) were recovered from this provenience. Other artifacts recovered include 8 cut nails, brick, mortar and coal and 1 bone button.

The ash and brick concentration in the northeast corner of the cellar is interpreted as a refuse deposit dumped into the cellar sometime prior to the filling in of the cellar. The concentration was easily discernible from the rest of the cellar fill and situated in the very corner of the cellar. It was unmixed (with the overlying fill) and provides a good sealed context. A total of 190 ceramic fragments were recovered, including 48 pearlware, 21 creamware, 1 yellowware, 23 whiteware, 36 coarse red earthenware fragments and 58 "other". Nails from this context included 65 cut and 17 wrought specimens. Mold blown bottle fragments were present, however, the type of mold could not be determined. Various hardware specimens including a horseshoe, can fragments, a ferrous metal button, a bone button and two projectile points were recovered from the ash and brick concentration. Both of the projectile points were heavily reworked and stemmed, one was from quartz and one was from rhyolite. Additionally, a large quantity of brick and coal was recovered.

The final context associated directly with the structure includes the sample of artifacts recovered from the cellar wall builder's trench. The central portion of the south wall was removed in order to recover this sample. Additionally, builder's trench artifacts recovered while exposing the upper portion of the remaining cellar wall are included. Eighty four ceramic fragments were recovered including 40 pearlware, 9 whiteware, 4 porcelain, 2 yellowware, 1 creamware, 1 stoneware, 25 redware and 2 "other". Other materials include 47 window glass fragments, 8 cut nails and 9 tobacco pipe fragments. Flatware fragments, a

horseshoe, can fragments, brick and mortar were also present. The presence of these artifacts indicates prior use of the site.

Feature 8

Feature 8 represents the remains of a well (Plates 9 and 10). The well was uncovered during the plowzone stripping and is located 10 feet from the northeast corner of the house. The methods of excavation utilized in recovering the fill and contents of the well are discussed earlier in this report. The base of the well was reached at 13 feet below the surface where the interior diameter of the well was 2.6 feet. The stone wall rested on bedrock which had been chiseled out at the base to provide an additional one half foot. The water table was measured after an overnight pause and was recorded at 11.1 feet below the surface (159.3 feet above sea level). This provided two feet of standing water. The profile of the well is shown in Plate 10 & Figure 19. The upper 11.4 feet consisted of fill which was predominantly large stones and brick, and only a slight amount of sediment. Underlying this was a layer of sandy silt. Artifacts were recovered from both layers. The ceramics from Feature 8 consisted primarily of undecorated pearlware, however transfer printed, hand painted and minimally decorated pearlware was also present. One hundred thirteen pearlware sherds were recovered. Other ware types found include coarse red earthenware (38) refined redware (6), yellowware (3), stoneware (4), whiteware (8), creamware (4) and a single sherd of porcelain. Eight tobacco pipe fragments were found. undiagnostic flat (24) and container glass (9) was also present. A copper half cent on which the date was undecipherable was present. In addition, 680 can or bucket fragments were recovered from the well. Wooden artifacts recovered from the well included 1 disarticulated bucket with one ferrous metal band, a wrought ferrous metal handle and a very heavily oxidized chain fragment. This is probably the well bucket (Plate 11). A square, wooden, possibly cedar, post fragment with a diagonally cut point at one terminus was also recovered from the well, in addition to numerous wood fragments. The well also contained oak board fragments, pine board lathe fragments and a wooden dowel fragment. An oak plank with a ferrous ring attached was found in the well; this may be a gate fastener fragment. Two fragments of leather, one of which had a punched hole for a buckle tang were recovered. These appear to be harness leather pieces. Twenty three whole cherry pits, 18 cherry pit fragment, 2 whole peach pits and 3 peach pit fragments were recovered from the well.

Feature 10

Feature 10 was a large rectangular stain measuring 10.6 by 5.8 feet. The plan view is shown on Figure 20 (see also Figure 2). The stain was relatively shallow, measuring .4 feet (below the base of the plowzone) at its deepest point (Figure 21). Three postmolds were present at the base of the feature penetrating the subsoil but were not apparent in the feature fill during the feature excavation (Postmolds A, C and D, Figure 21).

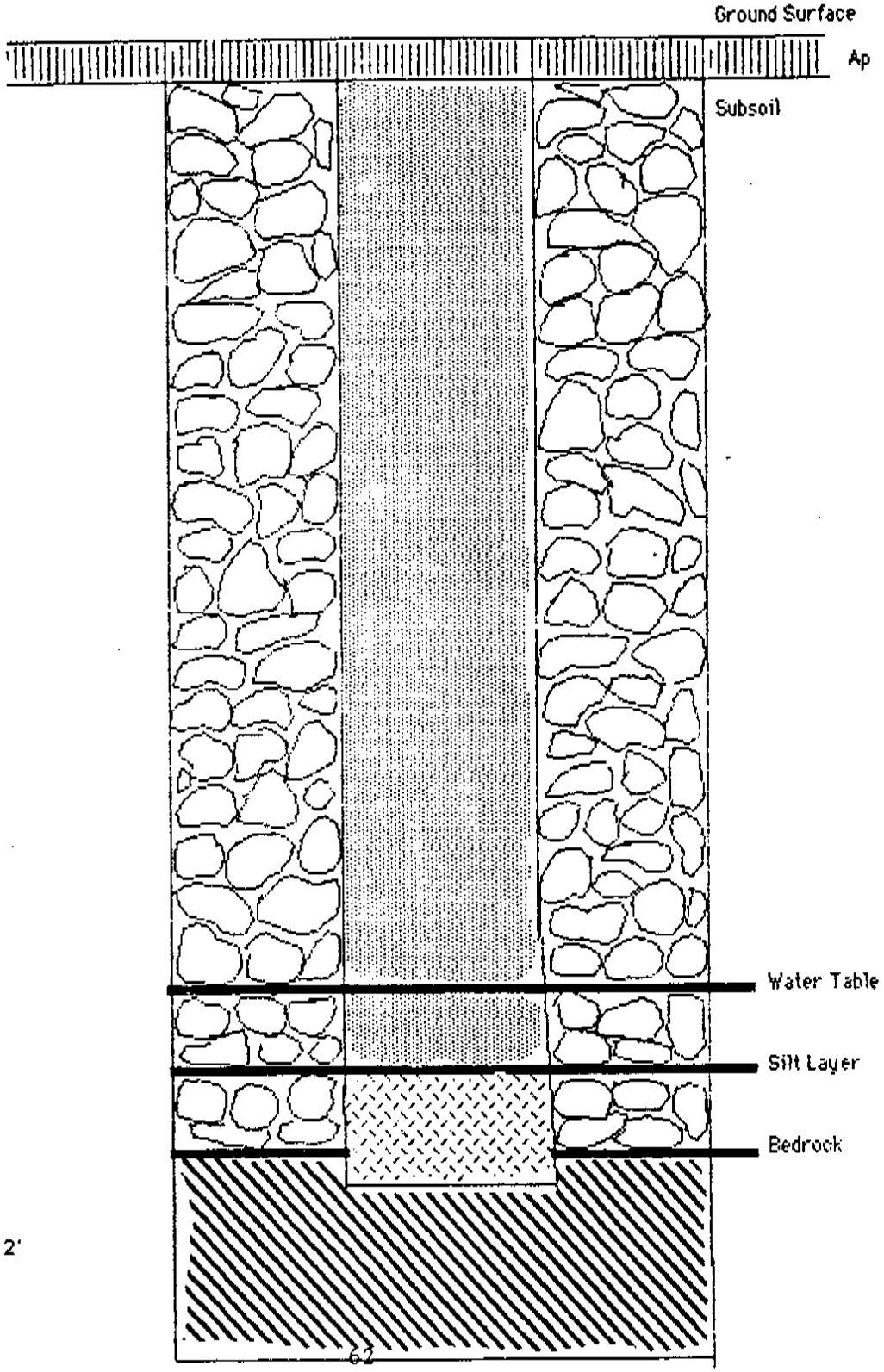
PLATE 9

WELL DETAIL

PLATE 10

WELL PROFILE AFTER EXCAVATION LOOKING SOUTH

FIGURE 19
H. Grant Tenancy Site (7NC-B-6)
Feature 8 - Well Profile



SCALE 1" = 2'

PLATE 11

BARREL FROM WELL

FIGURE 20
H. GRANT TENANCY SITE (7NC-B-6)
FEATURE 10, PLAN

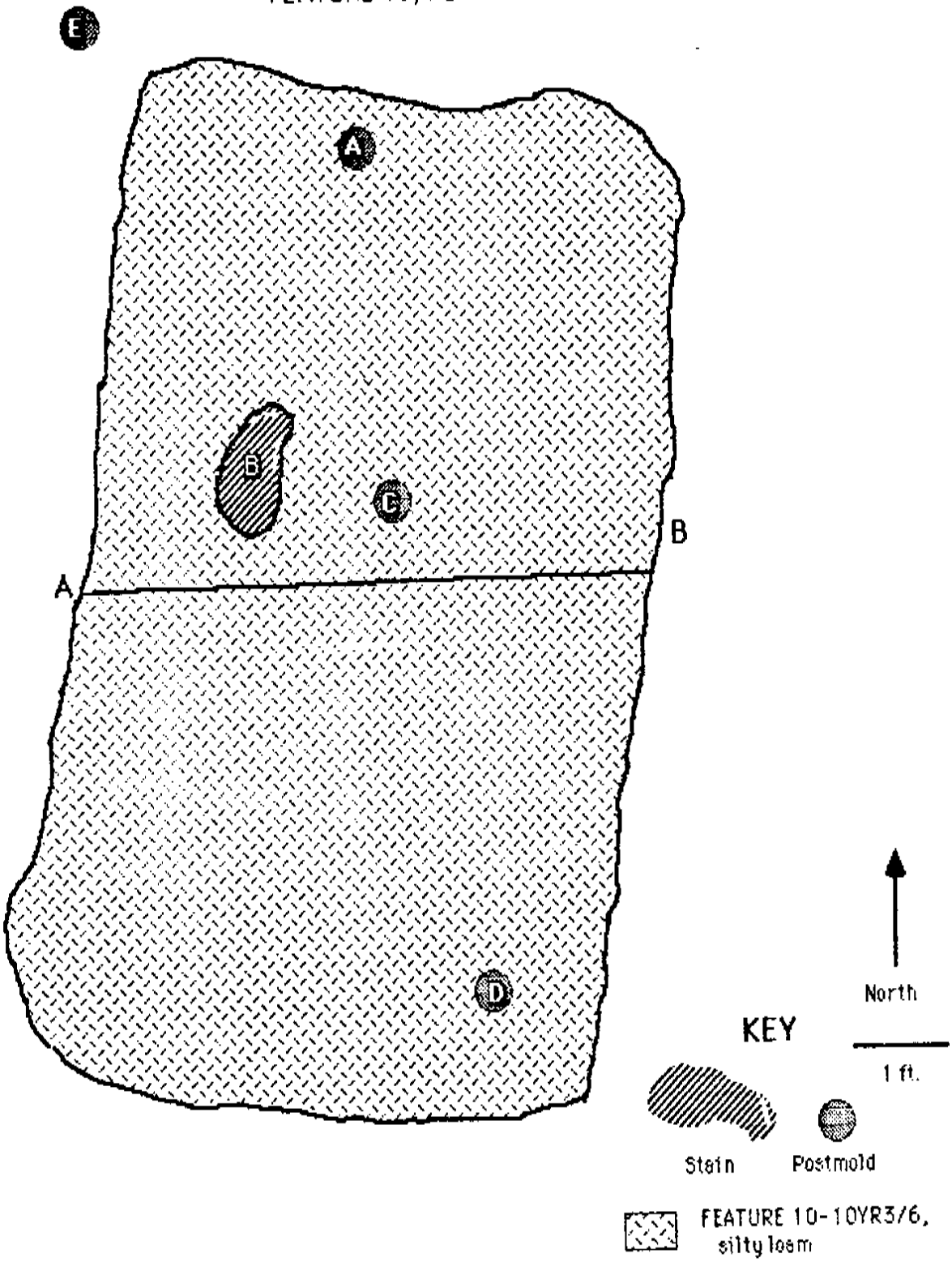
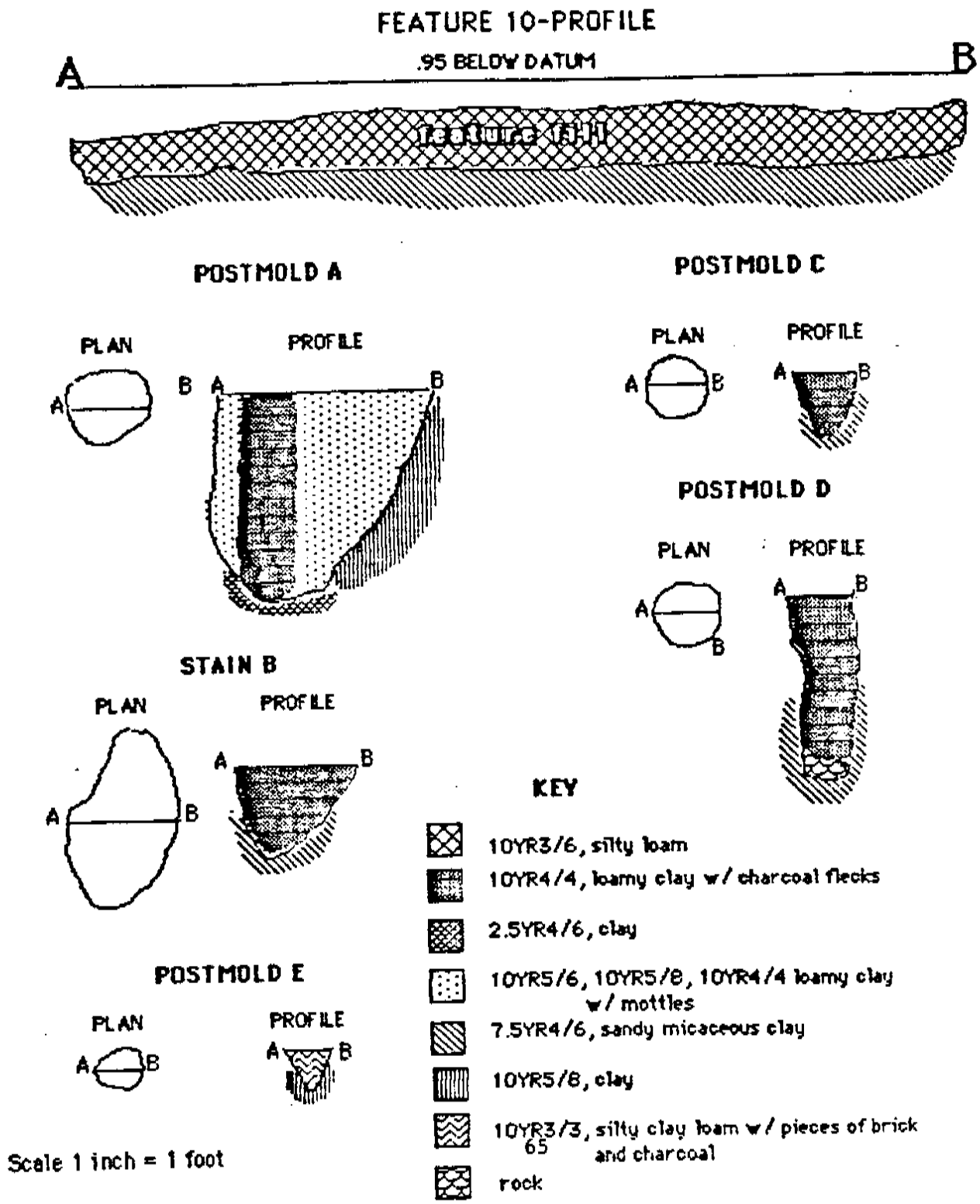


FIGURE 21
H. GRANT TENANCY SITE (7NC-B-6)
PROFILE, FEATURE 10, POSTMOLDS AND STAIN-PLAN VIEWS AND PROFILES



An additional postmold was located just outside the northwest corner of the feature (Postmold E, Figure 21). These stains varied in depth and only one (A) contained a definite outer stain surrounding the postmold. The artifacts from Feature 10 include 151 ceramics, 19 pieces of window glass, 7 cut nails, 2 tobacco pipe fragments and a number of small brick and coal fragments. The ceramics included 71 pearlware, 5 yellowware, 3 creamware, 4 porcelain, 18 whiteware and 33 redware fragments. Other artifacts recovered include a gunflint and a harness ring. The feature appears to be the remains of a small structure such as a shed or outbuilding, however, because of the limited amount of information remaining, this cannot be certain.

Features 2 and 11

These two cross-cutting features were located west of Feature 10. The plan and profile of each feature are included in Figure 22. Feature 2 was a rectangular stain measuring 1.9 by 3.1 feet. The feature fill consisted of a dark yellowish brown silty loam and the artifacts contained within the feature included 24 ceramic fragments, 1 piece of window glass, 1 cut nail, 1 brick fragment and 1 tobacco pipe fragment. Feature 11 intruded into Feature 2 and consisted of a circular stain measuring 2 feet in diameter with a basin shaped bottom. The fill was similar in color and texture to Feature 2 except that Feature 11 contained more charcoal flecks. Feature 11 may have been a posthole stain in which the postmold was either not discernible or the post had been removed. The artifacts recovered from Feature 11 were very similar in type and quantity to those recovered from Feature 2. They include a total of 31 ceramics, 4 window glass sherds, 5 cut nails, 2 tobacco pipe fragments, 2 can fragments and 13 brick fragments.

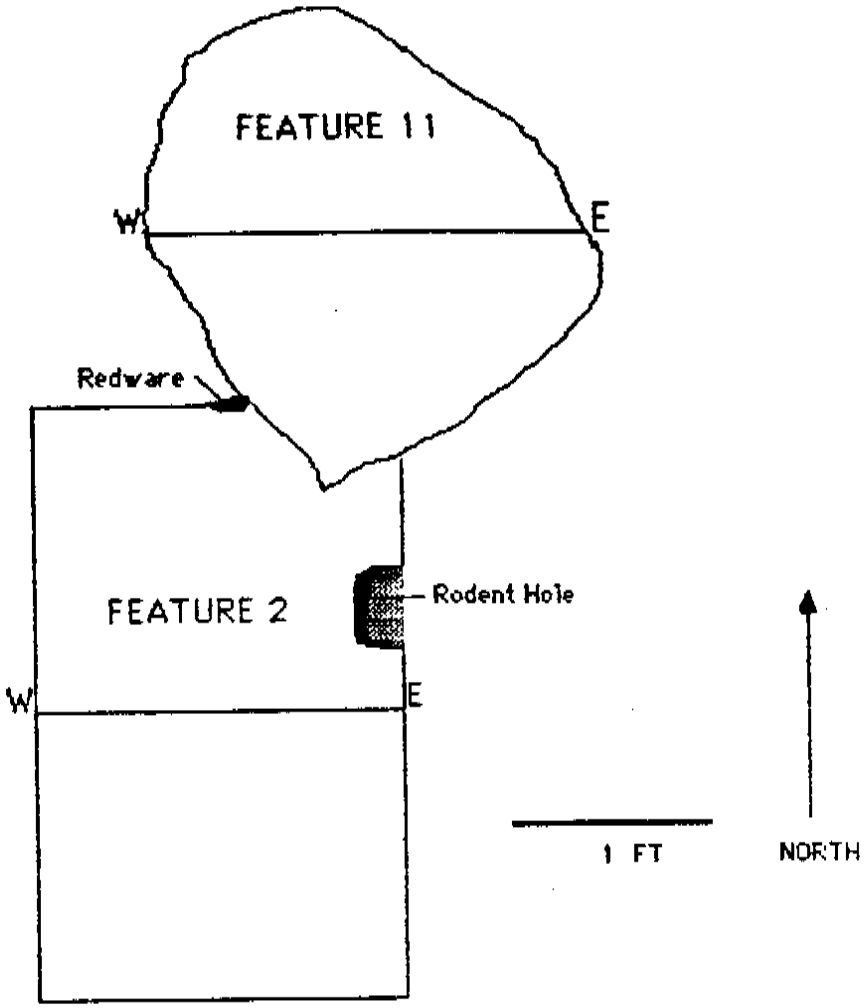
Feature 9

Feature 9 was a square stain measuring 3.7 feet on each side. It was relatively shallow and was originally thought to be the base of a short term privy. This hypothesis was based upon the shape of the feature, however, and soils analysis showed this not to be the case, as the phosphorus content was too low. The function of this feature is therefore unknown. The feature fill consisted of dark yellowish brown silty loam mixed with charcoal and brick flecks. The depth of the deepest point measures .5 feet below the surface of the suboil. The plowzone removed above the feature was 1.1 feet in thickness. The artifacts recovered from the feature included brick and coal fragments, as well as 5 mortar fragments. The plan and profile are shown in Figure 23.

Feature 12

Feature 12 is located 16 feet grid north of the northwest corner of the cellar foundation. It is measured 2.7 by 2.9 feet and is nearly square (Figure 24). The feature fill consisted of a dark brown silty sand loam with a considerable amount of mortar and gravel mixed within the fill matrix. The boundaries in plan

FIGURE 22
H.GRANT TENANCY SITE (7NC-B-6)
Feature 2 and Feature 11, Plan and Profile



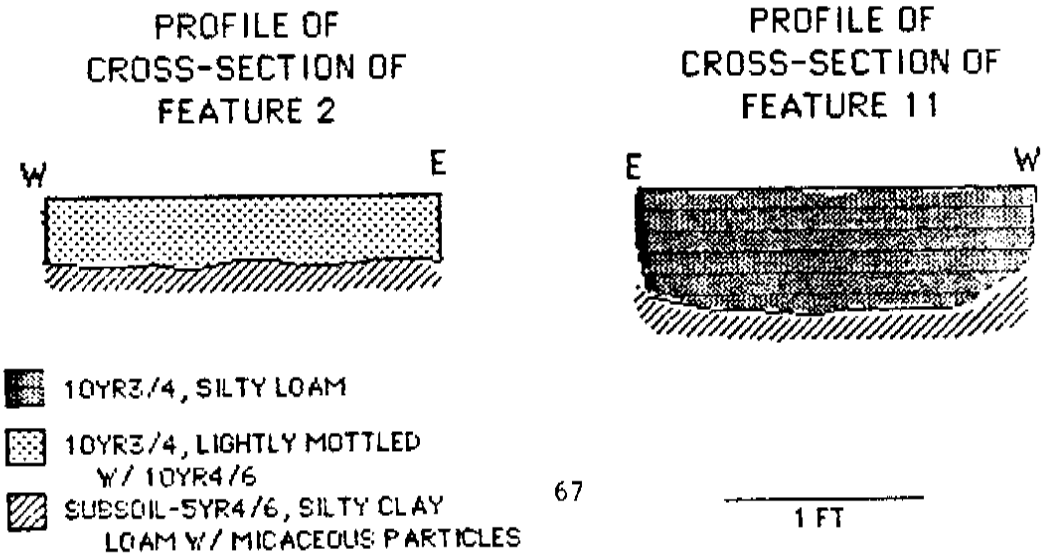
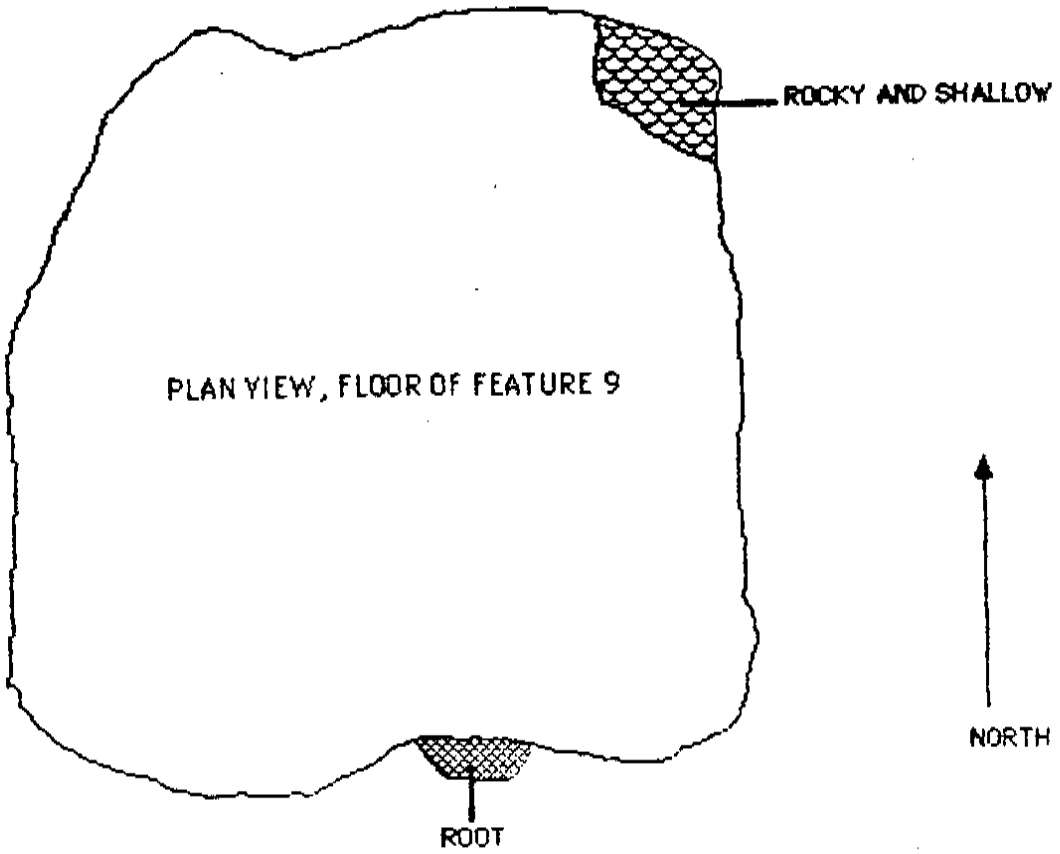
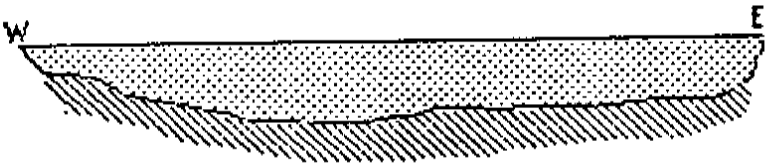


FIGURE 23
H. GRANT TENANCY SITE (7NC-B-6)
FEATURE 9, PLAN VIEW OF FLOOR AND PROFILE OF NORTH HALF



PROFILE, NORTH HALF OF FEATURE 9



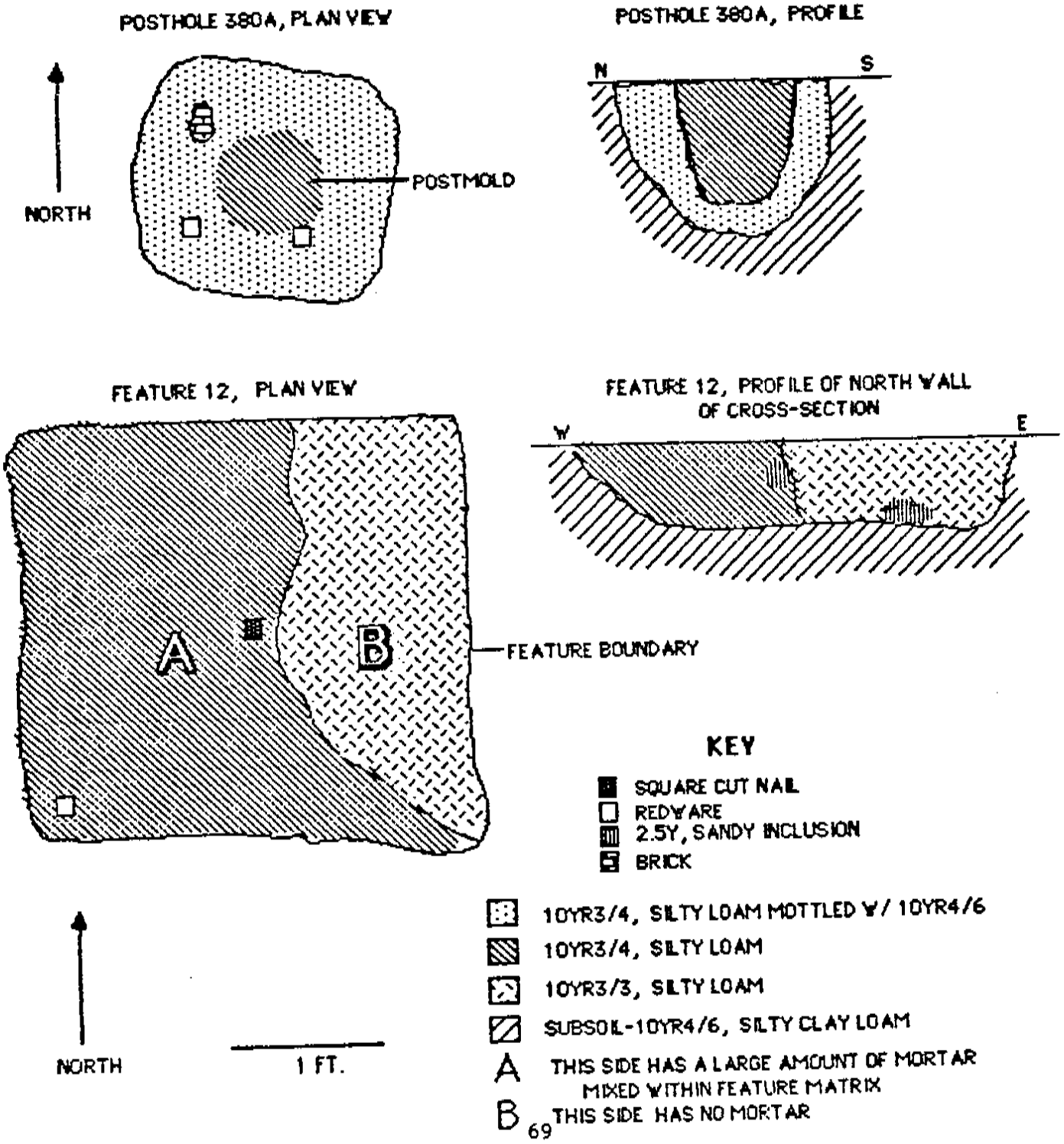
KEY

10YR3/6, SILTY LOAM MIXED W/ CHARCOAL AND BRICK FLECKS

SUBSOIL-10YR5/8, CLAY LOAM

SCALE-1" = 1 FT.

FIGURE 24
H. GRANT TENANCY SITE (7NC-B-6)
FEATURE 12 AND POSTHOLE 380A, PLAN VIEWS AND PROFILES



view and cross section were sharp. Several rocks were contained within the fill, the largest measuring .5 feet in length. The artifacts recovered from the fill include 14 ceramics, 3 sherds of window glass, 7 cut nails, in addition to a number of brick and coal fragments. Its function is uncertain, however, one possibility is a pillar footing indicating another structure. A postmold was located .4 feet to the northwest and consisted of an outer post hole stain with a centrally located postmold. The profile is shown in Figure 23. The postmold was square and measured .6 feet on a side. The surrounding stain measured 1.4 feet in diameter. This seems large for a fence post and it may be related to Feature 12.

Other Features

The remaining feature numbers were assigned to stains or irregularities in the subsoil which were subsequently identified as either natural depressions in the subsoil or plowscars. These included Feature Nos. 1 and 3-6. Feature No. 5 was assigned to the midden south of the house which was described earlier in the report. The postmolds uncovered during the plowzone removal will not be discussed individually to avoid redundancy. A fence row is apparent in the E340 backhoe strip and followed a course along the grid north axis of E355. The postmolds are spaced between six and eight feet. None of the remaining postmolds could be associated in a linear pattern except those which have already been discussed.

Near the end of the fieldwork, four trenches were excavated using the backhoe in the area that fell within the construction right-of-way. Construction was due to begin on the road and this area was quickly tested using the backhoe to insure that no portions of the site would be lost to construction. Trenches 1, 2 and 3 (Figure 2) were excavated to the base of the plowzone and then flat shoveled by hand to identify any features that might be present. None were found. Trench 4 was excavated through a portion of the midden deposit to help determine its extent. Figure 14 was taken predominantly from this trench and shows the relationship of the midden to the plowzone and subsoil.

Intrasite Analysis

As mentioned in the previous discussion, the artifacts recovered from the site were separated into several provenience groupings based upon their soil and depositional contexts and to some degree (particularly with reference to the miscellaneous group), on the collection methods and integrity of the materials collected. These groups include: the Controlled Surface collection, the Midden (Feature 5), the 2Ap over the foundation, the Cellar Fill, the Cellar Floor Midden, the "Exterior Midden, East side of house", the Ash and Brick Concentration, the Builder's Trench, the General Surface Collection, and the various features. All intrasite analysis was done on the basis of these groupings.

Dating the Contexts

The various contexts/provenience groupings were dated using several methods. These were South's (1972) Mean Ceramic Date and Visually Interpreted Bracket Dates (1972, 1977) as well as an examination of the artifacts to determine the "termini post quem". The termini post quem was based on either ceramic or glass technology or, in some cases, coins.

The first analytical computeration performed on the provenience groupings consisted of calculating the Mean Ceramic Date. Stanley South's (1972, 1977) types were used with one additional type added by us to account for items which were clearly pearlware but which could not be placed in any one of South's types. This additional type was called "General Pearlware" and the dates for this type are based on the beginning date given for pearlware in South's types and the latest date for pearlware in South's types. The Mean Ceramic Date in Table 1 is expressed using South's types (MCD ST) as well as using the "General Pearlware" category (GP MCD). In the majority of the cases, there was very little difference. The formula used to calculate both of the Mean Ceramic Date expressions was developed by South (1977:217) and is as follows:

$$Y = \frac{\sum_{i=1}^{n} Xi \cdot fi}{\sum_{i=1}^{n} fi} \quad \text{(1.1 years)}$$

Chinese porcelain Types 26 and 39 are not included in the calculation of the Mean Ceramic Date.

The Visually Interpreted Bracket Dates consist of plotting the median beginning and ending dates for each of South's types represented in the assemblage (see South 1972, 1977 for a more detailed explanation of this dating method).

The dates for the provenience groupings are presented below, from earliest to latest, with the exception of the features, which are presented at the end.

Cellar Floor Midden

This context consisted of midden deposit which was contained within the cellar foundation, under the cellar fill. The midden deposit was interpreted by us as a living floor which was deposited during the occupation of the structure. The Mean Ceramic Date obtained for this context was 1812.15 and the Visually Interpreted Bracket Dates were 1790 and 1825. No diagnostic artifacts were found, with the exception of ceramics, to aid in dating this assemblage. The terminus post quem is

TABLE 1

MEAN CERAMIC DATES, H. GRANT TENANCY SITE
INTRASITE PROVENIENCE GROUPINGS

PROVENIENCE GROUPING	MEAN SOUTH'S CERAMIC DATES	MEAN GP CERAMIC DATES
Site Total	1814.91	1816.37
Cellar Floor Midden	1812.15	1812.15
Builder's Trench	1812.60	1812.76
Midden	1812.92	1813.82
Controlled Surface	1812.99	1813.55
Plowzone	1814.54	1816.70
2Ap Over Foundation	1818.43	1819.36
Cellar Foundation Fill	1818.43	1819.30
Backhoe Backdirt	1818.54	1818.85
Exterior Midden, East	1825.18	1825.77
Ash and Brick Concentration	1831.87	1831.94
Feature 2	Sherd Count too small	
Feature 8	1817.83	1819.60
Feature 10	1815.15	1815.96
Feature 11	1814.96	1814.96

provided by South's beginning date for the whiteware ceramic type - 1820.

Builder's Trench

This context was composed of a builder's trench which was located immediately adjacent to the cellar wall. The Mean Ceramic Date for this context was calculated at 1812.60, using only South's types and 1812.26 using the "General Pearlware" type as well. The Visually Interpreted Bracket Dates for this context are 1790 and 1820 and the terminus post quem is again proved by South's beginning date for whiteware - 1820. No other diagnostic artifacts were present.

Midden (Feature 5)

The midden was dark brown layer of soil located stratigraphically between a layer of field stones which represent a filled-in erosional gully or road bed and the plowzone, with the plowzone being located above the midden. Two possible interpretations were offered for this feature, one is that the feature constitutes an in situ refuse deposit and the other is that artifact bearing soil was placed in the erosional gully in order to level the ground for agricultural purposes. The Mean Ceramic Dates for the midden are 1812.92 using only South's types and 1813.82 using the "General Pearlware" category as well. The Visually Interpreted Bracket Dates are 1780 and 1820. A bottle fragment with a glass tipped pontil mark was found in the midden as well. This can be dated from ca. 1810-1857, on the assumption that pontils were not frequently used after the invention of the snap case in 1857 (Rehner 1977). Another mold blown bottle was present which showed evidence of a lipping tool and can be dated from 1850-1903. The terminus post quem is provided by the lipping tool - 1850.

Controlled Surface Collection

The Mean Ceramic dates for the controlled surface collection are 1812.99 using only South's types and 1813.55 using the "General Pearlware" type. The Visually Interpreted Bracket Dates are 1790 and 1820. A 1961 copper penny was present as well as machine made glass. The machine made glass dates from 1903 to the present (Rehner 1977). This is based upon the date for the introduction of the fully automatic bottle machine. Mold blown glass was also present and consisted of a bottle with evidence of a lipping tool (1850-1903), a two piece mold blown with a pontil mark (1840-1857), and a panel bottle with letter embossing (1867-1903) (Rehner 1977).

Plowzone

The Mean Ceramic Dates for the plowzone are 1814.54 for South's types and 1816.70 for "General Pearlware". The Visually Interpreted Bracket Dates are 1780 and 1820. Other diagnostic artifacts from the plowzone include a 2-piece mold blown bottle

with a pontil mark (1840-1857, Rener 1977), an 1859 Indian Head Cent, an 1858 Flying Eagle Cent and 1852 Silver Cent.

2Ap (Plowzone) Over Foundation

The 2Ap over foundation context consisted of a second plowzone lying directly over the cellar foundation. The Mean Ceramic Dates for this group are 1818.43 for South's types and 1819.36 using "General Pearlware". The Visually Interpreted Bracket Dates are 1790 and 1820. Two mold blown bottle fragments were found and although the specific mold type could not be determined, they can be dated from 1810-1903 (Rener 1977). A mold blown panel bottle dating from 1867-1903 was also found (Rener 1977). A shank button was present in this horizon. This button was marked with an eagle and "A.N. HORSTMANN & ALLIEN". It must date to after 1850 as this is the date when Henry V. Allien was taken into partnership in the New York branch of the Wm. H. Horstmann Co. (New England Publishing Co. 1972). This company made military furnishings. The terminus post quem, 1867 is provided by the panel bottle.

Cellar Foundation Fill

The cellar foundation fill was a fill zone lying directly inside of the foundation walls and is thought to have resulted from the intentional filling of the cellar. The Mean Ceramic Dates for this zone are 1818.43 for South's types and 1819.30 using "General Pearlware". The Visually Interpreted Bracket Dates are 1790 and 1825. The diagnostic glass included a bottle with evidence of a lipping tool (1850-1903), a 2-piece mold blown bottle with a pontil mark (1840-1857) and an embossed panel bottle dating from 1867-1903 (Rener 1977). Additional dating information is provided by an 1838 copper cent, a large "Coronet" cent (1816-1834) and a copper half cent (1800-1808), as well as a stoneware bottle marked "J. B. Bryant, 1847". It is unclear what this date and name refer to, whether it is the bottler of the contents or a local tavern owner or private citizen. The terminus post quem is provided by the beginning date for the panel bottle.

Exterior Midden, East

This provenience grouping consists of artifacts from a rectangular shaped pit on the east side of the house. Because of the nature of the soil, this was originally thought to be a midden, hence the name. However, upon excavation and closer examination of the feature, it was determined to be the remains of an outbuilding or addition to the main structure. The label "Exterior Midden, East" was kept to avoid confusion. The Mean Ceramic Dates for the group are 1825.18 using South's types only and 1825.77 using the "General Pearlware" category. The Visually Interpreted Bracket Dates are 1780 and 1830. No other artifacts were recovered which would aid in the dating of this feature. The terminus post quem is provided by the beginning date for whiteware - 1820.

Ash and Brick Concentration

The ash and brick concentration was located in the northeast corner of the cellar and appears to be a refuse deposit placed in the cellar prior to the cellar filing. The Mean Ceramic Dates are 1831.87 for South's types and 1831.94 using "General Pearlware". The Visually Interpreted Bracket Dates are 1790 and 1830. Mold blown bottle fragments dating from 1810-1903 (Rener 1977) were recovered. Again, the terminus post quem is provided by the beginning date for whiteware - 1820.

Feature 8

Feature 8 consisted of a well adjacent to the house foundation. The Mean Ceramic Dates for this feature are 1817.83 using South's types and 1819.60 using "General Pearlware". The Visually Interpreted Bracket Dates are 1790 and 1820. A copper half cent which was minted from 1809 to 1836 was found in this feature; the exact date on the coin could not be determined. The terminus post quem is provided by the beginning date on South's whiteware type - 1820.

Feature 10

Feature 10 was interpreted as the remains of a small shed or outbuilding. The Mean Ceramic Dates for this feature are 1815.15 for South's types and 1815.96 using "General Pearlware". The Visually Interpreted Bracket Dates are 1780 and 1825. No other artifacts were found which would aid in the dating of this context.

Features 2 and 11

Feature 2 was a rectangular stain into which Feature 11, a circular stain, intruded. Neither Mean Ceramic Dates nor Visually Interpreted Bracket Dates could be calculated for Feature 2, as the sherd count was too small. The Mean Ceramic Date for Feature 11 is 1814.96; no "General Pearlware" was present. This date, although provided here as a point of comparison with the Visually Interpreted Bracket Dates, is also suspect because of a shall sherd count. The Visually Interpreted Bracket dates are 1795 and 1830. No other datable artifacts were found for either feature.

Summary of Context Dating

In general, the Mean Ceramic Dates for the H. Grant Tenancy site fall within a very close range, ca. 1812-1819. The artifact assemblage suggests an occupation confined to the first half of the nineteenth century. Although a few examples of 18th century ceamics, such as delftware, were present as well as creamware, neither was particularly numerous. In addition, at the other end of the time range, the number of whiteware and ironstone sherds was relatively small compared to the total sherd count. Both the

glass and the ceramic artifacts indicate an occupation range beginning in the early part of the 19th century and ending by the Civil War. All of the contexts associated directly with the occupation such as Feature 8 (the well), the Cellar Floor Midden and the Builders Trench have terminus post quems which predate 1850. Most of the terminus post quems are 1820 because of the presence of whiteware. The Cellar Fill, which is interpreted as a deliberate filling-in of the structure foundation, has a terminus post quem of 1867, as does the 2Ap. The 2Ap had a Mean Ceramic Date of 1818.43 in addition to panel bottle fragments (1867-1903) and a button which could not date earlier than 1850. The presence of this plowzone seems to give a date prior to 1867, when the cellar could actually have been used.

The only two Mean Ceramic Dates which are later than 1819 are derived from the "Exterior Midden, East" (1825) and the Ash and Brick Concentration (1831). The later date for the "Exterior Midden" is not surprising since it appears to represent a later structural addition to the house and may be closer to the end of the occupation. The Ash and Brick Concentration was a much smaller sample.

In general, the Mean Ceramic Dates are somewhat earlier than anticipated. To a large extent, this is because of the overwhelming representation of pearlware in the assemblage. In theory, the Mean Ceramic Date represents the middle of the occupation and, in this case, would push the beginning of the occupation into the 18th century. This is unlikely based both on the small number of sherds which are 18th century types and the presence of mold blown glass from hinged molds which could not date earlier than 1810 (Rener 1977). The skewing due to the preponderance of pearlware in the assemblage is particularly evident in the Visually Interpreted Bracket Dates which, in theory, represent the range of occupation at the site. These tend to simply echo the beginning and ending dates for pearlware (i.e. undecorated pearlware is dated by South at 1780-1830). This does not fit with the other diagnostic artifacts such as the glass.

South's Function Analysis - Intrasite

Procedures for the examination of functional groups of artifacts have been developed for historic sites by Stanley South, using a system of increasingly generalized groupings of artifacts, following a model based on ceramics which proceeds from "type" through "ware" and "class" to "group" (South 1977:92-93). The assignments are based on South's perception of what is "useful" (South 1977:92) based on his experience mainly with Colonial Period sites. His analysis produced a range of distributions of the proportions of the various artifact groups that was sufficiently regular that he defined as the "Carolina Artifact Pattern". In general, 18th century domestic sites will approximate this pattern, based on a variety of subsequent studies. Other kinds of sites sometimes vary in regular ways

from this pattern, producing their own kinds of patterns such as the "Frontier Artifact Pattern" (South 1977).

At the Grant Tenancy site, South's functional analysis was used initially to compare the various provenience groupings with one another to determine if any intrasite functional differences were apparent. The results of the comparisons of the Grant Tenancy provenience groupings to South's Carolina Pattern are shown in Table 2. The comparisons to South's Carolina Pattern was done both on a straight percentage basis and also by using a statistical test to quantify any differences and/or similarities observed. This statistical test is the Robinson Coefficient of Agreement (Doran and Hodson 1975:139). The measure was calculated for each pairwise comparison between the groups. The expectation is that assemblages that result from the same kinds of functional activity sets will have similar percentages of functional artifacts groups and, therefore, higher values of the Coefficient. If two provenience groups have high values of the Robinson Coefficient it means that they are alike; that the same kinds of functional activities are represented in the two groups. Conversely, if the two groups have low values, it means that there are differences in the functional activities. The formula for the Coefficient is as follows:

$$SRij = 200 - \sum_{k=1}^{n} IP_{ik} - P_{jk} I$$

The results of the analysis and the comparison to South's Carolina Pattern are presented by provenience group below. A discussion of the significance of the results of the Robinson Coefficient is presented after the results.

Controlled Surface

The Controlled Surface provenience group showed a considerably higher percentage of South's Group 1 (kitchen) artifacts than observed for the Carolina Pattern, i.e. 83.09% as opposed to between 51.8-69.2% for the Carolina Pattern. There was a corresponding decrease in the Group 2 (architectural) artifacts for the Controlled Surface assemblage (10.95%) when compared to the Carolina Pattern (19.7-31.4%). The low values for the architectural group may be the result of the deliberate destruction of the structure and the hypothesized scavenging. The values for the furniture group, Group 3, from the controlled surface collection at Grant Tenancy (.19%) were within the range of the Carolina Pattern, .1-.6%. The arms group, Group 4, is also low (0.3%) in comparison to the Carolina Pattern (.1-1.2%). Plate 12 shows artifacts from the arms group and the prehistoric artifacts. Artifacts from Group 5 (clothing) were not within the Carolina Pattern scale (.6-5.1%), comprising .28% of the total. Plate 13 shows artifacts from the clothing group. Group 6, personal group, artifacts were .09% of the total assemblage, which is quite low in comparison to the Carolina Pattern (.1-.5%). Tobacco pipes, Group 7, represented 5.18% of the

TABLE 2

SOUTH'S FUNCTION GROUPS, INTRASITE

Provenience Group	Souths's Function Group 1 Kitchen	2 Architecture	3 Furniture	4 Arms	5 Clothing	6 Personal	7 Tobacco Pipe	8 Activities
Carolina Pattern								
Mean	63.10%	25.5%	.20%	.50%	3.00%	.20%	5.80%	1.70%
Range	51.8-69.2	19.7-31.4	.1-.6	.1-1.2	.6-5.1	.1-.5	1.8-13.9	.9-2.7
Grant Tenancy								
Controlled Surface	83.09%	10.95%	.19%	.03%	.28%	.09%	5.18%	.19%
Plowzone	87.17%	10.40%	.14%	.03%	.29%	.09%	1.68%	.20%
Midden	83.55%	14.53%	0%	0%	.21%	.06%	1.60%	.05%
Ext. Midden E	66.04%	30.19%	0%	0%	.94%	0%	2.83%	0%
2Ap	53.58%	42.97%	.23%	.06%	.49%	.06%	2.03%	.58%
Cellar Fill	52.76%	43.04%	.33%	.02%	1.30%	.12%	1.82%	.63%
Cellar Midden	75.63%	23.53%	0%	0%	0%	.84%	0%	0%
Ash/Brick	75.58%	22.64%	0%	0%	1.35%	0%	.54%	1.89%
General Surface	81.88%	13.13%	.31%	0%	.63%	.31%	1.88%	1.88%
Builders Trench	60.39%	37.36%	0%	.28%	0%	0%	1.40%	.56%
Feature 1	64.71%	29.41%	0%	0%	0%	0%	5.88%	0%
Feature 2	88.89%	7.41%	0%	0%	0%	0%	3.70%	0%
Feature 2/83	75.68%	21.62%	0%	0%	2.70%	0%	0%	0%
Feature 6	87.50%	12.50%	0%	0%	0%	0%	0%	0%
Feature 7	80.00%	20.00%	0%	0%	0%	0%	0%	0%
Feature 8	89.11%	9.49%	0%	0%	.23%	.13%	1.01%	.13%
Feature 9	0%	0%	0%	0%	0%	0%	0%	0%
Feature 10	84.10%	13.33%	.51%	.51%	0%	0%	1.03%	.51%
Feature 11	76.60%	19.15%	0%	0%	0%	0%	4.26%	0%
Feature 12	57.69%	38.46%	0%	0%	0%	0%	0%	3.85%
Feature 14	100%	0%	0%	0%	0%	0%	0%	0%
Feature 15	100%	0%	0%	0%	0%	0%	0%	0%
Feature 16	58.33%	8.33%	0%	0%	0%	0%	33.33%	0%
Features 18, 19, 20, 22	26.67%	66.67%	0%	0%	0%	0%	6.67%	0%
Feature 21	50%	50%	0%	0%	0%	0%	0%	0%

PLATE 12

GUNFLINTS AND PREHISTORIC BIFACES

PLATE 13

BUTTONS

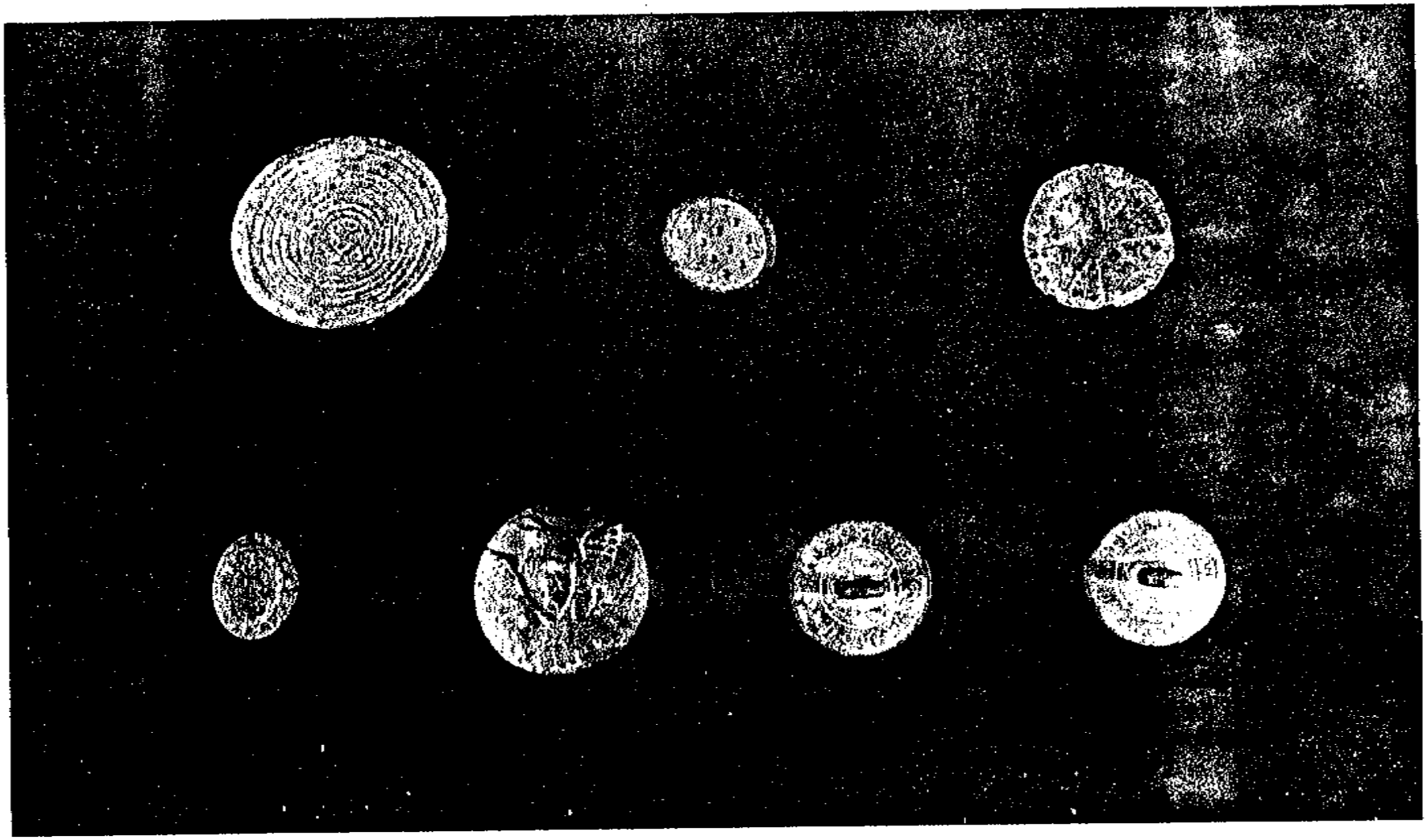
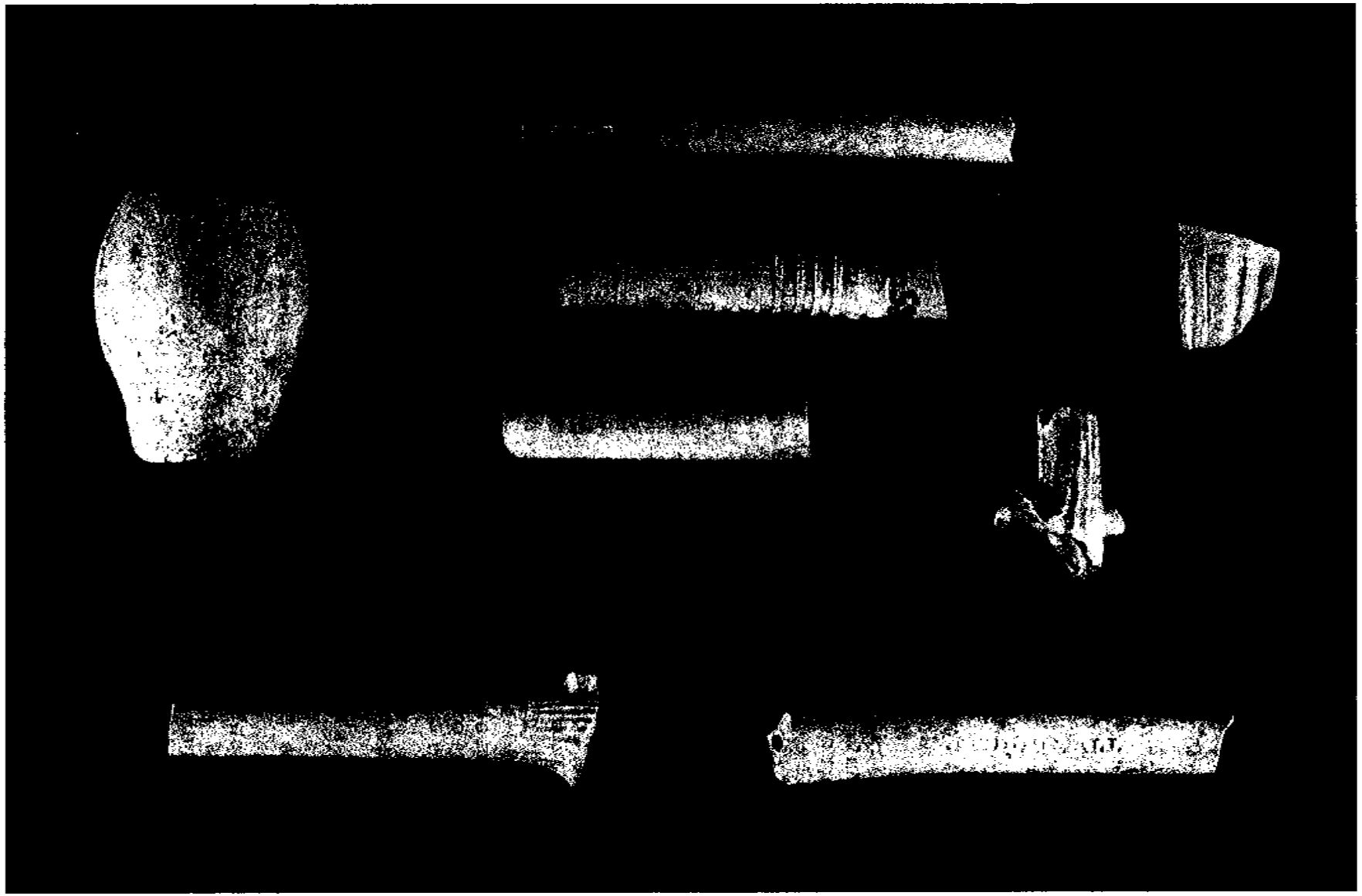


PLATE 14

TOBACCO PIPES



collection. This is in the middle range of the Carolina Pattern (1.8-13.9%). Plate 14 presents a sample of the pipes recovered. Group 8, the activities group, diverges quite a bit from the Carolina Pattern (.9-2.7%), representing .19% of the total assemblage. Plates 15-17 present examples of other artifacts recovered.

With respect to the Srij comparisons, the highest values, 191.80% and 191.92%, are achieved with the Plowzone and the Midden, respectively. The lowest comparisons were with the 2Ap over the foundation (134.62%) the Cellar fill (132.59%), and Feature 12 (137.66%).

Plowzone

Like the Controlled Surface Collection, the Plowzone also contained a high percentage of kitchen artifacts (87.17%) and a low percentage of architectural artifacts (10.40%) when compared to South's Carolina Pattern. The furniture group, although somewhat low (.14%), was within the Carolina Pattern range. The arms group percentage was identical to that of the controlled surface collection (.03%) and was correspondingly low in comparison to the Carolina Pattern. The clothing group consisted .29% of the total artifact assemblage. The personal group percentage was low (.09%) compared to the Carolina Pattern. Group 7, tobacco pipes was also low (1.68%) falling just outside South's range. As with the Controlled Surface Collection, the representation of artifacts from the activities group was low (.20%).

As could be expected, the highest Srij comparisons were with the Plowzone and the Midden with 191.80% and 191.74%, respectively. High comparisons were also received with Feature 8 (196.04%) and Feature 10 (191.81%). Like the Controlled Surface Collection, the lowest comparability was with the 2Ap over foundation (132.76%) and the Cellar Fill (131.14%). A low value was also achieved in comparison to Feature 12 (136.58%).

Midden

Like the previous two provenience groups, the Midden also showed a much higher percentage of kitchen artifacts (83.55%) than the Carolina pattern. Although higher than the other two groups, the percentage of architectural artifacts was correspondingly low (14.53%). Neither the furniture group nor the arms group were represented in this collection and all four of the remaining groups had low representations when compared to the Carolina Pattern. The percentages were as follows: clothing group .21%, personal group .06%, tobacco pipe group 1.60% and activities group .05%.

The highest Srij values were with the Controlled Surface Collection (191.92%), the Plowzone (191.74%), and Feature 10 (195.93%). The lowest were with 2Ap over foundation (140.06%), the Cellar Fill (138.41%), and Feature 12 (144.54%).

PLATE 15

PITCHER

PLATE 16

MISCELLANEOUS METAL ARTIFACTS

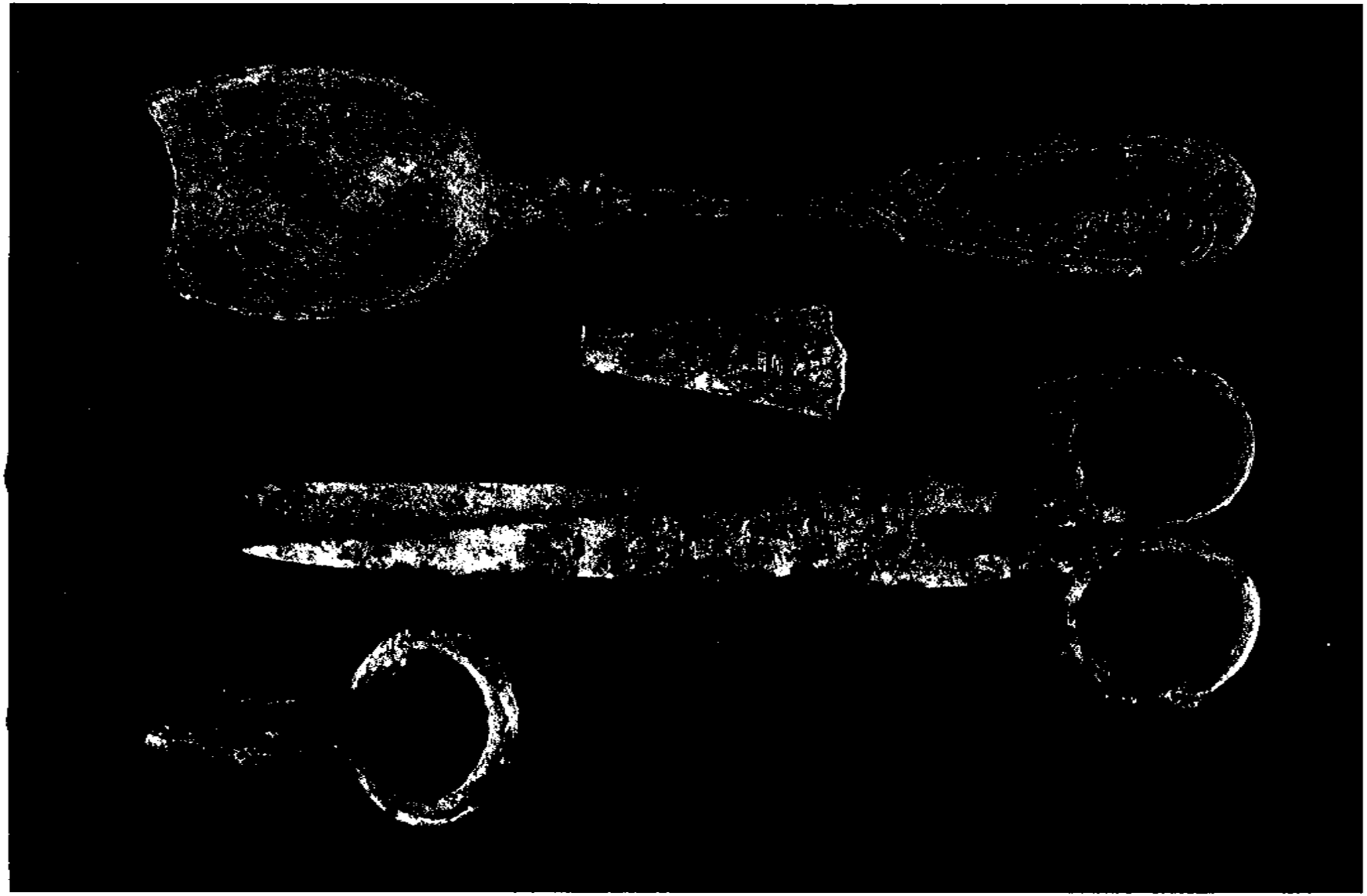
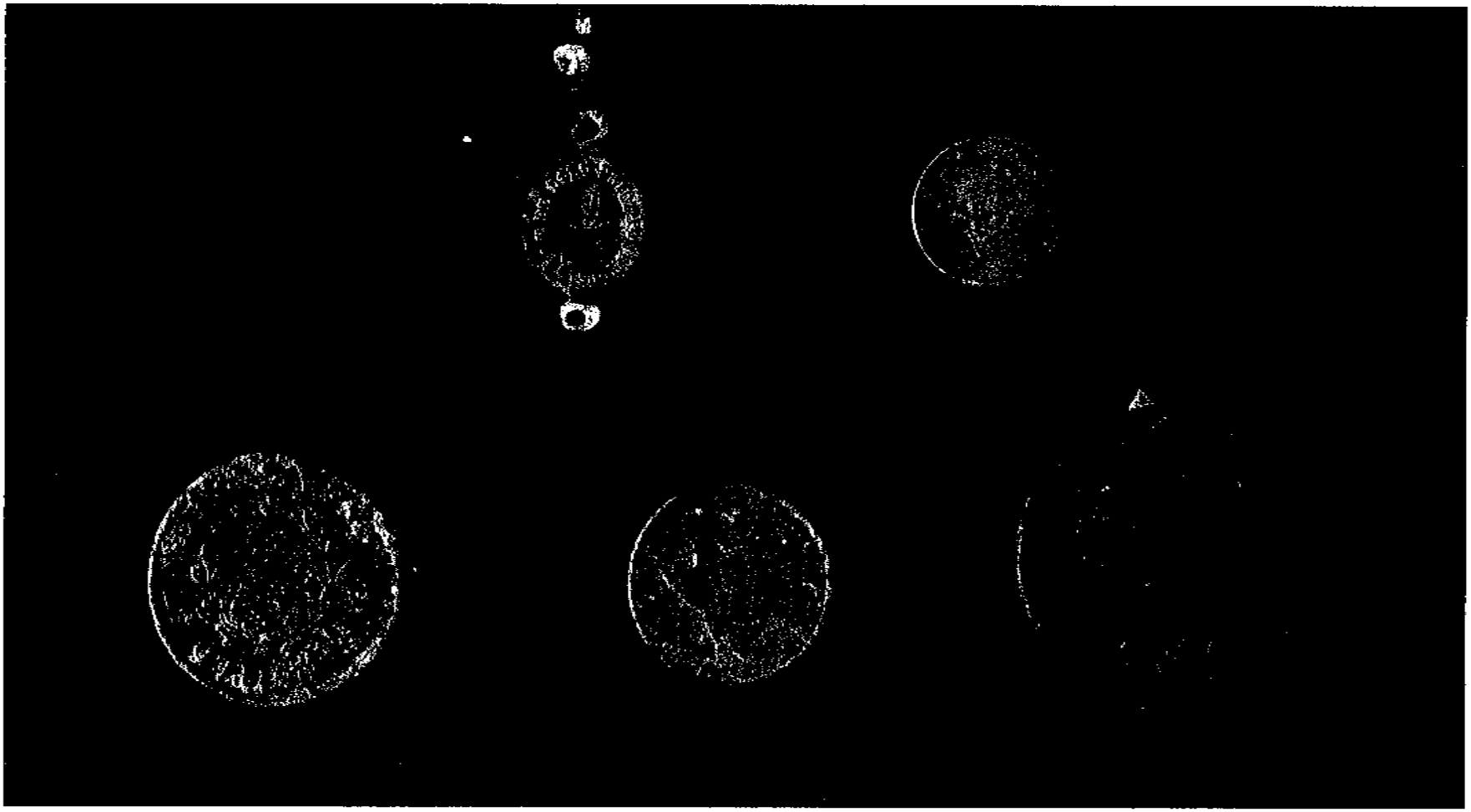


PLATE 17

COINS AND RELIGIOUS MEDAL



Exterior Midden, East

In contrast to the previous provenience groups, the kitchen group constituted a much lower percentage of the assemblage from the "Exterior Midden" (66.04%), with a corresponding increase in the architectural group (30.19%). These figures, although at the high end, fall within the ranges for the Carolina Pattern. The furniture, arms, personal and activities groups are not represented at all in this provenience group. This is probably a result of the small sample size (106 items). The representation for the clothing group is within the Carolina Pattern, constituting .94% of the total assemblage.

With respect to the Robinson Coefficient, the highest values were achieved with the Ash and Brick concentration (180.32%) and the Builder's Trench (183.97%). The lowest values were with Feature 2 (152.56%) and Feature 8 (153.34%).

2Ap Over Foundation

In general, the 2Ap over foundation provenience group was more representative of the Carolina Pattern. The kitchen group constituted 53.58% of the assemblage which is at the low end of South's range. The architectural group was 42.97%, which is high. The furniture group was .23%, close to South's mean for the group. The arms group was .06% which is low; the clothing group was .49% which is not within South's range; the personal group was .06% which is low; the tobacco pipe group was 2.03% which is at the low end of South's range and the activities group was .58% which, although low compared to the Carolina Pattern, is higher than the preceeding provenience groups.

The highest Srij values were obtained for the Cellar Fill (197.85%), the Builder's Trench (185.93%) and Feature 12 (185.24%). It is not surprising that high pairwise comparisons would be obtained for the Cellar Fill and the Builder's Trench as the 2Ap zone lay directly over these groups. Proximity is probably the operating factor here. Low pairwise comparisons were obtained for Feature 2 (126.04%), Feature 8 (128.80%) and Feature 10 (100%).

Cellar Fill

As with the 2Ap over foundation, the Cellar Fill had a low representation of kitchen artifacts (52.76%) and a high percentage of architectural items (43.03%). Items from the furniture group comprised .33% of the total which is above the mean for South's Carolina Pattern. The arms group is .02%, the clothing group is 1.30%, the personal group is .12%, the tobacco group is 1.82% and the activities group is .63%. The clothing group, the personal group and the tobacco pipe group are within South's ranges for the Carolina Pattern. The arms group and the activities group are low.

The highest pairwise comparisons were with the 2Ap over foundation (197.85%), the Builder's Trench (184.20%) and Feature 12 (183.69%). The lowest values were obtained for Feature 2 (123.97%) and Feature 8 (127.27%).

Cellar Floor Midden

The Cellar Floor Midden contained a much higher percentage of kitchen artifacts (75.63%) than the Cellar Fill and a corresponding lower percentage of architectural (23.53%). Probably because of the small sample size, the furniture, arms, clothing, tobacco pipe and activities groups were not represented at all. The personal group was high (.84%) in comparison with South's Carolina Pattern.

The Cellar Floor Midden showed strong affinities with the Ash and Brick concentration (192.44%) and Feature 2/83 (194.50%). A rather strong correlation is also evident between the Cellar Floor Midden and the Midden (180.44%).

Ash and Brick Concentration

Kitchen group artifacts represent 73.58% of the assemblage from this provenience group and the architectural group represents 22.64%. Neither the furniture group nor the arms group are represented at all. The clothing group represents 1.35% which is within South's Carolina Pattern. The personal group is not represented. Tobacco pipes are .54% of the artifacts which is low. The activities group is 1.89% of the total, which is over South's mean, although in the range.

The Ash and Brick concentration had the highest pairwise comparisons with the Cellar Midden (192.44%) and Feature 2/83 (194.50%), All of the other pairwise comparisons were relatively high, 155% or greater.

General Surface

Artifacts from the kitchen group from the General Surface Collection represent an extremely high percentage (81.88%) of the assemblage. The architectural group artifacts are correspondingly low, comprising 13.13%. Items from the furniture group were .31% of the total which is within South's range and slightly higher than the mean. No artifacts from the arms group were found. The clothing group comprised .63% of the total, which is just within South's range. Personal items comprised .31%, tobacco pipes comprised 1.88% and activities comprised 1.88%, all of these are within South's Carolina Pattern.

Most of the pairwise comparisons were relatively high, with the Controlled Surface (190.90%), the Midden (193.84%) and Feature 10 (193.71%) being the highest. The lowest values were for the 2Ap over foundation (139.88%) and the Cellar Fill (138.77%).

Builders Trench

Kitchen artifacts from the Builder's Trench comprised 81.88% of the total with architectural items following at 13.13%. The furniture group the clothing group and the personal group are not represented in this collection. Items from the arms group comprise .28% of the total, which is within South's range for the Carolina Pattern. Tobacco pipes were 1.40% of the assemblage and activities group items were .56% of the total, both of which are outside South's range.

Features

Only two features contained sample sizes sufficient for comparative purposes, Feature 8 and Feature 10. Kitchen group items comprised 89.11% of the assemblage from Feature 8, while architectural items were 9.49% of the total. Neither the furniture group nor the arms group were represented. Items related to clothing comprised .13% of the total as did artifacts from the personal and activities groups. Only the personal group is within South's ranges for the Carolina Pattern. Tobacco pipes comprised 1.01% of the assemblage; this is below South's range. In Feature 10, items from the kitchen group constituted 84.10% of the total and architectural constituted 13.33%. Artifacts from the furniture, arms groups are within South's ranges while the activities group is below. The clothing and personal groups were not represented. The tobacco pipe group was also low, representing 1.03% of the total.

The highest pairwise values for Feature 8 were with the Plowzone (196.04%) and Feature 2 (194.62%). The lowest were the 2Ap over foundation group (128.80%) and the Cellar Fill group (127.27%). Feature 10 showed the greatest similarities with the Controlled Surface Collection (190.97%), the Plowzone (191.81%), the Midden (195.93%) and the General Surface Collection (193.71%). The lowest values were for the 2Ap over foundation and the Cellar Fill.

Summary of South's Functional Analysis - Intersite

In general, the Grant Tenancy site does not conform particularly closely to the Carolina Pattern. For the site as a whole, kitchen artifacts constitute 77.91% of the assemblage. South's range for this group is 51.8-69.2%, so this is high. On the other hand, at Grant Tenancy, the architectural items comprise 18.980% which is below South's range of 19.7-31.4%. The low representation of architectural items may be the result of scavenging. Furniture items represent .20% of the total at Grant. This is within South's range of .1-.6%, although at the low end. The arms group at Grant Tenancy is quite low, .03%, compared to the Carolina Pattern, .1-1.2%. The clothing (.45%), personal (.09%) and activities (2.9%) groups are under-represented as well. South's range for these groups is from .6-5.4% for clothing, .1-.5% for personal and .9-2.7% for

activities. The tobacco pipe group, although low (2.17%), is within South's range of from 1.8-13.9%.

The Robinson Coefficient of Agreement shows a remarkable consistency among the deposits with thirteen of the eighteen provenience groupings showing thirteen or more Srij values over 150%. The greatest number of high values were obtained for the Cellar Midden and Feature 2/83 which had all 17 values over 150%. It is not surprising that the cellar midden should have such a large number of high values if it is indeed a "living floor". It is however, surprising that Feature 2/83 should have so many high values if this is a deliberately filled in erosional gully. It may have been that the depression was not deliberately filled in at a single time but that the refuse/fill within the gully could have naturally accumulated over the period of occupation of the site. The Exterior Midden East and the Ash and Brick concentration had 16 values over 150%. The provenience groupings with the smallest number of high values were the 2Ap over foundation and the Cellar fill. They both had 8 values over 150% and 9 values under 150%. Feature 12 also had a relatively small number of high values with 9 over 150% and 8 under 150%. The small number of high values for the Cellar Fill may be related to the deliberate filling in of the foundation walls to facilitate cultivation at the site. If the cellar was deliberately filled in after the occupation of the site, then the deposition patterns may not be characteristic of the site as a whole. It is unclear why the 2Ap lying directly over the foundation should be so unrepresentative of the site as a whole if it is indeed a naturally developed soil horizon. It is probably because artifacts from the Cellar Fill horizon which are, in general, not characteristic of the site have been plowed up into the 2Ap.

The differences between the provenience groupings do not seem to relate to temporal factors as the Cellar Floor Midden which had the greatest number of high values as a Mean Ceramic Date of 1812.15 and the Exterior Midden East and the Ash and Brick concentration which had the second greatest number of high values have Mean Ceramic Dates of 1825.18 and 1831.87, respectively. The Cellar Fill has a Mean Ceramic Date of 1818.43 and the 2Ap has a Mean Ceramic Date of 1818.43.

Spatial Organization and Patterning

One of the major research questions to be addresed in this report and a major component of the Determination of Eligibility statement (see National Register Nomination, Appendix 1) was spatial patterning/organization at the Grant Tenancy site. In addition, the spatial plan realized at the Grant Tenancy site was to be compared to both tenancies and owner occupied sites in order to determine if a typical tenancy plan could be identified and if this plan can be identified solely by archeological data. The data retrieved from the Grant Tenancy site was compared to the Robert Ferguson site (Coleman et al, 1983), a tenant farm, the William Hawthorn site (Coleman et al, 1985), an owner

occupied dwelling and the Mudstone Branch site (Heite 1984), also owner occupied.

There are several ways to approach these questions. One way is to examine standing structures or the remains of structures at a site and determine their function, either by the architecture of a particular structure in the case of extant buildings or by an examination of the artifact assemblages associated with structural remains. At the Grant Tenancy site, although extensive excavations were conducted either by hand excavation or by machine stripping, intact structural remains were found for only one building, the main house. A suggestion, in the form of artifact concentrations and postmolds, of one additional structure (Feature 10) was also found. On the basis of its size, this additional structure appears to be an outbuilding or shed of unknown function.

Another way to investigate a spatial patterning at a site is to examine the types of artifacts found at different locations within a site in order to see if different functional areas may be delinated. At the Grant Tenancy site, this type of investigation was conducted at two levels. First, the distributions of bottle glass, coarse ceramics and refined ceramics were plotted for the controlled surface collection to determine if gross functional differences were present across the site (Figures 25-27). It was hoped that this might also provide an indication of the function of the outbuilding represented by Feature 10. In addition, all levels were combined for each excavation unit and the distributions of bottle glass, coarse wares and refined wares were plotted for the individual excavation units. The results of these distributions, on a percentage basis, are shown on Figures 28-30. As these figures indicate, there is little difference found across the site, whether they are associated directly with the structural remains of the main house or in some other area. The major concentrations of all three artifact classes are in the main structure, in the Midden (Feature 5) area and from N195E400 north to N230E400. The greatest concentration of artifacts within the main structure area is from those units which had levels containing the cellar fill. The other units in the main structure area only had levels containing the plowzone and the buried plowzone or the 2Ap horizon and, in some cases, lay directly over the foundation wall. As a consequence, the artifact numbers are reduced. The area north of N210E400 and containing N230E400 and N250E400 is an erosional gully or, possibly, an old road bed. N210 is located at the top of the slope, N230 is halfway down the slope and N250 is at the bottom of the slope. The amount of slope wash increased north of N230 and the greatest accumulation was in N250, where approximately 2 feet of silty slope wash overlay rocks and gravel. The greatest concentration of artifacts from the units around the erosional gully was in N230. If these artifacts were the result of slope wash, one would expect the greatest concentration to be located in N250 where there was the greatest concentration of soil. Therefore, it appears as if the concentration of artifacts in

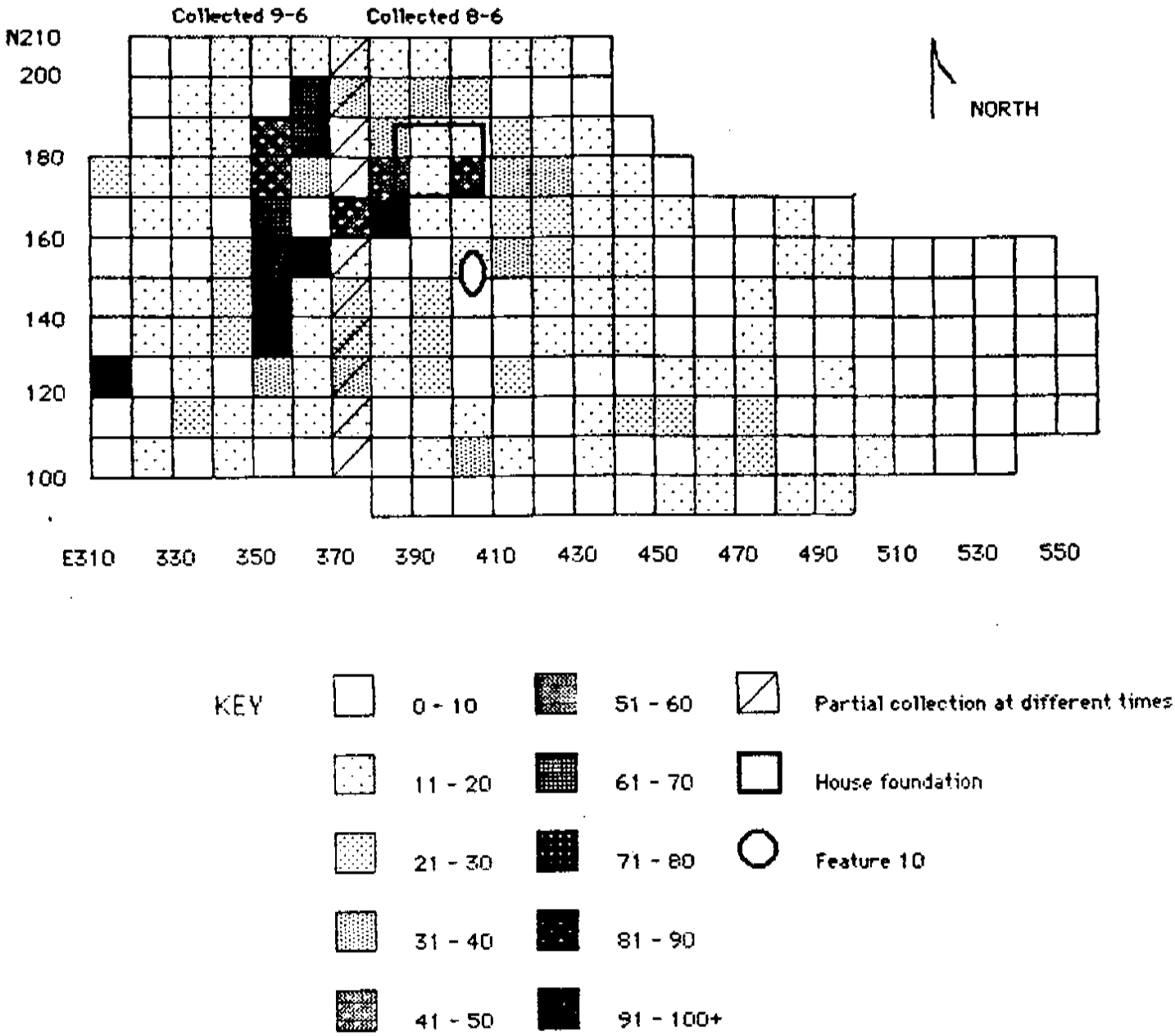


FIGURE 25
Controlled Surface Collection
Distribution of Bottle Glass

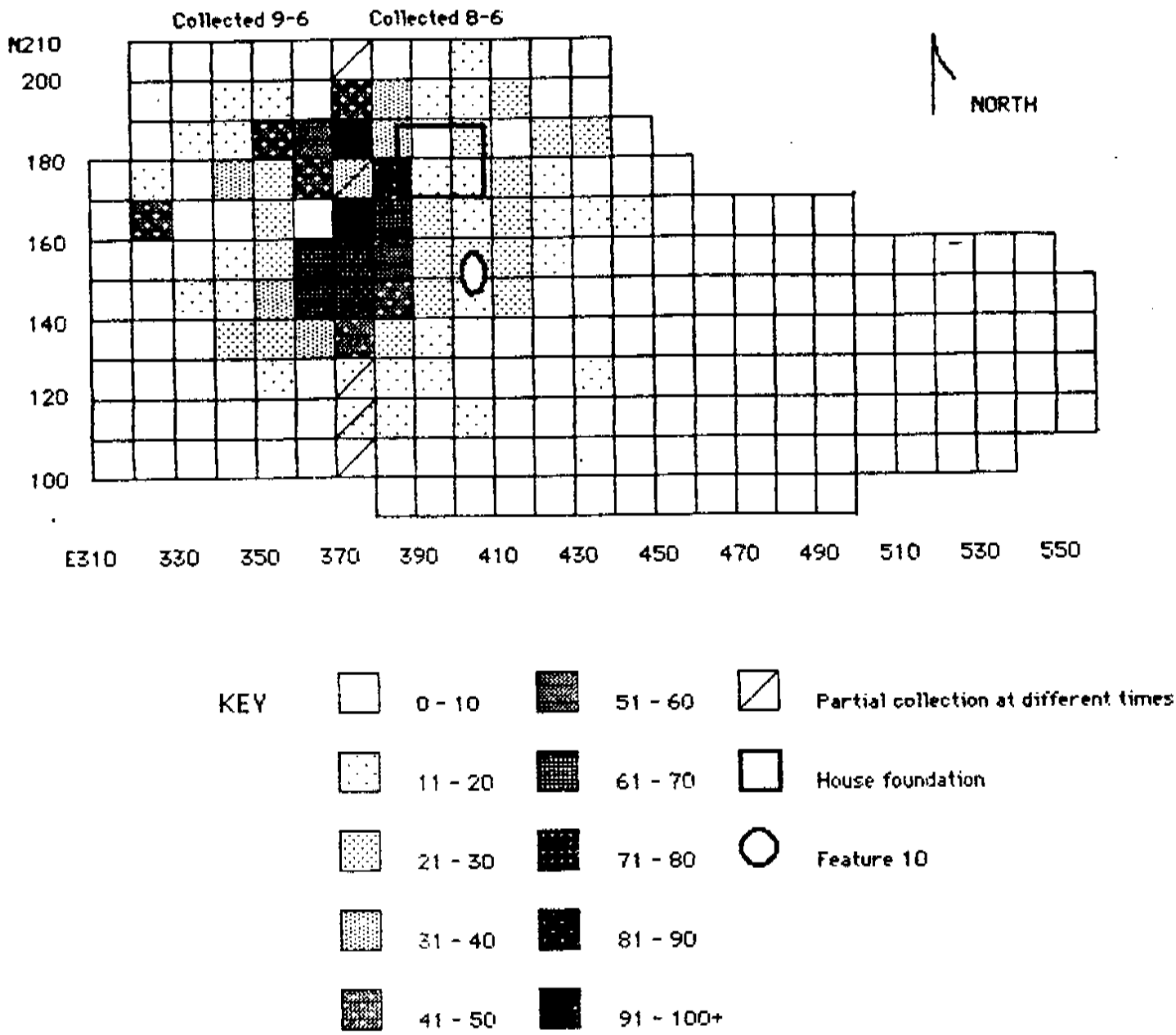


FIGURE 26
Controlled Surface Collection
Distribution of Refined Ceramics

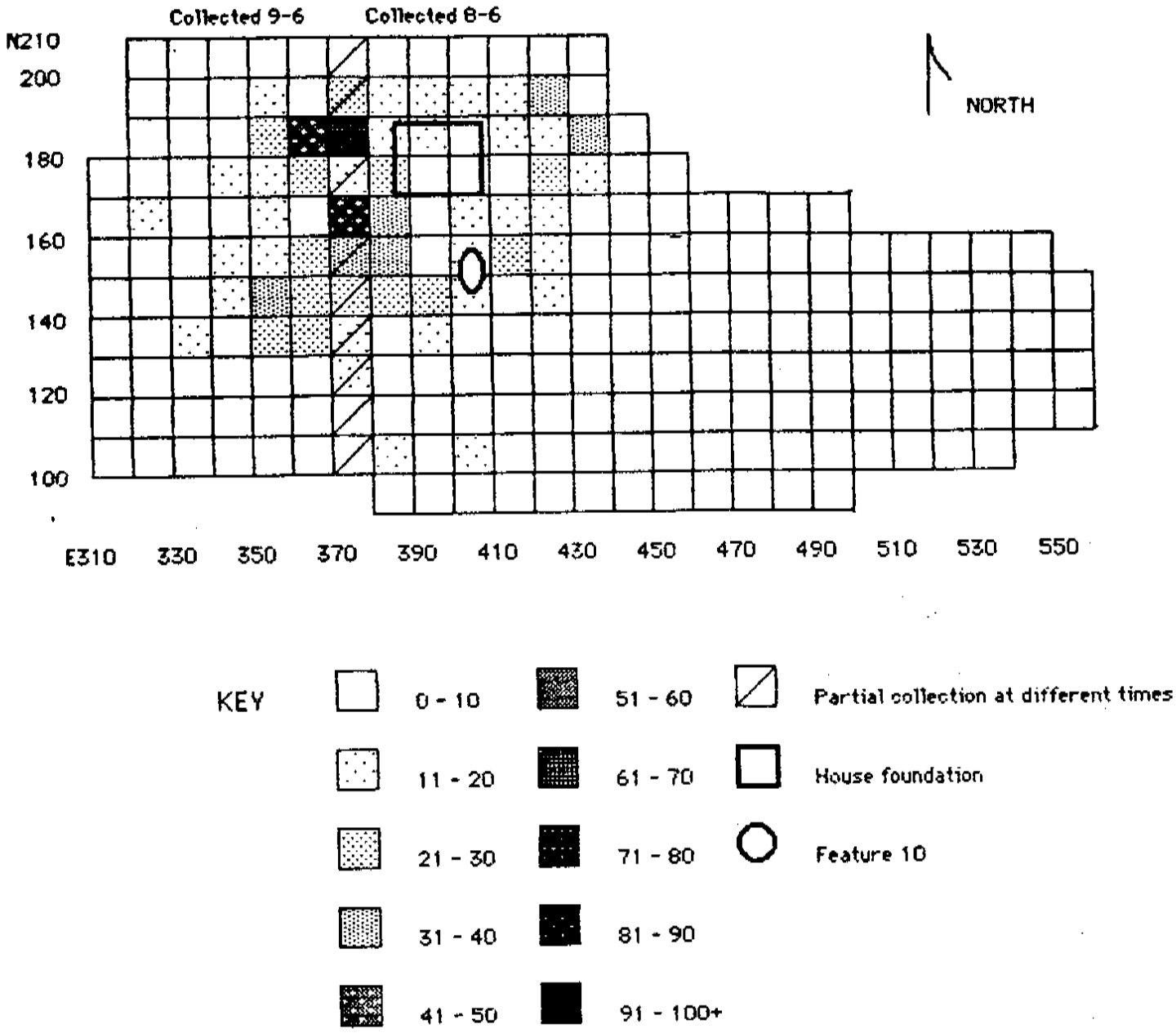


FIGURE 27
Controlled Surface Collection
Distribution of Coarse Ceramics

FIGURE 28
Distribution of Bottle Glass
Excavation Units

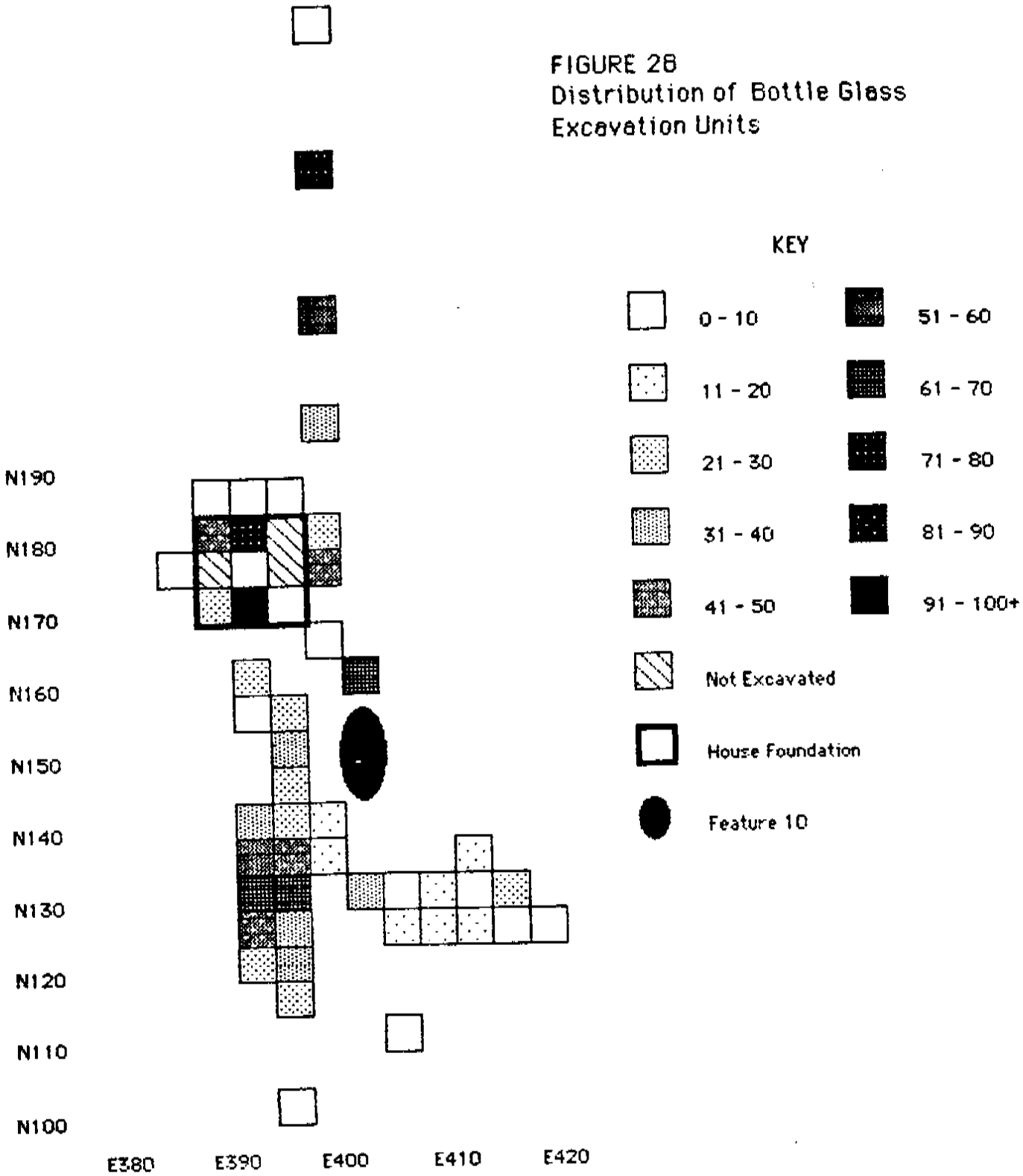


Figure 29

Percentages of Refined Ceramics Excavation Units

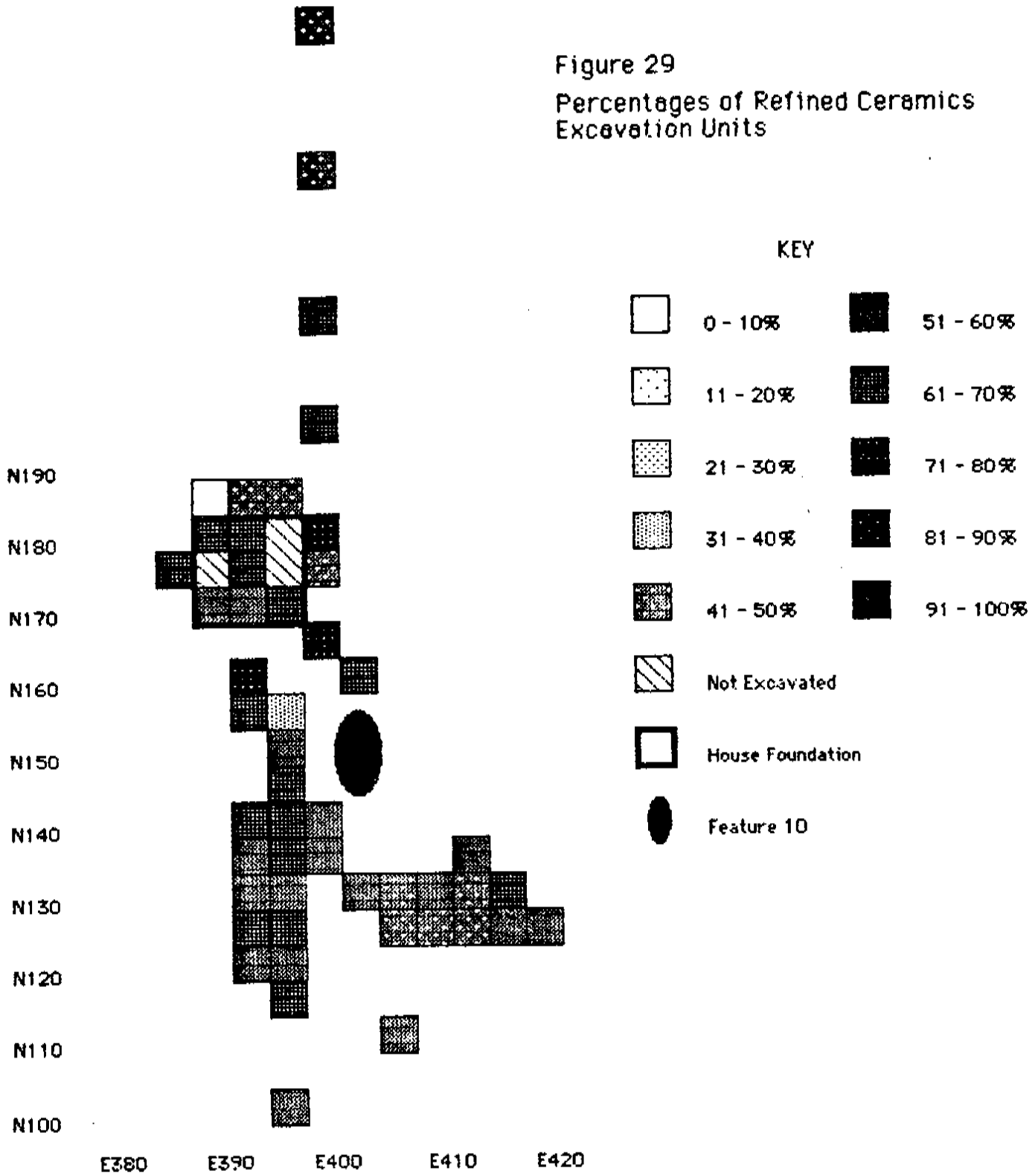
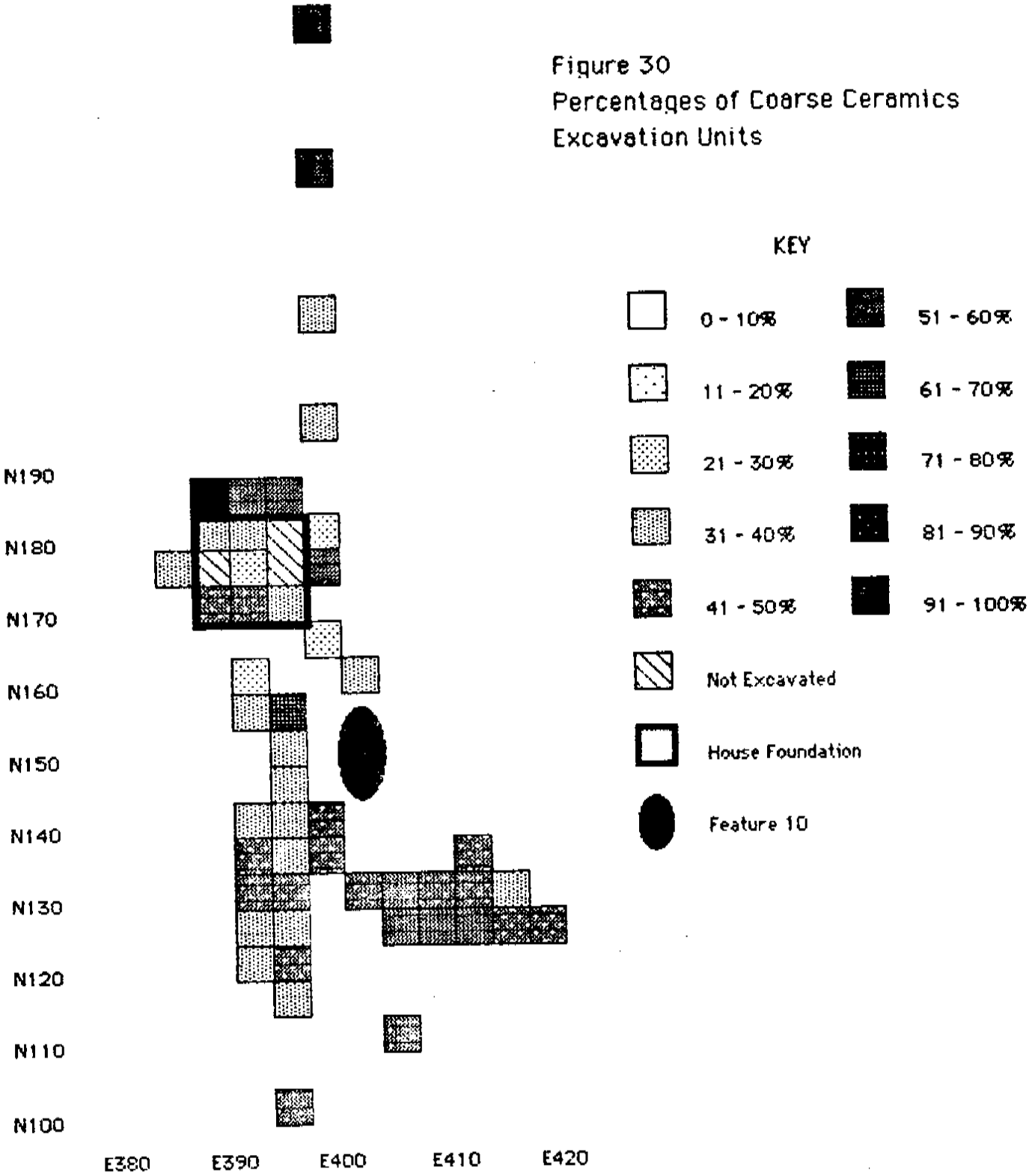


Figure 30
Percentages of Coarse Ceramics
Excavation Units



N230 may be the result of refuse dumping in the area adjacent to and within the gully.

A third approach involved separation of the artifacts into South's (1977) function groups in order to determine if certain kinds of artifacts were found in certain areas in the hopes of delineating different functional activity areas. These were plotted for both the controlled surface collection and the excavation units. Both the surface collection and the excavation units show fewer artifacts of any functional class, immediately adjacent to the main house on the east and west sides. This tends to substantiate the hypothesis that the main house extended beyond the foundation walls in these directions, either in the form of an attached shed or a porch. In the surface collection distribution maps, there appears to be a concentration of at least kitchen debris north from the 150 line to the 190 line, from the E360 line to the E380 line (Figure 31). This suggests that an entrance to the main house may have been located on the western side and that refuse was discarded out this entrance. In general, the greatest concentrations of artifacts contained within any of South's function groups are in the main structure area and in the Midden/Feature 5 area. A similar pattern of functionally mixed refuse deposits was noted for the William Hawthorn where although artifact concentrations were observed in the rear and side yards, continuous occupation, from the mid-18th century to 1961 probably obscured the functional distribution of artifacts (Coleman et al 1984:156). At Grant, although functional differences are not apparent, this does not appear to relate to temporal factors as was seen at the William Hawthorn site because the occupation period was much shorter. Instead, at Grant, the horizontal extent of the spatial utilization appears compressed and it may be this compression which has obscured functional differences. In other words, the occupants of the Grant Tenancy site were using a much smaller area which caused a mixing of functional areas.

In addition, the architectural debris was separated into brick, window glass and nails and plotted on a percentage basis to determine if any differences existed in these artifact classes. These distributions are shown on Figures 32-34. As Figure 33 indicates, the percentages of window glass are relatively close through the site area. Although it is not marked, there does seem to be slightly higher percentages of brick around the main structure than in the midden area (Figure 32). The concentration of brick in N180E400 probably represents the remains of a chimney. In contrast, there seems to be somewhat higher percentages of nails in the midden area around Feature 10 (Figure 34). As noted, Feature 10 was hypothesized to represent the remains of an outbuilding and, based on the higher percentages of nails, it appears to have been frame.

In their research design for the Robert Ferguson site, Coleman et al (1983:24) hypothesized that the number and kinds of outbuildings present at a tenant farm should be representative of the day to day use of the occupants and not a reflective of

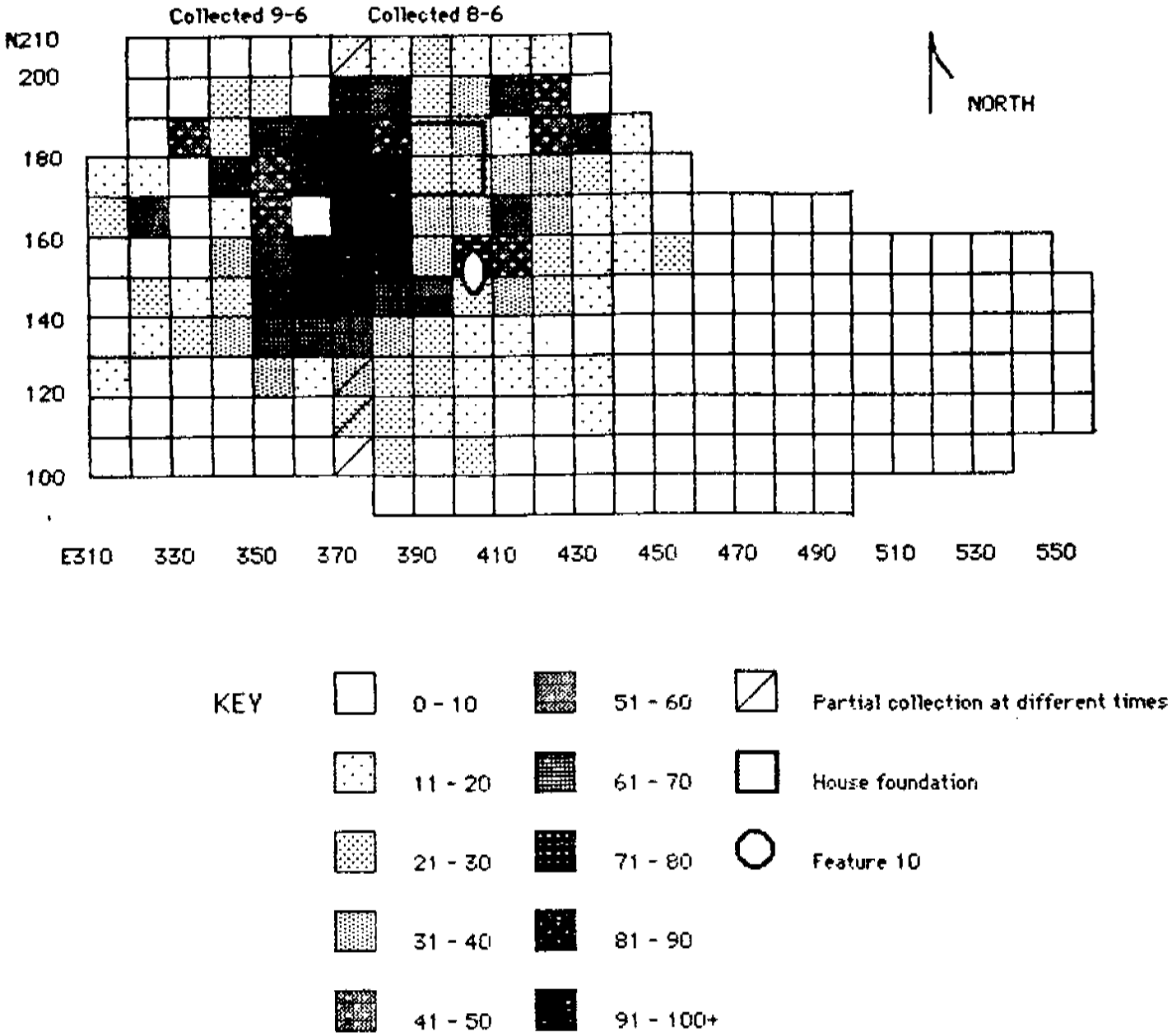


FIGURE 31
Controlled Surface Collection
South's Function Group 1

Figure 32
Percentage of Brick
Excavation Units

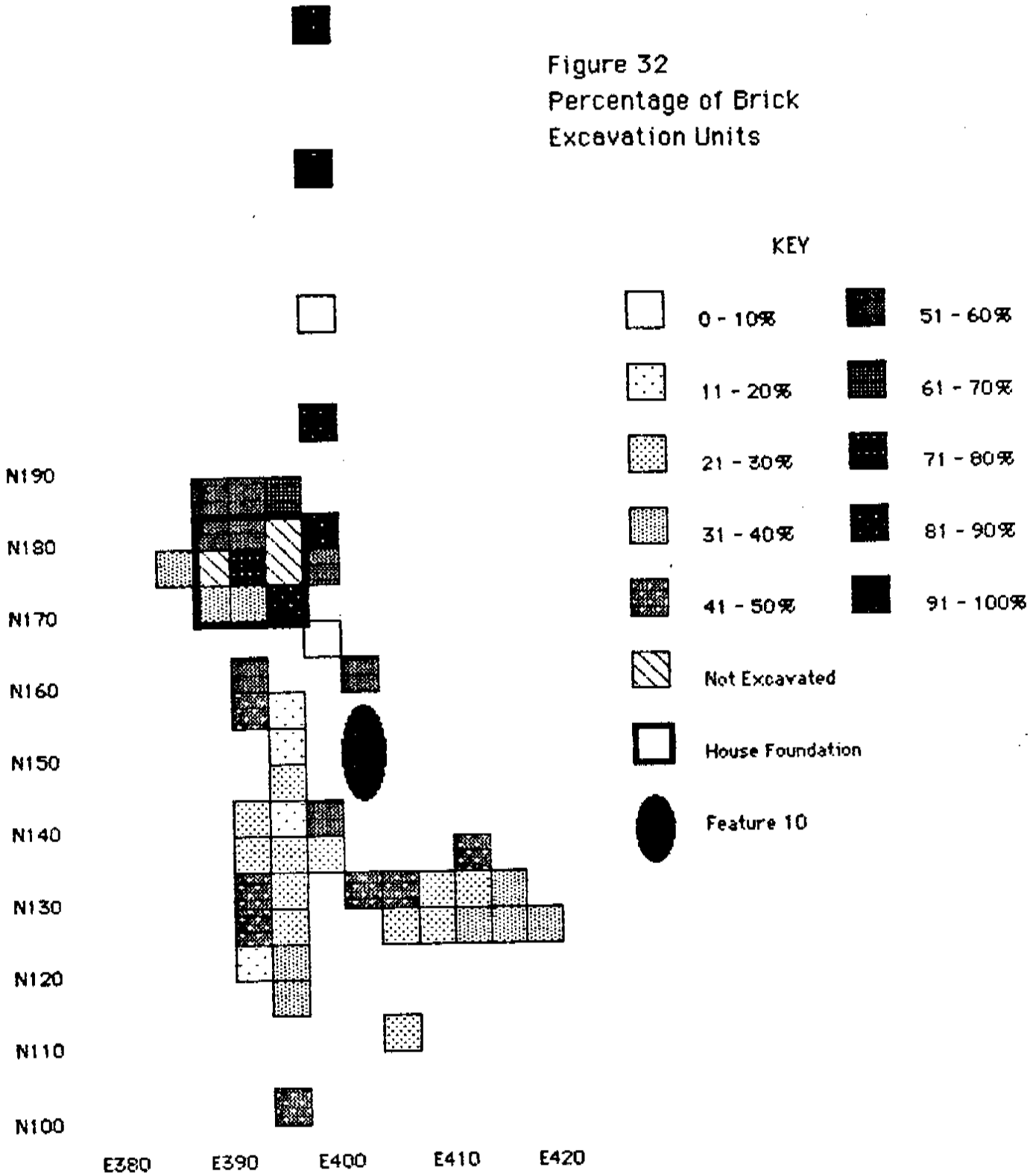


Figure 33
Percentage of Window Glass
Excavation Units

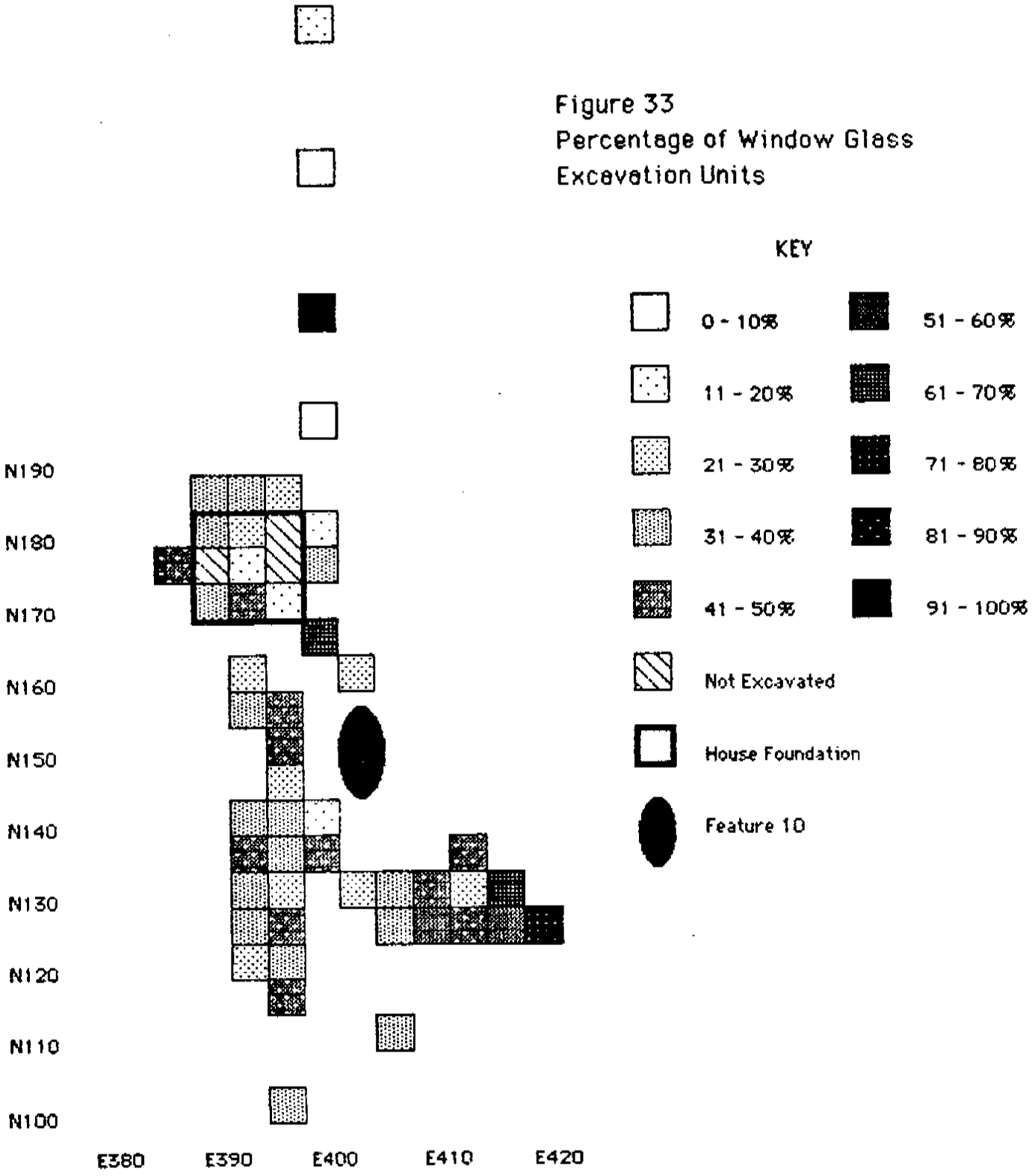
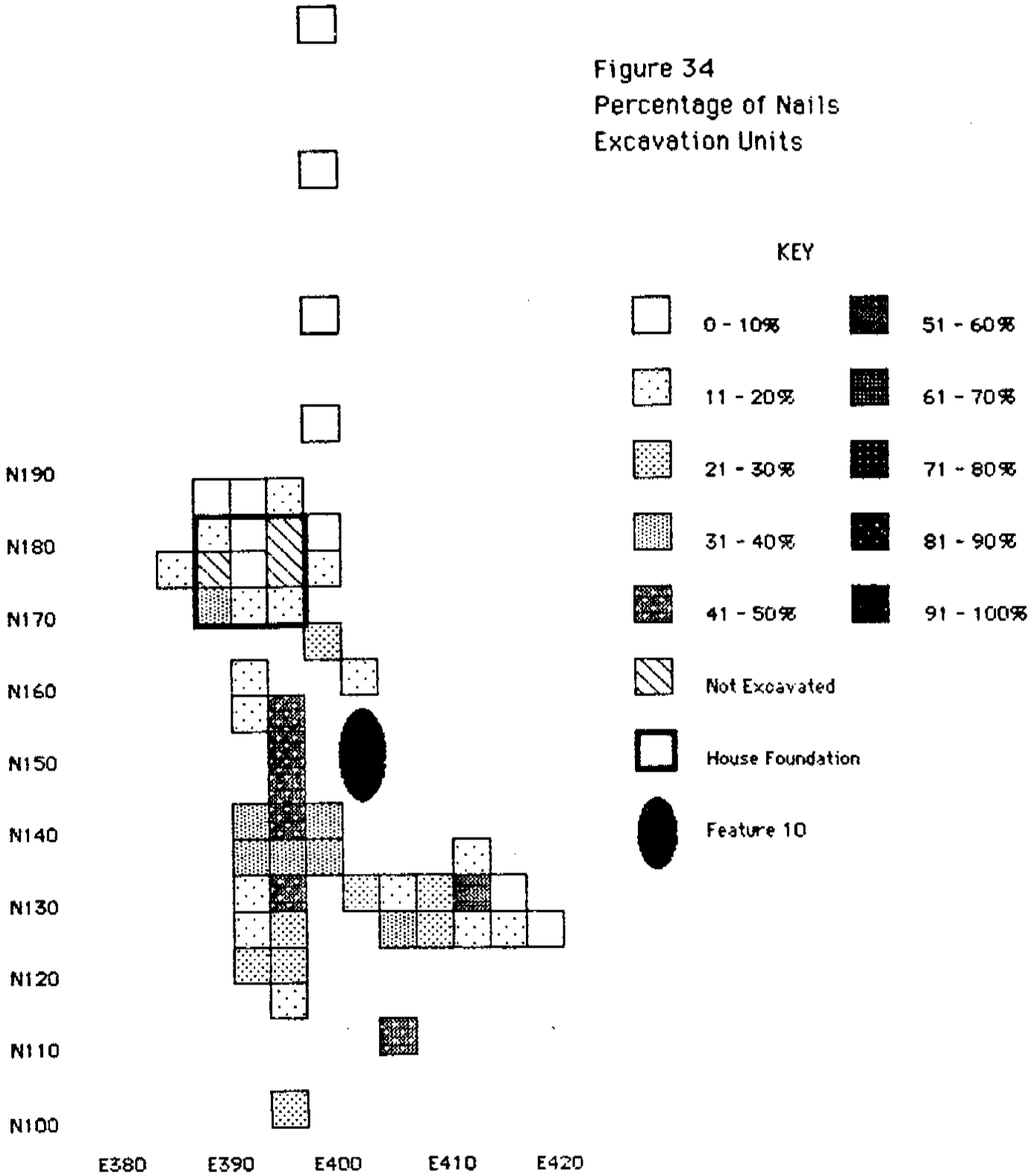


Figure 34
Percentage of Nails
Excavation Units



those kinds of subsidiary structures needed to operate a large farm. The excavations at the Robert Ferguson site yielded the remains of only two outbuildings, a chicken house and a barn (Coleman et al 1983:91) and the excavators suggest that a similar number of auxiliary structures may be characteristic of tenant farms. This is in contrast to a large owner occupied farms such as the Hawthorn site where a greater number of auxiliary structures were present (Coleman et al 1984:68). If the pattern of few outbuildings is characteristic of tenant farmers, then the Grant Tenancy site fits, as the remains of only one (or perhaps two) possible outbuildings were found, Feature 10 and possibly Feature 12. Feature 10, measuring 19.6 by 5.8 feet is not of sufficient size to have been a barn and appears to have been a small shed. It is difficult to ascertain the size of Feature 12, cannot be ascertained as it is, at best, the remains of an individual pillar footing and no additional footings were found. While no evidence of a barn was found at the Grant Tenancy site during these excavations, it is possible that a barn or additional outbuildings may have been located outside the impact zone in which the excavations took place. In any event, the number of outbuildings observed at the Grant Tenancy site based on the present evidence precludes interpretation of the site as a large working farm, although some evidence of on-site butchering of at least cows and pigs was present in the faunal assemblage.

Heite (1984) found that, at the Mudstone Branch site, although the exact placement of the outbuildings and refuse disposal areas may vary somewhat through time based on the position of the entrance road to the house, an attempt was always made to keep the front yard area (what Heite terms as the "ceremonial space") free of trash and/or outbuildings (Heite 1984). In addition, refuse disposal areas at this site tended to be on the eastern side of the building in relation to the ceremonial space (Heite 1984:71-72). Heite documented this shift through time by plotting the road positions in relation to the distribution of temporally diagnostic ceramic types. A shifting pattern of trash disposal and temporally confined concentrations of artifacts was also present at the Robert Ferguson site (Coleman et al 1983:81). At this site, the authors found whiteware farther from the house, in the east yard area near the kitchen door and earlier types, such as pearlware, were found closer to the house out the back door in the western section. At Grant, in contrast, although Lancaster Pike may have shifted from one side of the house to the other, the same temporally confined concentrations of artifacts were not observed. If as Heite (1984:14) postulates, houses generally tended to face the main transportation artery at the time of the house construction, the front of the structure at Grant would have faced north toward the erosional "gully/depression" which may be the oldest road bed. The road then appears to have shifted closer to its present location south of the structure, on the opposite side of the house. If refuse disposal patterns at the Grant Tenancy site were following Heite's pattern, one would expect that the artifacts from the concentration south of the structure to be earlier than the artifacts on the north side of the structure as

the occupants of the site attempted to maintain a "ceremonial space". This does not appear to be the case at Grant as an examination of the types of ceramics found north and south of the house show similar temporal ranges. Based on what was found at the Robert Ferguson and the Mudstone Branch sites, one would expect to find most, if not all, of the later ceramic types occurring at the site on the north side of the house and this is not the case. However, the occupations at both the Mudstone Branch and the Robert Ferguson sites were longer than what is hypothesized for Grant and the effect that this may have on the temporal concentration of ceramic types is not known.

In summary, the pattern of refuse disposal at the Grant Tenancy site does not conform closely to Heite's pattern at the Mudstone Branch site or to the patterns observed at the Robert Ferguson or William Hawthorn sites. Instead, it appears closer to the Brunswick pattern presented by South (1977:47) in which the occupants of site discarded refuse out entrance areas to the structure, regardless where the entrance was located. Since the entrance ways at Grant cannot be definitely ascertained, it cannot be stated that Grant follows the Brunswick pattern exactly but the pattern of refuse disposal appears to be similar. The fact that Grant is closest to the Brunswick pattern may be the result of its earlier, more temporally confined occupation. In addition, South states that in sites which follow the Brunswick pattern, nearby depressions were also used for trash disposal (1977:47). This appears to be true of Grant as well.

Econscale Analysis

In addition, ceramics from the site were coded according to Econsacle Types. The Econscale Types are arbitrarily assigned numbers which are based on ware type and method of decoration. They are derived from Miller's (1980) work in which he developed a relative cost index scale for refined white earthenwares based on the cost differential between undecorated wares and wares decorated with different kinds of decoration. The refined white earthenwares consist of pearlware, whiteware and creamware. These ware types were combined for the economic status analysis following Miller (1980:15-18) who concluded that, based on historical sources, the manufacturers of what archeologists today would classify as different ware types, did not recognize these differences. Instead, they were defined by the manufacturers on the basis of their decoration. Because of this, Miller 1980:18) suggests that decoration and vessel form are more ueful when examining economic status.

In order to use Miller's cost indices as he developed them, the number of different vessels forms by decorative types must first be calculated. Unfortunately, the size of the sherds and the size of the collection at the Grant Tenancy site preluded this type of categorization, therefore, the Econscale Types developed in connection with another project (Thompson 1985) were used in an attempt to determine the relative economic status of the occupants of the Grant Tenancy site. Each Econscale Type

represents a level of effort and cost on the part of the manufacturer; a cost which must be passed onto the consumer. It was felt that even though information concerning vessel form could not be obtained, the Econsale Types could be used as the more costly decorative types are always more expensive, regardless of vessel form. For the Grant Tenancy project, it was hoped that an examination of the decorative types within the refined white earthenwares and a comparison of the results of this examination with other sites would give some indication of Grant's economic status in relation to these other sites. For the site as a whole, the percentages break down as follows: Econscale Type 1 (porcelain) - 282 sherds, .97%; Econscale Type 4 (transfer printed refined white earthenwares) - 2178 sherds, 7.50%; Econscale Type 5 (hand painted refined white earthenwares) - 1553 sherds, 5.35%; Econscale Type 6 (minimally decorated refined white earthenwares) - 1,831 sherds, 6.31%; Econscale Type 7 (undecorated refined white earthenwares) - 11,245 sherds, 38.74%; Econscale Type 11 (yellowware) - 610 sherds, 2.10%; Econscale Type 12 (coarse stoneware) - 118 sherds, .41%; Econscale Type 13 (coarse earthenwares) - 9714, 33.47%; Econscale Type 21 (refined redware) - 31 sherds, .10%. Plates 18-21 show representative ceramics from the site.

As could be expected, undecorated refined white earthenwares made up the largest percentage (38.74%) of sherds at the site, followed closely by coarse earthenwares (33.47%). The low representation of stonewares at the site (.41%) is somewhat surprising, however, it is assumed that, based on the large representation of coarse earthenwares, that most of the utilitarian ceramics were of coarse earthenware. The reason for this is unknown. It may be that the coarse earthenware vessels were more easily obtainable or less expensive.

Faunal Analysis

Dr. David Clark, Catholic University, Zooarcheology Lab, conducted the faunal analysis for the Grant Tenancy site. His results and methodology are presented in some detail in Appendix III. In general, the faunal remains from the various provenience groupings were quite similar. Evidence for on-site rearing and butchering of domestic animals was present in the assemblage. Few of the skeletal elements found were sawed or cut and those saw marks present were indicative of hand sawing techniques. The cut marks were the result of axe blows. Both of these served to indicate on-site, non-commercial butchering (Appendix III, page 3). Evidence of symmetrically sawed meats indicating systematic butchering, primarily for specialty meats was not found. This systematic butchering is most common, according to Dr. Clark, after the mid-1800's with the development of more efficient butchering techniques (Appendix III, page 4).

Cow, pig and sheep constituted the bulk of the meat diet, with cow and pig being the most common. Wild species such as box turtle, rabbit, oyster and hard shell clam were also utilized as food resources (Appendix III, page 33). Refuse from the initial

PLATE 18

ECONSCALE TYPE 1: PORCELAIN

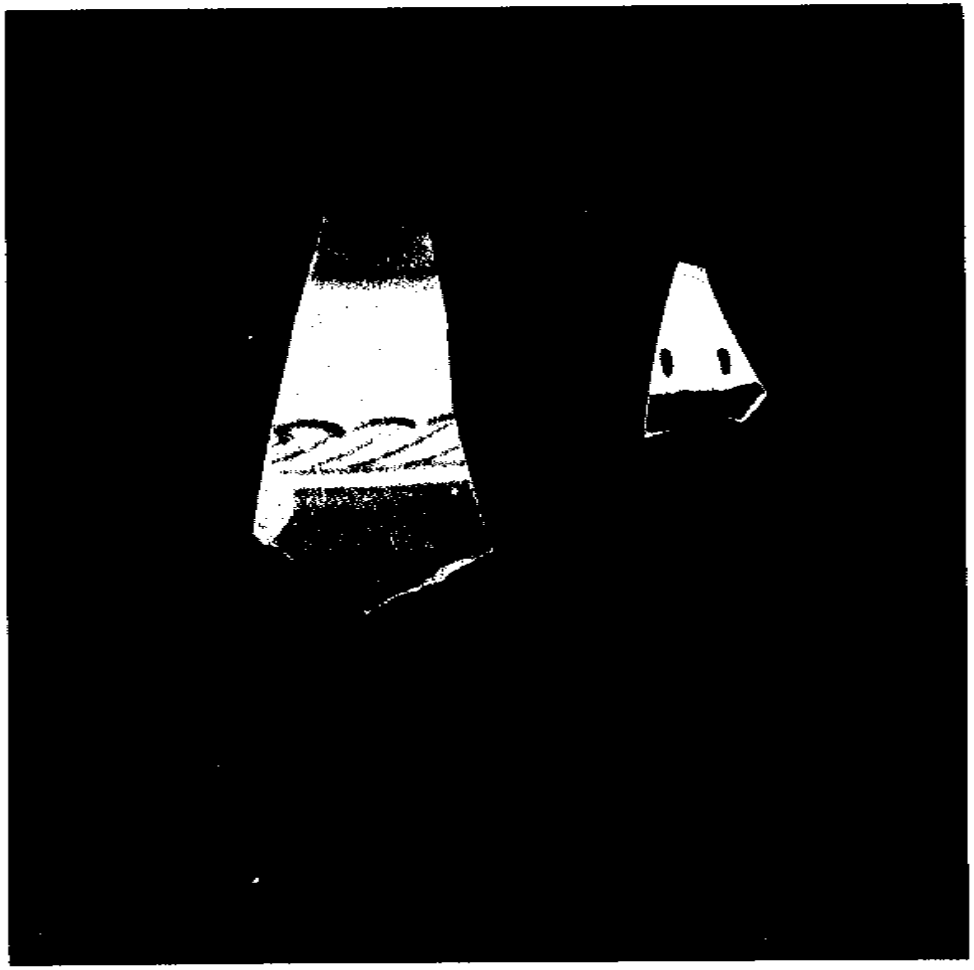


PLATE 19

ECONSCALE TYPE 4: TRANSFER PRINTED REFINED WHITE EARTHENWARES

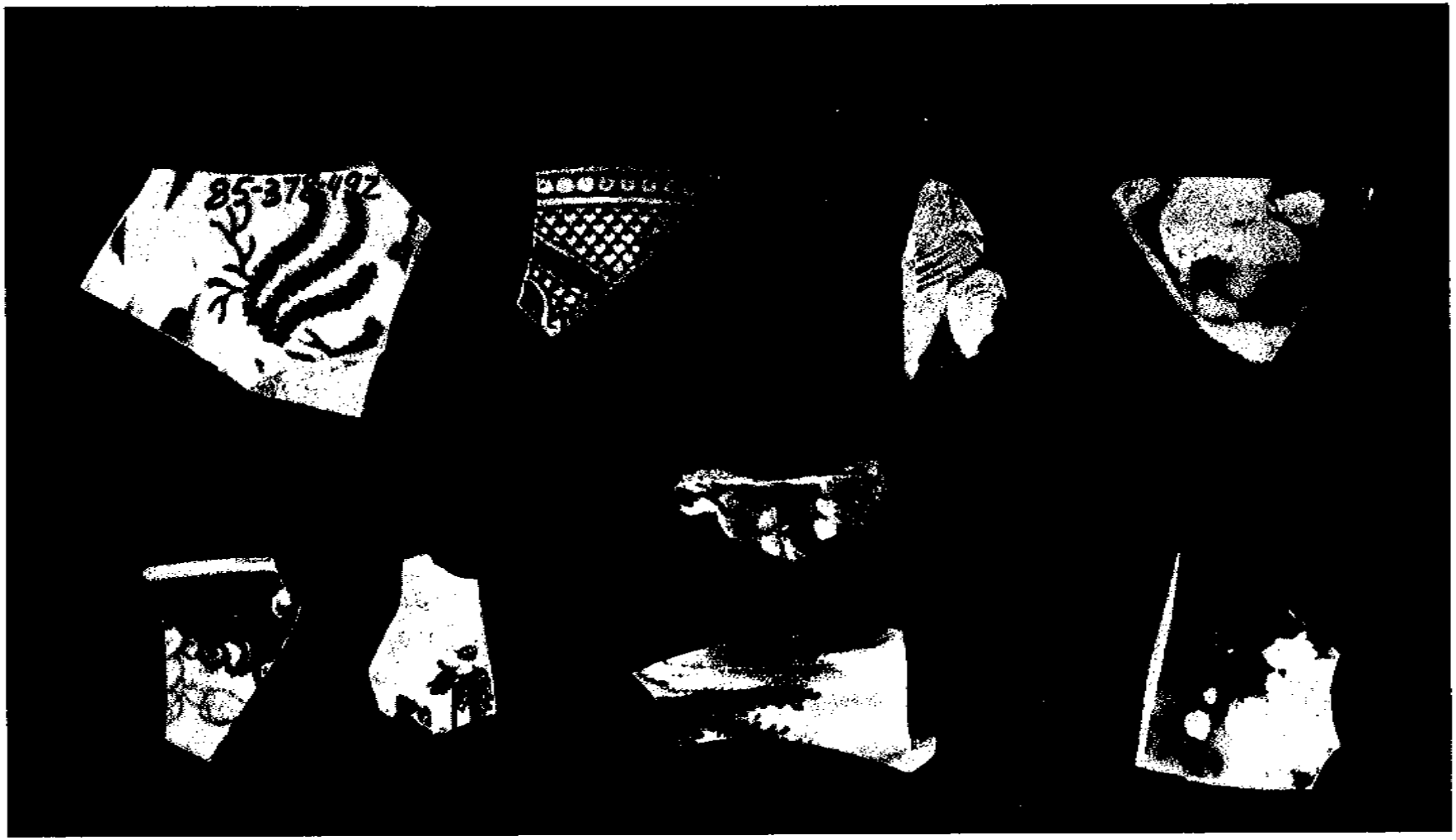
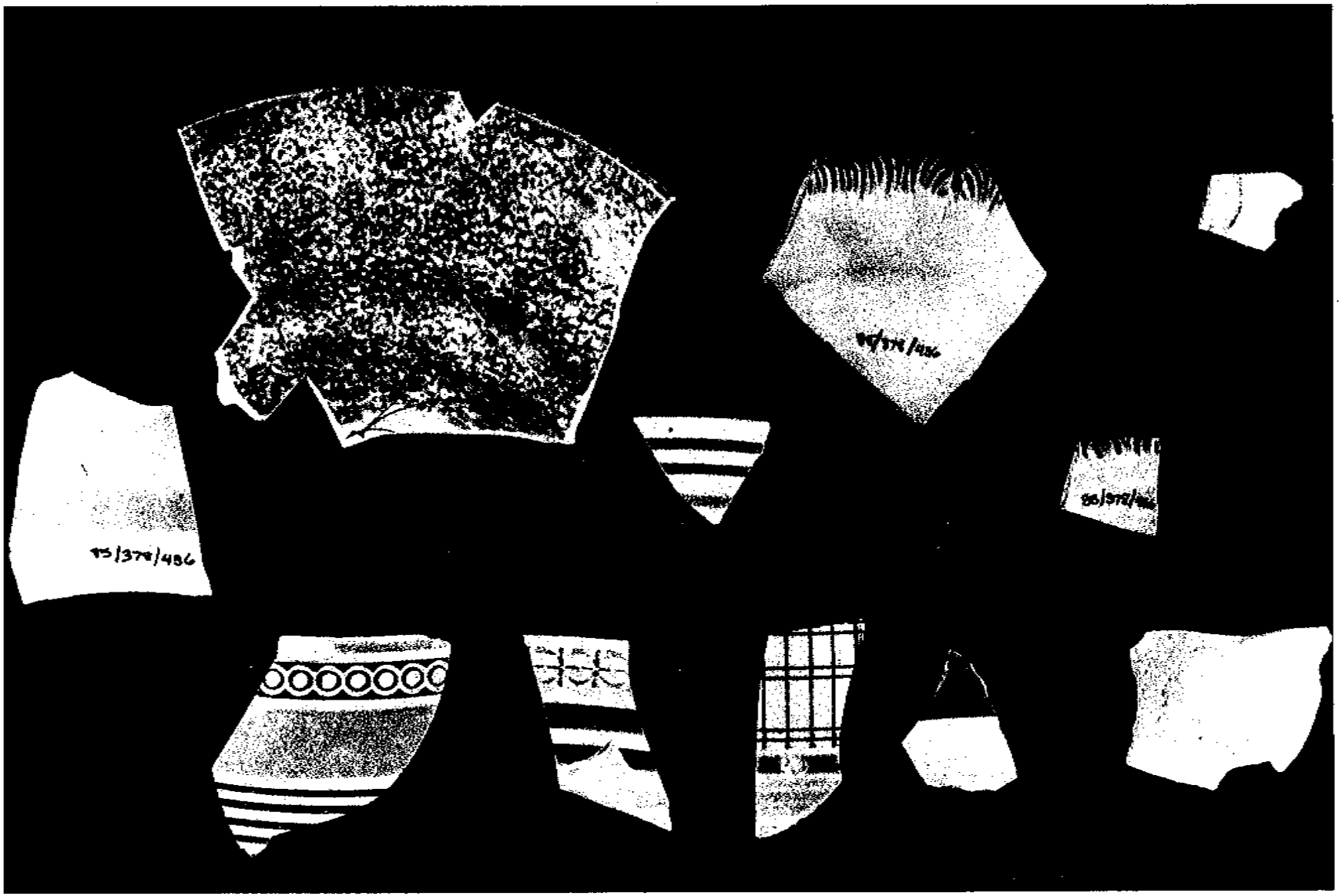


PLATE 20

ECONSCALE TYPE 5: HAND PAINTED REFINED WHITE EARTHENWARES

PLATE 21

ECONSCALE TYPE 6: MINIMALLY DECORATED REFINED WHITE EARTHENWARES



butchering of the animal was much more common for cow and pig remains and a wide variety of skeletal parts were found. Sheep remains, on the other hand, were less diversified (Appendix III, page 34).

Better quality meat cuts were recorded for both the cow and sheep remains. The most common cow remains were shoulder, chuck, sirloin and roast meat cuts. The most common pig remains were Boston Butt and picnic shoulder as well as half hams. Sheep remains were represented by foreshank, rack of lamb, loin and hind leg of lamb (Appendix III, page 34).

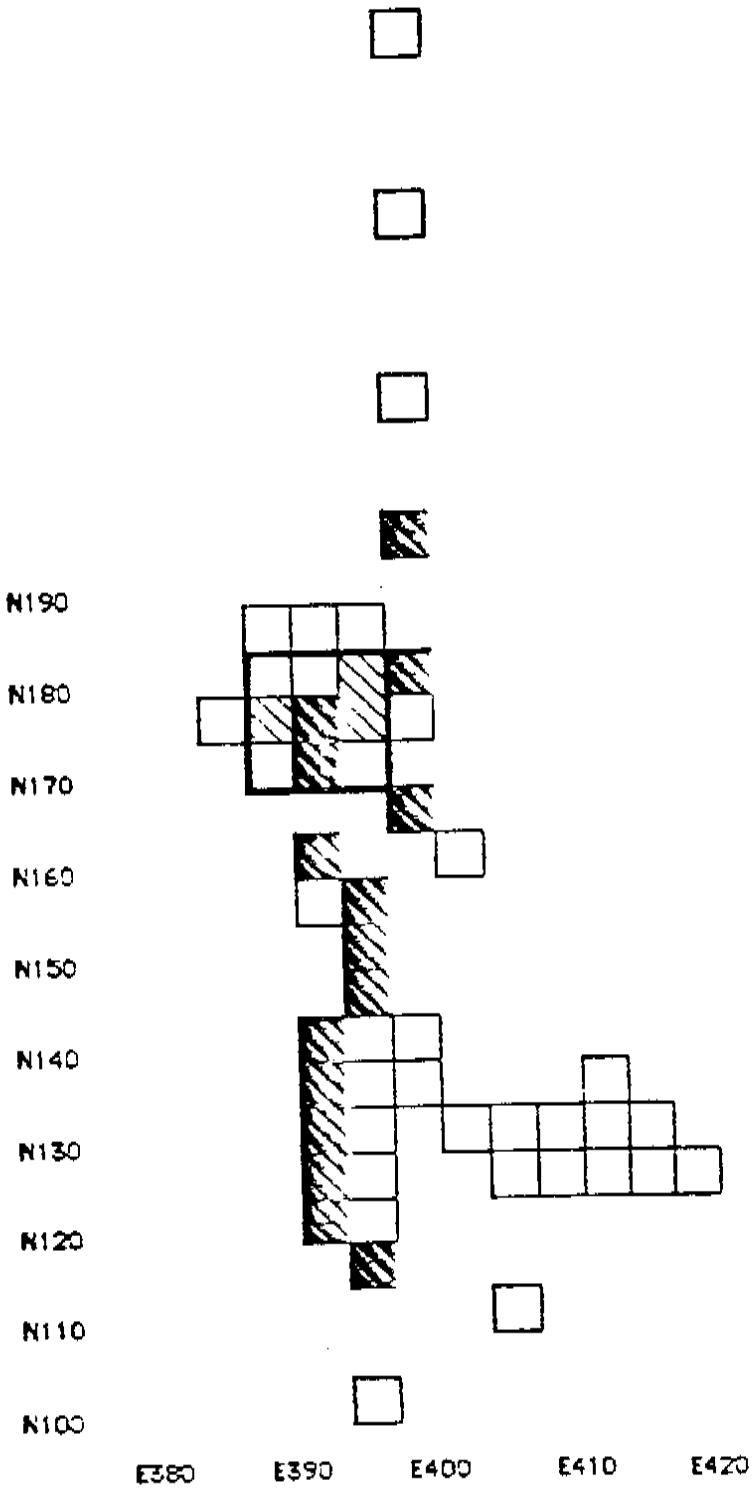
Soils Analysis

Soil chemical analysis was conducted on selected samples from the Grant Tenancy site. Plowzone samples were taken from each of the excavation units and a sample was taken from each of the features, where this was possible. The samples were sent to the University of Delaware College of Agricultural Soil Laboratory which provided results for phosphorus (P), potassium (K), magnesium (Mg), calcium (Ca), manganese (Mn) and zinc (Zn). The tabular results of this analysis are contained within Appendix IV. Previous studies have shown that changes occur in the soil chemistry as a result of past human activity. It was hoped that the soil analysis would be helpful in interpreting some of the more ambiguous feature and to better define and interpret activity areas. While the soils analysis was not used in this instance to locate subsurface features prior to excavation, these results demonstrate the potential for such application.

In a test case study, Custer (et. al 1986) provides the results of soil chemical analysis at a 19th century farmstead/blacksmith complex in northern Delaware. Known activity areas were subjected to soil analysis to test previous assumptions archeologists have made concerning the relationship of soil chemistry to certain human activities. Custer (et. al 1986) found that not all of the chemical indices provided results that were expected. Calcium and magnesium levels showed little or no relationship to specific activity areas while phosphorus and potassium were high (as expected) in a machine shop/grist mill area but were not high (contrary to prediction) in an animal penning area. The authors conclude that certain activities will not always alter the soil chemistry in ways which can be detected, given current techniques (Custer et. al 1986:94).

At the Grant Tenancy site, the effects of artificial fertilizing for agricultural practices presented a few problems. The results obtained for calcium, magnesium, manganese and zinc were at the maximum values obtainable and therefore were useless for archeological interpretations. Phosphorus and potassium provided the most promising results for plowzone sampling and recorded levels for the two nearly mirrored each other (see Figure 35). The pH values (Figure 36) ranged from 5.4 to 6.7 or moderate to weakly acidic.

FIGURE 35
Soil Sample Location Map



KEY

Squares from which soil samples were taken and which are shown on the distribution graphs

Not excavated

House Foundation

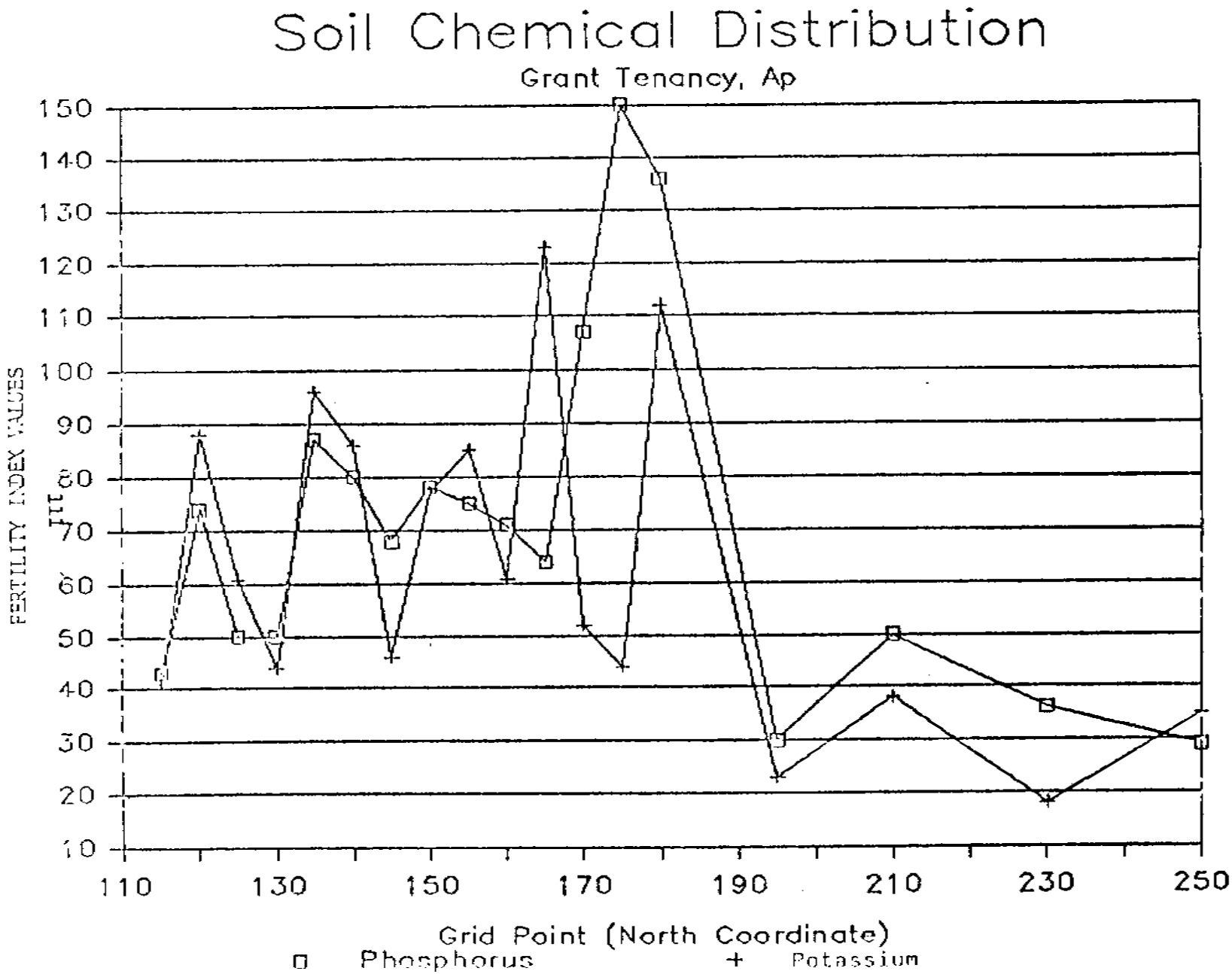


FIGURE 36

PHOSPHOROUS AND POTASSIUM VALUES, PLOWZONE

The area to the east and southeast of the house foundation (Figure 2) contained a number of features whose function remains unclear. These include Features 2, 9, 10 and 11. While each varied considerably in size, all intruded into the subsoil by about .5 feet. The feature fill in all cases was very similar and consisted of a dark yellowish-brown silty loam and was slightly different from the overlying plowzone. In all cases, the feature fill contained a moderate amount of artifacts. Figure 37 presents the results for phosphorus and potassium and shows that the values for the four similar features are relatively close and fall slightly lower than the ranges for the same two chemicals for the plowzone in this vicinity. Aside from the interpretation presented earlier for Feature 10 as a small shed or structure, the function of the other features remains unresolved. As stated earlier, the soils chemical analysis ruled out a privy function for Feature 9.

The soil chemical analysis for the plowzone revealed that all but two chemicals were rendered useless for interpretation as their values were artifically high due to modern agricultural fertilization. Phosphorus and potassium, however, were useful in flagging the house structure in addition to marking rather dramatically the site and non-site areas.

The soil chemical data for a linear north/south sample transect are presented in Figure 38. This figure provides a visual representation of the FIV values for phosphorus and potassium for each sample location along the transect. The grid points are shown along the X-axis while the FIV values are shown on the Y-axis. The graph indicates three areas which had different value ranges for these two indices. Each of these areas correspond to different activity area as determined through excavations. the first area lies between grid points N120 and N160. This corresponds to the midden and out-building area. The values for phosphorus and potassium here average between 60 and 70 FIV and can be considered moderate in comparison with the other two areas. The second area lies between grid points N170 and N185 and represents the sample taken immediately over the house foundation. Here the values are significantly elevated with the exception of two low values for potassium.

The third area falls between grid points N185 and N250. This is essentially an off-site area consisting of a slope and gully. Grid point N190 roughly corresponds to the point where the slope begins to drop off towards the gully. Grid point 250 is located at the base of the slope. The values for the phosphorus and potassium were considerably lower than either of the other two areas. This is probably due to the fact that aside from being off the site and unaffected by cultural activities, this area was also on a greater slope.

The pH values for the same transect are shown on Figure 39. In comparison with the potassium and phosphorus values noted above, the results are reversed between the midden/outbuilding

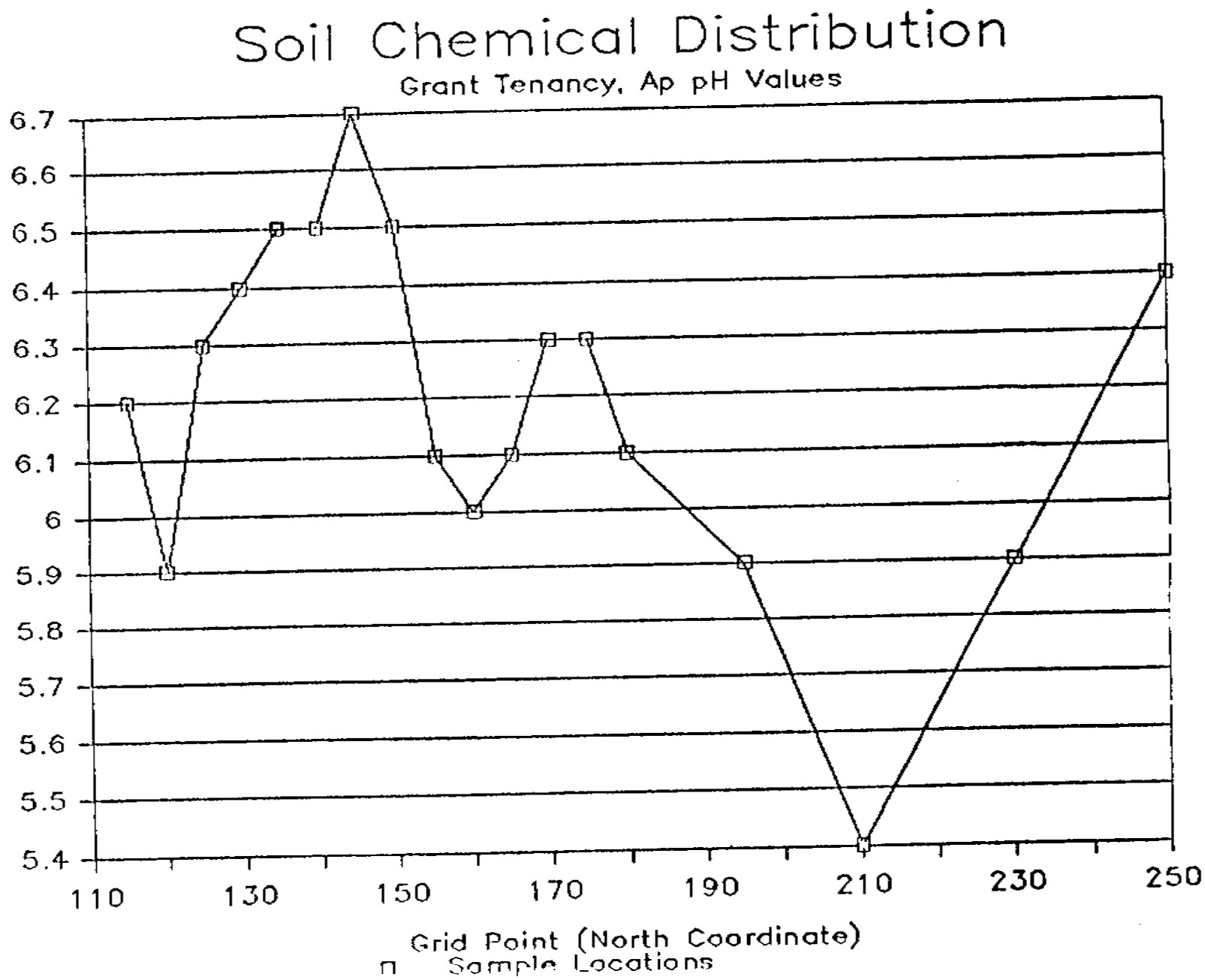


FIGURE 37

pH Values, Plowzone

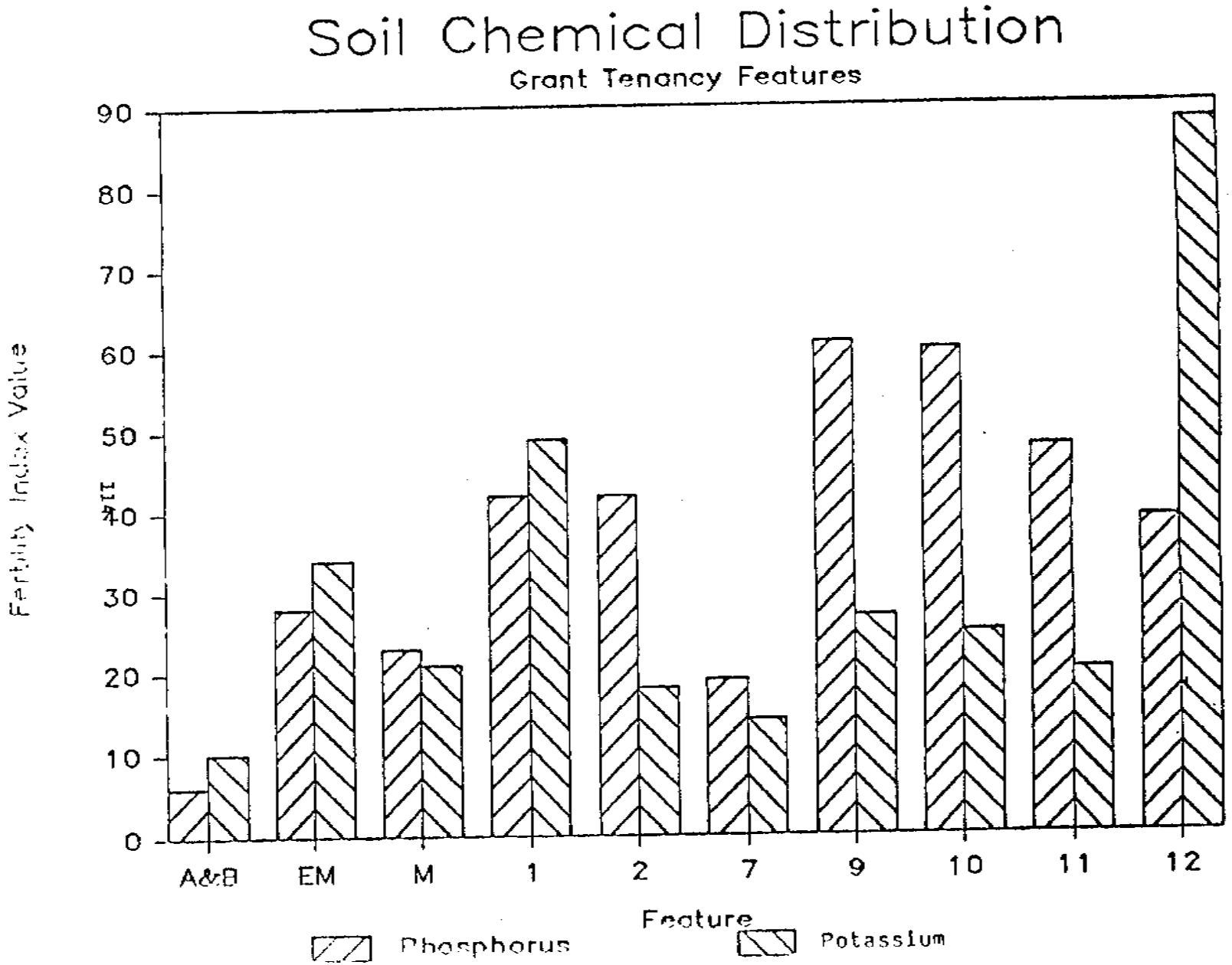


FIGURE 38

Phosphorous and Potassium Values, Features

area and the house foundation area. The pH values for the former are elevated above those for the latter.

The slope/gully area exhibited very low values at the top of the slope which increased as the base of the gully is reached. This is probably due to greater erosion at the top of the slope with greater amount of slopewash accumulated towards the base of the slope.

While the results of the soil chemical analysis at the Grant Tenancy site did not dramatically alter nor add to the overall picture, they did demonstrate that positive results can be obtained for some chemical indices. In this case, phosphorus and potassium levels from the plowzone samples were shown to be markedly elevated in those parts of the site that contained high concentrations of artifacts and associated features. These elevated values were especially evident from the samples directly over the buried house foundation.

Prehistoric Component

A small prehistoric component was found at the Grant Tenancy site which was mixed with the historic period artifact concentration. No subsurface prehistoric features were encountered and all of the material was recovered from either the plowzone or within historic feature fill. The artifacts, from the Phase I/II and Phase III investigations included 34 flakes, 5 shatter fragments, and 9 bifaces. No diagnostic artifacts were included. The flakes and shatter material included 23 quartz, 3 chalcedony, 5 jasper and 8 chert pieces. The bifaces included 6 quartz, 1 jasper, 1 chert and 1 rhyolite specimens. None of the bifaces could be assigned to an established type because they were either heavily reworked or broken fragmens. Three of the quartz bifaces were distal ends of points, two were heavily reworked notched points and 1 was a similarly reworked stemmed point (Plate 12). The jasper and the chert bifaces were broken unidentifiable fragments and the rhyolite bifaces was stemmed but also heavily reworked.

The prehistoric component at the Grant Tenancy site is similar to two sites reported nearby during the Phase I investigations (Barse 1985) and is interpreted as a small procurement site.

Comparisons With Other Sites

One of the major research problems to be addressed in this study was a determination of the economic status of the occupants of the Grant Tenancy site. One way of determining the economic status of the occupants of a particular site is to examine the discarded material possessions, particularly the ceramics. Ceramics are felt to be sensitive indicators of economic status because of well documented fluctuations in cost of either different ware types or different decorative techniques through time. There are several ways to approach this problem. One

developed by Miller (1980) and used by Klein and Garrow (1984) and others is to calculate minimum vessel counts and use documentary evidence such as price lists and catalogues to assign relative cost values to the vessel counts. Still others (Thompson 1985) feel that both ware type and decorative method may indicate socio-economic status. This is again based on the relative cost of various ware and decorative types to the consumer.

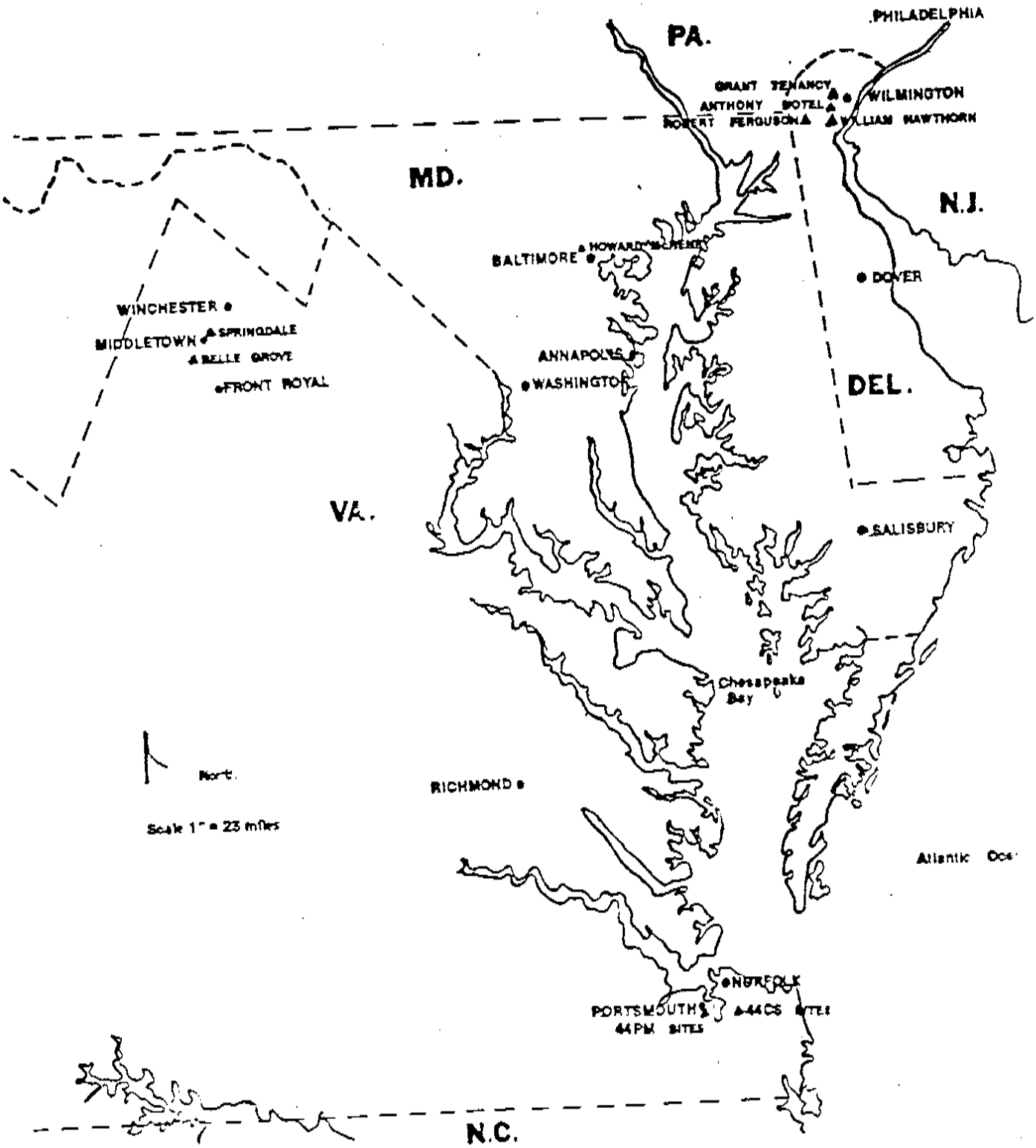
In an attempt to define the socio-economic status of the occupants of the Grant Tenancy site, the Econscale Type method developed by Thompson (1985) was used to group the ceramics into categories which represent relative cost levels. Using this method, Econscale Types from the Grant Tenancy site were statistically compared to the Econscale Types from other sites in the hope of determining its economic status in relation to these other sites. Initially, a number of different sites including those mentioned here and a number of different statistical methods were used to compare the percentages of Econscale Types at these sites. These include the Robinson Coefficient, Wise's Status Analysis, and the Tau statistic. In the interests of clarity and because the results from many of these methods were equivocal or clearly did not work, only the most promising results are reported here. The data and the results of the statistical measures not contained within this report are available to interested researchers at the Department of Transportation, Division of Highways.

The measures used in the analysis reported here included the Chi Square Test of Association which tests association between variables (in this case the decorative types on the refined white earthenwares) and z scores which measure deviation from the mean. The z scores were then summed in order to rank the sites used for this analysis in terms of their relative economic status. As mentioned previously, based on Miller's (1980) work, as the cost of different decorative methods on the refined white earthenwares was well documented and was felt to be the most sensitive indicator of economic status, only these ware types were used in the analysis. In order to determine the effects that time and geographic location may have on the results, the sites were examined first as a whole, then according to their geographic location and ten year temporal intervals.

Although very preliminary, the results indicate that the ways in which sites deviate from the population mean seems to provide the most useful indicators of relative economic status. These measures and the results are described in more detail later in the report.

The following presents a brief summary on the sites used for comparison. These sites were chosen either for convenience or because they represented sites with well documented socio-economic status. Additional information may be obtained from the primary sources. Figure 39 shows the location of these sites.

FIGURE 39
Map of Middle Atlantic
Showing Locations of Sites Used for
Comparison



Anthony Hotel/Riseing Son Tavern (7NC-E-65): Mean Ceramic Date - 1822. This is a village tavern site which is located in Stanton, Delaware in the Coastal Plain. The archeological investigations conducted here from which the data was derived consisted of data recovery work. See Thompson 1984 and 1987 for additional details.

Springdale: Mean Ceramic Date - 1810. This is a rural domestic site in Middletown, Virginia, in the Ridge and Valley province. Archeological investigations at this location consisted of limited testing. Although documentary research conducted on the site is not extensive, it was the dwelling of one of the more prominent settlers in the area and is assumed to be of relatively high economic status. No published reports are available, excavation notes and artifacts are on repository at Thunderbird Archeological Associates, Woodstock, Virginia.

44PM44 (PM-4III): Mean Ceramic Date - 1818. This is a rural domestic site near Portsmouth, Virginia, in the Coastal Plain. Phase I and II archeological investigations were conducted at this location. The socio-economic status is unknown. See Thunderbird Archeological Associates 1981 for additional details.

44PM34 (PM-II): Mean Ceramic Date - 1823. Also a rural domestic site near Portsmouth, Virginia, in the Coastal Plain. Phase I and II archeological investigations were conducted here. The site appears to represent a backyard area associated with structural remains. It is possible, although the documentation is unclear, that it may be a plantation house known as Manor Farm, however, 44PM24 may also be a candidate for the location of Manor Farm. See Thunderbird Archeological Associates 1981 for additional details.

Robert Ferguson: Range of Occupation - 1837-1940. This site is located in New Castle County, Delaware in the Coastal Plain. It is a well documented tenancy and is of low to middle economic status. Data recovery investigations were undertaken here. See Coleman et al 1983 for additional details.

44PM35 (PM-KI): Mean Ceramic Date - 1823.34. This is a rural domestic site located in Portsmouth, Virginia in the Coastal Plain. No documentary evidence regarding economic status was found. Preliminary and intensive archeological investigations were undertaken. See Thunderbird Archeological Associates 1981 for additional details.

44PM42 (PM-RI): Mean Ceramic Date - 1820.19. This site is a rural domestic site located in Portsmouth, Virginia in the Coastal Plain. The materials were derived from a trash pit containing unburned and burned household refuse. Preliminary and intensive investigations were conducted. Although no documentary evidence is available for the early 19th century, the site was a tenancy later in that century. This use may have begun earlier

and a low to mid socio-economic status use hypothesized. See Thunderbird Archeological Associates 1981 for additional details.

44PM16: Mean Ceramic Date - 1796.76. This is a rural domestic site in Portsmouth City, Virginia in the Coastal Plain. Archeological investigations consisted of Phase II intensive testing. Although originally thought to be a free black tenancy, this hypothesis was not confirmed by the Phase II testing. Socio-economic status is unknown. See Thunderbird Archeological Associates 1982 for additional details.

44CS48: Mean Ceramic Date - 1797.38. This rural domestic site is located in Chesapeake City, Virginia in the Coastal Plain. Phase II intensive testing was conducted at the site. This site was originally thought to be a slave dwelling, however, the testing revealed this not to be the case. Although the socio-economic status of the site through time is unclear, it is known that at least by 1846, the owner resided on the premises and an inventory of moveable goods indicates farming was his occupation (Thunderbird Archeological Associates 1982:49).

44PM22: Mean Ceramic Date - 1807.79. This is a rural domestic site located in Portsmouth City, Virginia in the Coastal Plain. Intensive archeological investigations were conducted here. The socio-economic status of the site is unknown although it was originally thought to have been occupied by free blacks and/or tenants. See Thunderbird Archeological Associates 1981 for additional details.

Belle Grove: Mean Ceramic Date - 1815.58. This is a rural domestic site located near Strasburg, Virginia in the Ridge and Valley. Archeological investigations by Thunderbird Research Corporation consisted of limited testing in specific impact areas. In terms of the socio-economic status, the site is a plantation house and would be expected to be of relatively high economic status. Excavation notes and artifacts are on repository at Thunderbird Archeological Associates, Woodstock, Virginia.

44PM24 (PM-LII): Mean Ceramic Date - 1826.61. This is a rural domestic site located in Portsmouth, Virginia in the Coastal Plain. The documentary evidence regarding economic status is unclear, it may either be a plantation house known as Manor farm or a dependency of that structure. Preliminary and intensive archeological work was conducted here. See Thunderbird Archeological Associates 1981 for additional details.

44PM31 (PM-DI): Mean Ceramic Date - 1827.83. This is a rural domestic site located in Portsmouth, Virginia in the Coastal Plain. Little documentary evidence is available for the site, however, it may be a dependency of a larger plantation and a low to mid economic status is projected. Preliminary and intensive investigations were undertaken. See Thunderbird Archeological Associates 1981 for additional information.

44PM12: Mean Ceramic Date - 1827.85. This is a rural domestic site located in Portsmouth, Virginia in the Coastal Plain. No documentary evidence is available for the economic status of the site, however dependencies of a primary structure located nearby would not be unexpected in this location (Thunderbird Archeological Associates 1981:95). Preliminary and intensive investigations were undertaken.

44PM17: Mean Ceramic Date - 1829.03. This is a rural domestic site located in Portsmouth, Virginia in the Coastal Plain. No documentary evidence was available regarding economic status although, according to the family oral history, the site was the location of a detached kitchen. However, this function cannot confidently be assigned to the site during the Antebellum period (Thunderbird Archeological Associates 1982:40). Preliminary and intensive archeological investigations were undertaken here. See Thunderbird Archeological Associates 1982 for additional details.

44PM36 (PM-LI): Mean Ceramic Date - 1832.05. This is a rural domestic site located in Portsmouth, Virginia in the Coastal Plain. No documentary evidence regarding economic status is available. For additional details, see Thunderbird Archeological Associates 1981.

Howard McHenry (18BA100): Mean Ceramic Date - 1848.17. This site is located in Baltimore County, Maryland. It is a well documented 19th century mill and tenancy. Intensive archeological investigations were conducted here. See Hurry and Kavanaugh (1983) for additional information.

William Hawthorn (7NC-E-44): Mean Ceramic Date - 1855. This is a rural domestic site located in New Castle County, Delaware. Documentary evidence clearly shows that this site was of high economic status as the occupants were in the upper 4-12% of the taxable local population (Coleman et al 1984:179). Data recovery excavations were conducted at this site. See Coleman et al (1984) for additional details.

The statistical measures chosen to examine the Econscale Types included the Chi Square Test of Association and z scores. Composite sums of the z scores were also calculated in order to provide a ranking of the sites based both on the degree to which and the direction in which they deviate from the mean. The sites within the sample were grouped in several different ways. First, all of the sites were analyzed as a group. Second, the sites were grouped according to their geographic location. This included: The Delaware sites, the Ridge and Valley of Virginia and the two Portsmouth groupings. Third, the sites were grouped according to their Mean Ceramic Date, in ten year intervals, for example 1795-1805, etc. The percentage of each decorative type on the refined white earthenwares was used rather than sherd count as the sample sizes from the sites differed widely. However, none of the sites had less than 100 sherds. Table 3 presents the percentages of the decorative types for all sites.

TABLE 3

PERCENTAGES OF DECORATIVE TYPES ON REFINED WHITE EARTHENWARES ALL SITES

SITE	MCD	TP RWE	HP RWE	MD RWE	UND RWE*
MEAN		14.44	3.943	7.022	74.58
44PM16	1796.76	13.45	1.17	5.85	79.53
44CS48	1797.38	4.81	6.97	5.53	82.69
44PM22	1807.79	5.17	6.03	6.9	81.9
Springdale	1810.79	15.83	6.61	8.02	69.34
Grant Tenancy	1814.91	12.96	9.24	10.89	66.91
Belle Grove	1815.58	12.59	2.30	6.91	78.19
44PM44	1818.65	13.28	0	4.69	82.03
44PM42	1820.19	13.62	.66	7.31	78.41
Anthony Hotel	1822	16.5	4.4	8.7	70.3
44PM34	1823.27	5.45	1.82	7.88	84.85
44PM35	1823.34	16.91	0	3.68	79.41
44PM24	1826.61	86.22	2.43	1.62	9.73
44PM31	1827.83	14.68	.92	6.42	77.98
44PM12	1827.85	3.45	.86	1.72	93.97
44PM17	1829.03	9.68	2.42	4.03	83.87
44PM36	1832.05	9.12	.63	4.40	85.85
Robert Ferguson	1837	4.05	7.19	14.08	74.67
Howard McHenry	1845	3.18	8.14	18.83	69.85
William Hawthorn	1855	13.39	13.12	5.96	67.53

*MCD - Mean Ceramic Date
TP RWE - Transfer Printed Refined White Earthenware
HP RWE - Hand Painted Refined White Earthenware
MD RWE - Minimally Decorated Refined White Earthenware
UND RWE - Undecorated Refined White Earthenware

Chi Square Test of Association

The Chi Square Test of Association was used to determine if significant non-random differences, i.e. significant relationships, in the percentages of transfer printing, hand painting, minimally decorated and undecorated exist within the population of sites being examined. Our hypothesis was that the percentages of the decorative types are related to economic status and this association will hold true regardless of time and geographic location. That the differences between the percentages of the decorative types are related to cost differences in the purchasing power of individuals of varying economic status. It was decided to reject the null hypothesis, that there is no relationship, at the .001 level and the critical values were calculated on this basis. If the null hypothesis were true, then we would see differences in observed frequencies and the expected frequencies as large as those in our sample in less than 1 in every 1,000 replicated studies (Hopkins and Glass 1978:317).

The formula used to calculate the Chi Square Test of Association was:

$$c^2 = S \frac{nc}{100} \frac{(P-Pe)^2}{Pe}$$

with the value of c^2 increasing as the observed proportions between the groups being compared differ (Hopkins and Glass 1978:317).

Chi Square values were then calculated, grouping the sites as described previously. It was felt that the temporal and geographic groupings would eliminate these two factors as reasons for the observed differences between the groups. It was expected that if time or geographical location was the reason for the observed differences within our sample populations, then the null hypothesis would be valid because the values from the sites would be almost identical. The Portsmouth sites were separated into two groups as they were from slightly different geographic locations.

Looking at our sample population as a whole, a Chi Square value of 2450.2085 was achieved, with 54 degrees of freedom. The critical value for rejection of the null hypothesis would be somewhere between 76.2 (50 degrees of freedom) and 88.4 (60 degrees of freedom), therefore for this grouping, the null hypothesis would be rejected.

Separating the sites into ten year time slots, the following results are obtained. Two sites were included in the 1795/1805 grouping, 44PM16 and 44CS48. A Chi Square value of 20.2328 with 3 degrees of freedom and a critical value of 11.3 were obtained. Grant Tenancy, Springdale and 44PM22 were included in the

1805/1815 group. A Chi Square value of 23.0372 with 6 degrees of freedom and a critical value of 16.8 was achieved. The 1815/1825 group included Belle Grove, 44PM44, 44PM35, the Anthony Hotel and 44PM34. A Chi Square value of 59.9588 with 15 degrees of freedom and a critical value of 30.6 was obtained. The next group, 1825/1835 included 44PM24, 44PM31, 44PM12, 44PM17 and 44PM36. A Chi Square value of 638.0016 with 12 degrees of freedom and a critical value of 26.2 was attained. The final group, 1835/1855 obviously constitues more than a 10 year time span. This was necessary to include the remaining sites in the sample, including Howard McHenry, Robert Ferguson and William Hawthorn. It was felt to be necessary that they be included in the sample as they have well documented socio-economic status. Any other grouping would exclude one of these sites. A Chi Square value of 294.4826 with 6 degrees of freedom and a critical value of 16.8 was obtained for these sites.

As mentioned previously, Chi Square values were also calculated for the site based on geographical location. The first grouping included all of the sites from Delaware - Grant Tenancy, the Anthony Hotel, Robert Ferguson, and William Hawthorn. A Chi Square value of 346.6599 with 9 degrees of freedom and a critical value of 21.7 was obtained for this group. The second grouping included the first group of Portsmouth sites - 44PM16, 44CS48, 44PM22 and 44PM17. A Chi Square value of 28.8435 with 9 degrees of freedom and a critical value of 21.7 was attained. The second group of sites from the Portsmouth area were studied during a different investigation and include 44PM44, 44PM42, 44PM34, 44PM35, 44PM24, 44PM31, 44PM12 and 44PM36. A Chi Square of 856.6395 with 21 degrees of freedom and a critical value of 38.9 was obtained for this group. The Virginia Ridge and Valley sites include Belle Grove and Springdale. A Chi Square of 15.5155 with 3 degrees of freedom and a critical value of 11.3 were calculated. Howard McHenry could not be included in a geographical grouping as no other sites from Maryland were present in the sample.

Since all of the Chi Squares exceeded the critical values, our hypothesis that there are significant differences between the sites examined in the decorative methods on the refined white earthenwares, was proved valid. The reverse is also true, that the null hypothesis - that no significant differences exist - was proved invalid. It should be cautioned, however, that the results of the Chi Square Test of Association only determine if significant, non-random differences exist in the population being studied. The test cannot determine the reason for the observed differences within the population, this is a matter for interpretation. Based on the results from the temporal and geographical groupings, the Chi Square values seem to indicate that temporal period and location are not the root of the observed differences. However, these results are very tentative and need to be more fully explored. We are hypothesizing based on Miller's (1980) work that the root of the observed differences is socio-economic status, however personal preference in decorative type and other randomly distributed variables cannot

be ruled out. It must also be observed that this only accounts for one grouping factor at a time (i.e. geography, alone; temporal period, alone), and does not take into account, or correct for interdependent variation within groupings.

Parametric Statistics

Statistical analyses based on assumptions of random sampling and normal distribution of variation are not uncommon in archeology, although these assumptions are seldom completely justified and often clearly contradicted. In spite of these vagaries, many parametric statistical analyses remain robust when used in archeological situations, and, having applied measures described above with less limiting assumptions, traditional mean-based analyses were applied to see if clear-cut patterning could be discovered in the data.

Z Scores and Z Score Ranking

Since graphing the Econscale Type values for each site seemed to indicate some patterning in relation to the mean, it was decided to use z scores to compare the observed percentages of an Econscale Type at the sites to the population mean percentage for that type. The expectation would be that sites of higher economic status would have above average quantities of transfer printed and hand painted refined white earthenwares (because of their higher cost) and smaller proportions of minimally decorated and undecorated (because of their lower cost). In other words, it was projected that sites would vary from the population mean percentage for each type in certain ways, depending upon their socio-economic status.

In addition, an attempt was made to use the sum of the z scores for all the decorative types to rank the sites according to their relative economic status within the study population. The results of this are described later in this section.

It should be emphasized again that the application of descriptive statistical techniques that depend upon assumptions of random sampling and normal distribution to data sets such as these is a highly speculative venture, and the results described here must be regarded as tentative and subject to adjustment or discard as the result of future research. The unusual defense of this procedures is to point out that, though the assumptions may be poorly met (or not at all), at some point when the numbers of measurements is sufficiently large, the "Law of Large Numbers" (Chou 1969:211-212) will dictate that the different measured variations in the values will approach a normal distribution. Whether or not this would be true in the case of this particular category of measurements, and whether the data used to produce this analysis is sufficiently "representative" (if not random) remains to be seen. There seemed to be no harm in the attempt however, provided that the results were regarded with sufficient caution.

As mentioned previously, z scores measure deviation from the population mean. Table 4 presents the z scores by decorative type for each of the sites in the study population. The formula used is:

$$z = \frac{X - m}{Sx}$$

where X is the sample mean, m is the population mean and S is the standard deviation (Hopkins and Glass 1978:221). This measure allows the comparison of distributions of measurements with different ranges, reducing each measurement to a common scale -- the standard deviation. When a normal distribution is assumed, the proportion of cases above or below the observed value is calculated based on the area of the normal curve to the left (or right) of the given z-score (Hopkins and Glass 1978: 401-405). 46.81% of the population of sites analyzed here fall below Grant Tenancy in observed frequencies for the transfer printed refined white earthenwares (assuming the values are normally distributed), 92.65% of the population fall below for the hand painted refined white earthenwares, 83.40% of the population falls below for the minimally decorated refined white earthenwares and 32.28% falls below for the undecorated refined white earthenwares. The Robert Ferguson site, a known tenancy of lower economic status has the following percentiles: 27.76% of the population falls below the site for transfer printed, 81.33% for hand painted, 96.08% or the minimally decorated and 50% for the undecorated. The Howard McHenry site, also a known tenancy, compares in the following manner: 26.11% of the population falls below this site for the transfer printed wares, 87.49% for the hand painted wares, 99.64 falls below for the minimally decorated wares and 38.97% for the undecorated wares. At the William Hawthorn site, a site of known high economic status, 47.61% of the population falls below or transfer printed, 99.41% for hand painted, 39.36% for minimally decorated and 33.72% for the undecorated.

Based on the z scores, the two known tenancies exhibit very similar types of variation from the mean with close scores for transfer printed, hand painted and minimally decorated. As could be expected, the William Hawthorn site has higher scores for transfer printed and hand painted and lower scores for minimally decorated and undecorated. Grant Tenancy's z scores are much more similar to those from William Hawthorn for transfer printed, hand painted and undecorated except that Grant Tenancy has a higher value for minimally decorated. Based on this, if in fact Grant is a tenancy as the documentary evidence suggest, it is certainly not one of lower socio-economic class.

Because it was felt that a single Econscale Type or variable could not provide an adequate indication of economic status, a method was devised using the combined totals of the z scores to provide a single value which could then be used to rank the sites in terms of their relative economic status. It was hoped that

TABLE 4

Z SCORES AND PERCENTAGE OF POPULATION BELOW DECORATIVE TYPES ON REFINED WHITE EARTHENWARES

SITE	TP	% below	HP	% below	MD	% below	UN*	% below
44PM16	-.06	47.61	-.76	22.36	-.29	38.59	.30	61.79
44CS48	-.55	29.12	.83	79.67	-.37	35.57	.48	31.56
44PM22	-.53	28.81	.62	73.24	-.03	48.80	.44	67.00
Springdale	.08	53.19	.73	76.73	.25	59.87	-.31	37.83
Grant	**-.08**	**46.81**	**1.45**	**92.65**	**.97**	**83.40**	**-.46**	**32.28**
Belle Grove	-.14	55.57	-.45	32.64	-.03	48.80	.22	58.71
44PM44	-.07	47.21	-1.08	14.01	-.58	28.10	.44	33.00
44PM42	.05	48.01	-.90	18.41	.07	52.79	.23	59.10
A. Hotel	.12	54.78	.13	55.17	.42	66.28	-.26	39.74
44PM34	-.51	30.50	-.58	28.10	.22	58.71	.61	72.91
44PM35	.14	55.57	-1.08	14.01	-.84	20.05	.29	61.41
44PM24	4.09	99.99	-.42	66.28	-1.35	8.85	-3.9	.007
44PM31	.01	49.60	-.83	20.33	-.15	44.04	.20	57.93
44PM12	-.63	26.43	-.85	19.77	-1.33	9.18	1.16	12.30
44PM17	-.27	39.36	-.42	33.72	-.75	22.66	.55	70.88
44PM36	-.30	38.21	-.91	18.14	-.66	25.46	.67	74.86
R. Ferguson	-.59	27.76	.89	81.33	1.76	96.08	.005	50.00
H. McHenry	-.64	26.11	1.15	87.49	2.95	99.84	-.28	38.97
W. Hawthorn	-.06	47.61	2.52	99.41	-.27	39.36	-.42	33.72

*TP - Transfer Printed
HP - Hand Painted
MD - Minimally Decorated
UN - Undecorated

this would eliminate some of the problems in using indices which rely too heavily on one or at most, two, variables. For this analysis, the z scores were combined in very specific ways. The transfer printed and hand painted refined white earthenwares are both higher cost items and a negative z score indicates a value below the mean for that decorative type at a particular site. Conversely, a positive z score indicates a value above the mean. Therefore, the negative z scores for the higher valued types, transfer-printed and hand painted, from each site were added together to obtain an algebraic sum. For the lower cost items such as minimally decorated and undecorated, a positive z score indicates a value above the mean, or proportionally more lower cost items and a negative z score indicates a value below the mean and proportionally fewer lower cost items. Based on this, the algebraic sum of the z scores for these types were subtracted from the sum obtained for the higher valued types, in effect reversing the signs of those scores. In this way, a single value accounting for all of the variables could be obtained. The computational formula for this measure is:

$$Z\ sum = (TP_z+HP_z) - (MD_z+UD_z)$$

where "TP_z is the z score for the transfer printed refined white earthenwares at a particular site, "HP_z the z score for hand painted refined white earthenwares, "MD_z", minimally decorated, and "UD_z, undecorated. Percentile groupings (area below in a normal curve) were also calculated for the decorative types at each site. The results are shown in Table 5.

Although extremely preliminary in nature, the results seem to indicate that this measure has some utility. However, the following cautions must be made. This measure has only been used with a limited number of sites, not all of which have well documented socio-economic status, and the method is based on the assumption that certain directions of deviation from the mean in percentages of decorative types on refined white earthenwares are normally distributed and are an indicator of economic status.

Howard McHenry, a known tenancy of low economic status, had the lowest value, 0-2.16. According to this measure, only 1.54% of the population in a normal distribution would have values lower than those observed at the Howard McHenry site. Robert Ferguson, another known tenancy of low economic status, had a value of 0-1.48. This means that 6.94% of the population in a normal distribution would have achieved lower scores than Robert Ferguson. The median score .78 was attained by Belle Grove. This means that only 21.77% of the population in a normal distribution would have achieved lower scores than Belle Grove. This is somewhat puzzling as Belle Grove would have been expected to be of higher economic status since it was a large plantation complex. However, only the results from a limited testing program which was confined to specific impact areas were used and this may have skewed the results somewhat. The deposits from which the samples were drawn may not have been associated with the plantation house itself but with a dependency, possibly a

TABLE 5

ALGEBRAIC SUM OF Z SCORES FOR PERCENTAGES OF REFINED WHITE EARTHENWARES, AND KNOWN SOCIO-ECONOMIC STATUS

SITE	Z SUM	% BELOW	KNOWN STATUS	DATE
Howard McHenry	-2.16	1.54	Low to Middle	1845
44PM34	-1.92	2.74	Unknown, one of two locations for Manor Farm	1823.27
Robert Ferguson	-1.48	6.94	Low to Middle	1837
44PM12	-1.31	9.51	Unknown	1827.85
44PM42	-1.25	10.56	May be tenancy Low to Middle (?)	1820.19
44PM36	-1.22	11.12	Unknown	1832.05
44PM44	-1.01	15.62	Unknown	1818.65
44PM31	- .87	19.22	May be dependency Low to Middle (?)	1827.83
44PM16	- .83	20.33	Unknown	1796.76
Belle Grove	- .78 (MEDIAN)	21.77	Middle to High	1815.58
44PM17	- .49	31.21	Unknown	1829.03
44PM35	- .39	34.83	Unknown	1823.34
44PM22	- .32	37.45	Unknown	1807.75
Riseing Son Tav.	.09	53.59	Unknown	1822
44CS48	.17	56.75	Unknown	1797.38
Grant Tenancy	**.86**	**80.51**	**Tenancy, originally thought to be low to middle**	**1814.91**
Springdale	.87	80.78	High	1810.79
William Hawthorn	3.15	99.93	High	1855
44PM24	8.89	99.99	Unknown, one of two locations for Manor Farm	1826.61

slave or servants quarters. The Anthony Hotel achieved a score of .09 which puts 46.41% of the population in a normal distribution below this site. Grant Tenancy achieved quite a high value using this measure. With a score of .86, 80.51% of the population in a normal distribution would have had a lower score. Springdale, projected to be of high economic status, obtained a similar score, .87, with 19.22 of the population falling below. The William Hawthorn site had a score of 3.15 which means that over 99% of the population in a normal distribution would have a lower score. This fits well with the documentary evidence as the site is known to be in the upper percentiles of the tax records. 44PM24 achieved the highest score, 8.89. According to this, 99.99% of the population would have a higher score. It is difficult to say if this attribution is correct as none of the Portsmouth sites had been extensively researched, however, 44PM24 is one of two possible locations for a residence known as Manor Farm. If the results of the combined z scores are correct, 44PM24, appears to be the more likely candidate, as 44PM34, the other candidate, achieved a relatively low score.

Based on the results described above, the Grant Tenancy site appears to have been inhabited by individuals of relatively higher economic status than most of the sites examined. Because the archival records which were examined presented information about the owners of the property, rather than the occupants of the site, it is difficult to say if this attribution of status is correct. Although tenancies are usually thought to be of lower economic status, the fact that an individual does not own his residence does not necessarily preclude a higher economic status (Klein & Garrow 1984).

SUMMARY AND CONCLUSIONS

This report has presented the results of data recovery excavations at an archeological site known as the Grant Tenancy site. Documentary evidence during the Phase II investigation had revealed the presence of a structure in this location on an historic map. The name, H. Grant, associated with the house was also associated with other structures in the area and evidence was available which suggested that H. Grant lived elsewhere. Therefore, the site was interpreted to be the remains of a tenancy. Since tenancies were poorly known archeologically, the site was determined to be eligible to the National Register of Historic Places. A considerable amount of documentary research was devoted to an attempt to answer the question of who lived at the site, and what their occupation and position in the community was. This effort was complicated by the fact that during the nineteenth century the excavated site was located at or near the corners of several different pieces of property with different histories. The relatively imprecise nature of nineteenth century property surveys coupled with the fact that some of the principal landmarks, i.e. the Lancaster Pike, had changed location one or more times during and since the period made it impossible to conclude with certainty which property the site was associated