DELDOT ARCHAEOLOGICAL SERIES NO. 35

PHASE I and II ARCHAEOLOGICAL INVESTIGATIONS of the ROUTE 141-CENTRE ROAD CORRIDOR in NEW CASTLE COUNTY, DELAWARE

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U.S. Department of Transportation
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PHASE I & II ARCHEOLOGICAL INVESTIGATIONS

OF THE

RT. 141 - CENTRE ROAD CORRIDOR

RT. 2 - KIRKWOOD HIGHWAY TO RT. 52 - KENNETT PIKE

NEW CASTLE COUNTY, DELAWARE

DELDOT PROJECT 79-011-03 & 83-106-01 ARCHEOLOGY SERIES NO. 35

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ABSTRACT

During the fall of 1983, Thunderbird Archeological Associates, Inc., under contract with the Delaware Department of Transportation, completed Phase I and Phase II archeological investigations along the proposed Del. Route 141, Centre Road, improvement corridor, New Castle County, Delaware. This work was undertaken to determine if the proposed construction would adversely affect cultural resources. Two prehistoric sites, dating to the Middle and Late Archaic periods, which would not be affected by the proposed construction, were located. In addition, one prehistoric site and one historic site were located inside the impact zone. No temporal diagnostics were recovered from the prehistoric site, but it is felt to represent an upland, limited resource procurement station. The historic site, which dates to the early to mid 19th century, appears to be tenancy. The prehistoric site was not deemed significant enough to warrant additional archeological investigation. However, the historic tenancy was considered to be eligible for nomination in the National Register of Historic Places and Phase III data recovery investigations are recommended.

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INTRODUCTION

This report presents the results of a reconnaissance and intensive survey conducted by Thunderbird Archeological Associates (TAA) along the proposed Del. Route 141, Centre Road, improvement corridor, extending from north of Prices Corner to Kennett Pike, Del. Route 52, in New Castle County, Delaware. TAA was requested to submit a proposal for the archeological investigations by the Location and Environmental Studies Office of the Delaware Department of Transportation (DelDOT). The purpose of these investigations was to identify any archeological resources that might be present and to evaluate their significance with respect to the criteria for eligibility for nomination in the National Register of Historic Places. This work was carried out in compliance with the National Historic Preservation Act of 1966 (Section 106). Compliance with the regulations of the Federal Highway Administration, the Delaware Department of Transportation, the State Historic Preservation Office and appropriate State laws was also undertaken.

The Route 141 improvement plan, which calls for the construction of a four lane corridor along the present right-of-way, can be divided into three separate sections. The first part of the project, the right-of-way from Woodward Avenue north to Lancaster Pike, measures roughly 214' in width and is not, at present, finalized in terms of the exact right-of-way placement. The second part, continuing from Lancaster Pike on north to Kennett Pike, is the same width. The anticipated right-of-way in this part has been established. The third part is the Lancaster Pike interchange, which involves the building of a spur from

Route 141 down Lancaster Pike to Little Mill Creek. The plans for this section are not yet finalized. Figures 1-3 show the location of the project area.

The first section of the right-of-way, the parcel running from Woodward Avenue (Prices Corner) to Lancaster Pike, traverses an area characterized principally by housing complexes and present roadways, although there is a wooded section where Little Mill Creek passes beneath the present Route 141. Beyond, or north of Lancaster Pike, the right-of-way crosses land still in cultivation, although part of the right-of-way is on the lawns of the DuPont (Chestnut Run Site) buildings along Route 141. A small section on the north end of the right-of-way, in the vicinity of Barley Mill Road is wooded. North of Barley Mill Road, the right-of-way reaches a portion of the partially completed section of the Route 141 four lane road.

Background and archival research was conducted in the fall of 1983 in order to identify source materials that might assist in the identification of significant archeological sites. Fieldwork consisted of 15 working days. At the outset, field conditions were hampered by excessive rain, which rendered the excavation of the shovel test units a slow process. Beyond that, field conditions were generally good, with excellent visibility in the cultivated fields. Dr. William M. Gardner served as principal investigator on the project and William P. Barse served as field supervisor. The crew members were drawn from TAA staff.

In terms of the organization of the field procedure, the entire study area was investigated in the course of a

reconnaissance survey in order to assess the nature of any archeological or historical sites that may have been present along the proposed right-of-way. Any sites that were deemed to be potentially intact and containing any contextual integrity were to be investigated in the course of an intensive survey. Only one site was located in the right-of-way that necessitated an intensive investigation in order to determine whether or not it was eligible for nomination in the National Register of Historic Places. This was the historic site located in Field 4 (7NC-B-6) or the H. Grant Tenancy site, along the Lancaster Pike. Two other sites, (7-NC-B-7, Areas A and B) both prehistoric, were located outside of the right-of-way, while only scant, ephemeral traces of prehistoric use of the area were located at two of the study areas in the right-of-way. This report recommends additional work for only one site in the Route 141 study area. These are described in the appropriate sections.

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BACKGROUND RESEARCH

Environmental Setting

The study area of Route 141 lies in the Piedmont physiographic province, just to the north of the Fall Line, which is located roughly parallel to Route 2, Kirkwood Highway. The Piedmont is characterized by a generally high relief topography with narrow and deep stream valleys, associated with relatively limited floodplains. Elevations in the study area range from 130' to 280' above sea level. The study area is drained by two creeks, Little Mill Creek, which borders the study area to the west, and Chestnut Run, bordering the study area to the east. Chestnut Run drains into Little Mill Creek to the southeast of the study area, while Little Mill Creek, where it crosses under Route 141, essentially forms a southern boundary for the study area. Little Mill Creek eventually empties into the Delaware River. The section of the right-of-way north of Lancaster Pike follows a long northwest-southwest trending ridge that follows the drainage divide between the headwaters of Little

Mill Creek and Chestnut Run. The section of the right-of-way that lies to the south of the Lancaster Pike intersection at Route 141 is in the interfluvial area between Little Mill Creek to the west and Willow Run, a small tributary of Chestnut Run, to the east. The vegetation in the study area is characterized by mature deciduous forests with predominant species of oak, beech, poplar and hickory. Much of the area is under cultivation with bordering scrub vegetation. The underlying lithology of the study area consists of micaceous rocks of metamorphic and igneous origin. Soils developed on this show stable, weathered profiles with distinct horizonation.

The immediate area of the Piedmont contains only a limited range of lithic raw materials, used by prehistoric population primarily quartz, which is part of the underlying bedrock. Quartz, quartzite and chert are available in cobble form a short distance away in the Coastal Plain sediments, while Iron Hill, just east of Newark, provided a source for brown jasper and chert (Custer and Gallasso 1981). Farther to the west of the study area in the Hockessin Lowlands, various cryptocrystalline rocks were available from the limestone bedrock formations.

Regional Culture History

Delaware's regional prehistory has been subdivided by Custer (1980, 1983) into four massive time blocks. They are the Paleo Indian Period (ca 12,000 B.C. - 6500 B.C.), the Archaic Period (6500 B.C. - 3000 B.C.), the Woodland I Period (3000 B.C. - A.D. 1000), and the Woodland II Period (A.D. 1000 - 1650). Appended to these four subdivisions is the Contact Period, dating from A.D. 1650 to 1750, after which the aboriginal population of

Delaware had ceased to exist in a relatively unacculturated way of life. Below are present brief descriptions of these chronological subdivisions of Delaware's prehistory.

Paleo Indian Period

This time period dates to the terminal Late Pleistocene and early Holocene climatic eras, a time that marks the final retreat of the glaciers and the gradual development of modern climatic conditions. The climate of the Paleo Indian period consisted of alternatingly wet and dry conditions characteristic of the Late Pleistocene and early Holocene, and which supported the various extinct species of large game mammals such as mastodon, mammoth and moose. These animals were adapted to the varied vegetational communities that existed at that time, a mixed mosaic of deciduous and boreal forests, as well as grassland environments.

The tool kit of the Paleo Indian was oriented primarily toward the hunting of the various large game animals. Diagnostics are fluted and notched projectile points, (the latter characterizing the Early Archaic), as well as several kinds of side and end scrapers. A preference for a high quality crypto-crystalline lithic material is one of the diagnostic features of the Paleo Indian tool kit. This reliance on such high quality lithics had important implications for Paleo Indian settlement patterns; base camps were located in the vicinity of quarrys, with radiating hunting camps and special procurement sites located away from the base camp/quarry locale (Gardner 1974).

Archaic Period

A continuation of changes in the climate led to the emergence of essentially modern conditions by approximately 6500 B.C. There was a corresponding change in the adaptive pattern of the aboriginal groups inhabiting the Middle Atlantic. Most important was the demise of the large game species, probably, in part, caused by the reduction of the grassland type environments and the development of closed mesic forests of oak and hemlock. Radiating into their place were solitary browsing species such as deer, elk and moose. Increasing rise in the sea level led to the development of swamp environments, e.g. Churchmans Marsh, with an associated community of various plant resources. Adaptive patterns were geared to the hunting of the more solitary species and the collecting of plant foods. This adaptive change is marked by the presence in the archeological record of various grinding tools, a new technology and a variety of new projectile point forms made from a wide array of lithic types. Settlement patterns were characterized by small base camps organized around seasonally available resources with smaller groups fissioning off in the pursuit of other seasonally and locally available kinds of plant and animal foods. In the New Castle County area, sites such as the Clyde Farm and Delaware Park are representative of base camps of this time period, and the following Woodland I period.

Woodland I

Again, increasing sea level brought about climatic/environmental changes that led to a reorganization of prehistoric adaptive patterns. By 3000 B.C., this increase in

sea level had resulted in the development of brackish water estuaries. The mesic forest community was replaced by a xeric type characterized by oak and hickory species, with an increase in grassland. Temperatures were warmer and drier than previously. The development of the estuaries created a rich environmental zone that could support large base camps on a seasonal schedule, which was, in part, probably semi-sedentary for a large part of the year. A definite increase in the overall population of the region is witnessed at this time.

The tool kits representative of this period are characterized by the broad bladed Savannah River point forms and their derivatives, as well as solid container technology. The latter is first noticed in the forms of soapstone bowls in the first phases of the Woodland I period, and subsequently by ceramic containers of numerous types. Ground stone tools continue to be part of the tool kit, functioning in the processing of plant foods.

Changes in the social organization lead to more complex societies than the egalitarian band characteristic of previous periods. Various exchange systems are present, functioning to procure items important in the reification of status among incipiently ranked groups. A notable example of this is the Delmarva Adena manifestation with its associated exotic trade goods occurring in burial contexts.

Woodland II

The main characteristic marking the emergence of the Woodland II period is the development of a stable argricultural

adaptation in many parts of the Middle Atlantic. Research in Delaware indicates that such a shift is not as manifest as in other parts of the Middle Atlantic, and that the Woodland I adaptive systems continued to function, a system characterized by intensive plant cultivation and hunting. Various complexly decorated ceramics mark the Woodland II in Delaware, ceramics that evolved locally out of earlier wares of the Woodland I period. Small triangular projectile points are ubiquitous, and indicated the use of the bow and arrow.

Contact Period

The Contact Period in Delaware refers to the time when the Indians were in active contact with the newly arrived European settlers and traders. Most of the available information must be extracted from ethnohistorical accounts. These accounts indicated rapid deculturation brought about by the expulsion of the Indians from their land, as well as the rapid spread of epidemic disease.

Regional History

Delaware was settled by the Dutch in 1630, with the establishment near Lewes of a whaling station which was soon destroyed by the Indians. The Swedes settled in the vicinity of Wilmington with the establishment of Fort Christina in 1638. This was captured by the Dutch in 1651. Settlement was characterized by scattered farmsteads along the major drainages, the Delaware River, White Clay Creek and Christina Creek (Weslager 1961).

The English obtained control of Delaware in 1664, which was followed by the granting of proprietary rights to William Penn in

1682. This placed Delaware under control of Philadelphia, both economically and politically. Although subsistence farming continued, commercial centers were beginning to be established to channel goods to Philadelphia. Such centers were Christina, Stanton and Ogletown. Throughout the 18th century, the increasing population stimulated the development of new towns and the development of more effective communication networks. This was especially apparent after the development of the towns of Baltimore and Annapolis.

The 19th century saw the development of canals and railroads to accommodate the commercial trade between these towns. The Philadelphia, Wilmington, and Baltimore Railroad was begun in 1839. However, the road system of Delaware lagged considerably behind the railroads as a means of transportation. Settlement in the 19th century was characterized by the large plantations and associated small tenant farms, as well as with the urban areas associated with the commercial towns.

A gradual change in the role of the farm occurred from the 18th through to the 19th centuries. During the 18th century, farming was primarily oriented to the production of goods for subsistence, a pattern that Fletcher suggests changes gradually to one involving production of goods for consumption on the growing national market (Fletcher 1950). This change ties in with the growing industrial and urban centers in the Philadelphia-Wilmington-Baltimore corridor that were under way in the early 19th century noted above. While this scenario is known on a large scale, how the changing economic framework of the area

affected the local household in terms of the organization of material culture is unknown and accessible only archeologically. One would expect to witness a changing access to goods and the development of differing patterns of consumption based on economic status, as well as a growing diversity in patterns of land usage. Questions concerning what percentage of the population remained on a subsistence level as opposed to those engaged in production for market consumption are unknown, and would be most accessible through archeological investigations.

History of Centre Road

Route 141 is presently known as "Centre Road" between Prices Corner (Route 2) and the Kennett Pike (Route 52) (see Figures 2 and 3). Some preliminary research was conducted into the origins and function of this thoroughfare. The earliest map that clearly shows a road in the present location of Route 141 is the Heald Map of the roads of New Castle County, 1820 (Figure 4). The road retains essentially its same configuration from then up until the present. The Shallus Verle map, surveyed in 1801, shows a road crossing Christiana Hundred from Red Clay Creek to the Brandywine River in a northeast direction, but the scale of this map is too small to indicate the present location (Figure 5). The presence of a road, or roads, called "Centre Road" near Red Clay Creek and the Brandywine River was established for slightly earlier points in time. A map in the Delaware Historical Society Library, titled "Draught of land Called Poplar Point, Bread and Cheese Island, Red and White Clay Creeks, Newport Neighborhood" by William Gillihan (1788), shows the intersection of several roads near where the Old Capitol Trail presently crosses Red Clay Creek

(Figure 6). The northernmost of these heads off the map in a northeasterly direction toward what is now Prices Corner, and it is labeled "Center Road". On the other side of Christiana Hundred, near Brandywine Mills, a number of sources indicate that Montchanin Road (now Route 100) north of the DuPont Mills was known as "Center Road" (e.g. the Longwood Manuscripts, Group 9, series C (11), the Hagley Library). This road led south from the Center Meeting House, and turned southwest near the present entrance to the Hagley Foundation on Route 100, to intersect the Kennett Pike (Route 52) at Bucks Tavern (in the early 19th century). In 1795 and 1796, some citizens of New Castle County petitioned the Court of General Sessions to relocate "Center Road". A plat of the proposed relocation indicates that the road would extend straight south from the point where it had formerly turned west toward Bucks Tavern cross the Kennett Pike, and end at the "Ockessin Road", now the Lancaster Pike (Route 48) (Figure 7). When the petition was approved, a survey of the actual route of the road was made (which varied slightly from that submitted with the petition), and a plat of this survey compares most closely with the present configuration of Route 100 (the DuPont Road) between the Kennett Pike and the Lancaster Pike (see New Castle County Road Book, 1794-1809, pp. 19, 20, 27, 39, 40, 41, 97, and 98, microfilm, Hall of Records, Dover, Delaware). This lies to the east of what is now called Centre Road (Route 141) between the Kennett Pike and Lancaster Pike. No other information on the present location of Centre Road, prior to the 1820 Heald Map, was developed in this study, but an exhaustive

examination of the road books (cited above) might (or might not) be productive.

The eighteenth century documents do provide some insight into the purpose of the relocated Center Road, which probably applies to some degree to the road to the northwest that appears in 1820. The petitioners indicate the need to provide better access to the markets in Wilmington, and, probably more to the point, since even the relocated road does not go directly toward Wilmington, some of them possessed "marshes" on Christiana Creek. This, in turn, implies that there was in fact some connection to the Center Road shown on the 1788 "Draught of Land called Poplar Point, etc." Intervening connections between that point and the "Okession Road" (Lancaster Pike) were not discovered prior to the Heald Map, however, and must remain in speculation.

Previous Archeological Work

No previous work has been conducted in the immediate confines of the Route 141 study area. However, a considerable amount has been conducted in the general New Castle County area, particularly at the Fall Line/Coastal Plain transition, and in the inner Coastal Plain. Significant are the excavations at the Delaware Park site (Thomas 1981), a large base camp site containing components from the Woodland I period. Phase II investigations conducted at 7NC-D-70 and 7NC-D-72 (Custer et al. 1982) and at 7NC-E-43, 7NC-E-45, and 7NC-D-75 (Bachman and Custer 1983) provide some comparative information on components dating to the Paleo Indian, Archaic, and Woodland I and II periods. A reconnaissance and intensive survey of the proposed dualization of New Churchmans Road in New Castle County (O'Conner, Cunningham

et al. 1983) revealed evidence of a Woodland I component, as well as a 19th century farmstead. These investigations form a framework in which to organize the information forthcoming from the results of the Route 141 Phase I and II investigations.

A number of historic period archeological sites have been investigated in New Castle County in connection with cultural resource assessment and mitigation for highway construction projects. An 18th, 19th and 20th century farmstead (and associated prehistoric site) was investigated on New Churchman's Road (O'Conner et al. 1983), another farmstead was excavated near Ogletown (Coleman et al. 1983), and a 19th century schoolhouse was investigated near Newark (Catts et al. 1983).

RESEARCH DESIGN

Theoretical Orientation, State Plan and Hypotheses

The methodology and field procedures utilized during this project were developed in light of the expectations of the State Plan for prehistoric resources currently under development by Custer (1979, 1980, 1981). Custer has divided the State of Delaware into a number of study areas based on physiographic and environmental factors and has delineated their potential for aboriginal exploitation and settlement. The Route 141 study area falls into the Piedmont Uplands study area (as defined in Custer's State Plan). Expectations for the location of a base camp dating to any time period in this area are low, except for areas such as the Hockessin Lowlands, which lies a short distance to the west of the Route 141 study area. Probability for the location of procurement sites/camps are high for the Archaic,

Woodland I, Woodland II and Contact periods. However, these sites can be expected to be quite shallow and to have little remaining contextual integrity, except for subsurface features. Most will have been disturbed by plowing. These small procurement sites will have small artifact inventories and will be immediately visible only within areas having good surface visibility, e.g. plowed fields. These sites will be more difficult to detect in areas masked by heavy ground vegetation because of their low artifact density, hence, the need for extensive shovel testing in wooded areas and pastures.

It was expected that the results of the survey could serve to confirm (or reject, disprove, etc.) settlement models proposed by previous research on site distributions in the Piedmont Uplands from various prehistoric periods and, possibly, add data for the refinement of these models. Custer's research suggests that the quality of data for the Piedmont Uplands ranges from fair to good, and that the use of this land form was largely restricted to short term procurement activities. Sites there represent only a portion of the subsistence round, with more intensive utilization of other environmental settings. The increase in the number of data points which may be generated by this study may ultimately allow a more refined analysis of such phenomena as "distance decay" relationships between these short term occupations and the more intensively used site settings for each time period. This, in turn, may allow a more refined characterization, in processual terms, of the differences between the procurement patterns practiced at various times in the prehistoric past.

It is expected that the research conducted during this survey would add only incrementally to the data base necessary to achieve the aforementioned research goals, and the research and analysis for this project concentrated on the evaluation of resources discovered by this survey within the existing research context. No major elaboration of this context was expected at this phase of assessment.

No formalized State Plan for the management of historic period archeological resources is currently in existence, although Ms. Alice Guerrant of the Delaware Bureau of Archaeology and Historic Preservation is currently assembling such a document. Based on discussions with Ms. Guerrant, it is expected that the identification and conservation of at least a sample of resources reflecting the social and economic diversity of Delaware history is likely to be an objective. Of particular interest is the relationship between Delaware's resources and those of the larger region in which it is located and with which its history is so closely intertwined.

Susan Henry has prepared a draft plan entitled Historic Research Design for the Delaware Department of Transportation (1981). This document also expresses concern with the inter-regional trade network and its relationship to the development and use of the transportation network. General research objectives indicated by the Research Design include the retrieval and interpretation of data that will elucidate the relationship between community types and types and rankings of transportation arteries.

Prior to beginning the fieldwork, maps and documents supplied by the Delaware Bureau of Archaeology and Historic Preservation suggested that there may be three possible historic period sites that may be affected by the proposed construction. The first two of these had been identified from maps dating to the last quarter of the 19th century. One, the Armstrong site, is identified on the Baist (1893) map as containing three brick or stone structures, and the other, the Hollingsworth site, is indicated as a frame structure on the same map. The third historic period site that may be affected by the proposed construction was the Cleremont (N-478) site. A residence with outbuildings had been located at this site, however, they had recently been destroyed. It was felt that significant archeological remains associated with this 1846 (and possibly earlier) structure may be present at the site.

These three sites represent rural occupations whose remains may be compared to those from the Hawthorn Homestead site (O'Connor et al 1983 & Coleman et al. 1984a), the Ferguson Homestead site (Coleman et al. 1983) and the Wilson-Slack complex (Coleman et al. 1984b). Of particular research interest will be the comparison of economic status among these sites and between them and the sites investigated at the Stanton intersection (Thompson 1984). It was thought that the differential effects of processes of urbanization and industrialization on rural contexts could possibly be examined at these sites.

As in the case of the prehistoric resources, the data developed at the site identification and testing stage was not expected to result in a major elaboration of existing research

models. The current survey was expected to concentrate on the evaluation of any identified resources.

RESEARCH METHODS

The preliminary efforts of the background research portion of the reconnaissance involved an archival study of the possible historic sites along the Route 141 corridor. An examination of maps and deeds on file in the Delaware Archives, the Delaware Historical Society Library, and the Hagley Museum was carried out, as well as examination of the site maps in the Department of Anthropology at the University of Delaware.

Prior to the commencement of the fieldwork, a driving and pedestrian survey of the entire right-of-way was conducted in order to determine the areas that had and were likely to sustain evidence of historic and prehistoric occupation. This resulted in the division of the right-of-way into five distinct areas which, in part, overlap with the sensitive areas denoted by the Department of Transportation and the Delaware Bureau of Archaeology and Historic Preservation. These areas, indicated on Figure 8, are Fields 1-4, as well as the Hollingsworth tract.

Field investigation involved a complete surface reconnaissance of the fields in order to detect any artifact concentrations. Surface visibility was good to excellent at the time of the investigations, thus reducing the need for extensive shovel testing on the upland knoll areas, which are usually deflated. The exception to this was in Field 4, which was in pasture and in Field 2, Woods, which as the name implies, was forested. There, as well as in the Hollingsworth Tract, which is

NO INFORMATION

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also wooded, the procedure was to employ shovel tests.

Shovel tests were employed in Fields 1, 2, and 3 after the surface reconnaissance to detect the presence of any buried archeological horizons. Shovel tests measured 2' by 2', and were excavated in natural soil horizons subdivided into smaller arbitrary units of 3". All soil was sifted through ¼" mesh hardware screen unless otherwise noted in the individual site descriptions. Profiles were drawn for one wall of each shovel test excavated, and all soil colors were recorded with a Munsell chart. All of the shovel tests were mapped with transit and stadia; other significant landscape features were mapped as well in order to provide a plat map that could be transferred to the DOT right-of-way plan maps.

The purpose of the intensive survey, carried out in Field 4, was to evaluate the significance and site integrity of the historic component that was present, in order to determine its eligibility for nomination in the National Register of Historic Places. The guidelines followed in this determination were those established by the Department of the Interior (36 CFR Part 60.6).

The strategy involved the excavation of five by five foot squares to test for the presence of any features that could have been associated with the site, and to determine if any significant contextual associations were still present that would permit the recovery of archeological information pertaining to the historic component. The intensified shovel testing to recover artifact distribution is described in more detail under the Field 4 site description.

Following completion of the field investigations, the

artifacts were washed and marked and the soil profiles, maps and other field data were analyzed to aid in the interpretation of the contexts present at the site. An initial inventory of the artifacts was completed, following a descriptive attribute format. The prehistoric debitage was analyzed according to raw material and flake type. Diagnostic lithic artifacts were classified according to existing typologies. No prehistoric ceramics were recovered. The historic ceramics were classified according to ware type and decorative attributes. Non-ceramic historic artifacts were also examined for items relevant to the dating of the context, on the basis of terminus post quem.

RESULTS OF THE INVESTIGATIONS

Introduction

The following section presents the results of the background study and fieldwork conducted during this investigation. As was stated in the previous chapter, the study area was divided into five distinct areas. These areas have been designated as Fields 1-4 and the Hollingsworth Property (Figure 8). A description of the survey area is presented first, followed by descriptions of the specific methodology used in that survey area and the results of the investigation. A statement of significance and recommendations, if any, for further investigation are contained within the section for each survey area.

Field 1 (Ferris School Property)

Field 1 refers to the high upland knoll north of the Ferris School building that is bordered by Route 141 to the east, and overlooking a bend of Little Mill Creek to the north. The

location is indicated on Figure 8. The right-of-way cuts west into this field for a distance of approximately 175 feet and includes a significant portion of the knoll. Figure 9 shows the right-of-way in relation to the field.

Fieldwork

Fieldwork consisted of an intensive surface reconnaissance across the entire field, with the crew spaced approximately five feet apart. Surface examination suggested that the soils on the knoll were heavily deflated, as numerous decayed bedrock fragments littered the surface. Visibility on the surface was excellent and, combined with the deflated nature of the soil, obviated the necessity for any subsurface testing. It was felt that better coverage would be provided from a surface reconnaissance than from limited shovel testing. However, two shovel tests were excavated in order to substantiate the deflated soil profile. One shovel test was placed close to the edge of the knoll overlooking Little Mill Creek, while the second was excavated on the high part of the knoll itself (see Figure 9 for the location of the test excavations).

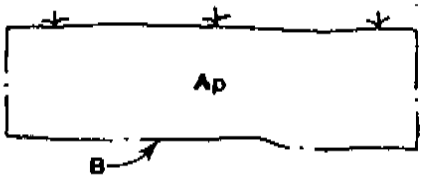
Results

Following are the descriptions of the soil profiles and the artifact categories recovered from the fieldwork. The descriptions of the artifacts are divided into prehistoric and historic sections.

Soil Profiles: One basic profile was revealed at Field 1, although one profile was slightly deeper than the other (Figure 10). The profile obtained from Shovel Test 1 is as follows: Zone I was a dark brown (10YR3/3) silty clay loam Ap horizon

FIGURE 10

SHOVEL TESTS 1 AND 2 NORTH WALL PROFILES, FIELD NO. 1

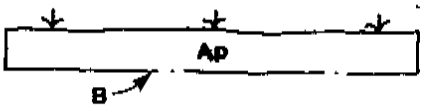


SHOVEL TEST 1

KEY:

Z1 10YR 3/3

Z2 10YR 5/6



SHOVEL TEST 2

KEY:

Z1 10YR 3/3

Z2 10YR 5/6

containing numerous fragments of granitic saprolite and Zone II, encountered at the base of the excavation at .6' below the surface, was a yellowish brown clay loam, again containing numerous fragments of saprolite. The boundary between the two zones was clear and distinct. No artifacts were recovered from this shovel test. The profile revealed in the excavation of Shovel Test 2 was very shallow consisting of a thin, dark brown clay loam described for Shovel Test 1. Again, the shovel test contained numerous fragments of saprolite. The greater depth of the Ap horizon in Shovel Test 1 is a result of slope wash, this test square lying downslope from the more elevated portion of the knoll.

Prehistoric Components: The evidence for prehistoric occupation of Field 1 was limited to one possible core fragment of white quartz and a distal fragment of a quartz flake. Quartz is one of the indigenous raw materials in the underlying bedrock and it is possible that the quartz core fragment is a non-cultural item.

Historic Components: Historic material was scarce and does not indicate the presence of any kind of occupation site. The material simply represents secondarily deposited, sporadic field scatter. Only two historic sherds were recovered from the surface collection; one undecorated whiteware fragment (ca. 1820-1900) and one undecorated pearlware fragment (ca. 1780-1830). Only seven fragments of glass were recovered, one of which was brown machine blown bottle fragment; a basal portion with a ring seam and embossing. This dates from sometime after 1903 to the

present. Other historic material recovered includes three brick fragments, five oyster shell fragments and three clam shell fragments.

Summary and Conclusions: The reconnaissance in Field 1 revealed only extremely limited evidence of any prehistoric use of the area. At best, this represents sporadic and transient use of the area in the past. The small amount of historic material recovered during the investigation only represents field scatter material and does not indicate the presence of a site. Because no significant cultural remains are present, no additional archeological work is recommended.

Field 2

The area referred to as Field 2 is on the east side of existing Route 141, north of Lancaster Pike and in front of the Airport site, Dupont building complex (Figure 8). For the purposes of this report, it has been divided into two areas: Field 2 and Field 2, Woods. Field 2 refers to the expanse of cultivated field that parallels Route 141, ending at the east of the woods. The area within the woods where the proposed right-of-way continues is known in this report as Field 2, Woods. Figures 11-13 show the proposed right-of-way in relation to these two areas.

The region occupied by Field 2 is a high, north-south trending upland interfluvial ridge. It forms the drainage divide for Little Mill Creek to the west, and the headwaters of Chestnut Run to the east-southeast. To the north of Field 2 proper and in the region of Field 2, Woods, is the headwaters, now mostly silted in, of another small, unnamed creek that drains into the

headwaters of Little Mill Creek. The Field 2 area once served as a dirt runway which was initially constructed during the 1920's.

Fieldwork

At the time of the field investigations, a corn crop had been recently harvested from the area, providing fair to excellent surface visibility. Preliminary investigation consisted of an intensive surface reconnaissance of a strip of the field from a chain link fence to a distance of 500' to the east, more than covering the region of the right-of-way. Individuals were spaced at an approximate distance of five feet apart in order to provide comprehensive coverage. The surface collection was conducted after a recent rain which enhanced visibility. A series of two foot by two foot shovel tests were subsequently excavated along a line parallel to Route 141 within the proposed right-of-way. Twelve of these shovel tests were excavated and revealed a number of differing profiles which revealed that the entire region within the right-of-way, and beyond, according to an informant, had been extensively landscaped and refilled with indigenous and foreign soils. These are described in Figures 14-18.

Results

The surface collection produced a very low density of artifacts, primarily non-diagnostic historic ceramics and recent glass fragments. All of these are tabulated in the inventory. Prehistoric materials were limited to one jasper flake, one quartz flake, and two quartz chunks, the latter of doubtful cultural origin. The material recovered from the shovel tests

was even more limited in quantity and undiagnostic in nature. The shovel test results proved that, because of the disturbed nature of the soils and the presence of fill, the cultural material recovered from the right-of-way in Field 2 is not in context and thus representative of any past occupation or use of the area.

Soil Profiles

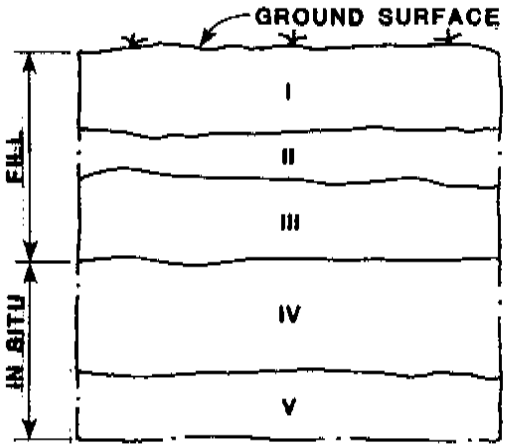
The shovel tests contained within Field 2 present, to varying degrees, evidence of the disturbed nature of the soils. This evidence is represented by a series of fill zones and by other disruptions of the natural soil profile such as grading.

The profiles for the shovel tests placed south of the entrance road are shown on Figures 14 and 15. Refer to Figures 11-13 for the locations of the shovel tests. What is apparent from these shovel tests south of the entrance road is that low areas of the field were filled in, while higher areas were scoured off, in an attempt to construct a nearly level runway. Profiles from Shovel Tests 1-4 (Figures 14 and 15) exhibit filling to raise the land surface; Shovel Test 5 (Figure 15) exhibits a truncated profile indicating the leveling of the area, while Shovel Test 6 (Figure 15) apparently demonstrates a natural profile, although it could be partially truncated as well. These shovel tests indicate that most, if not all of the area contained within the right-of-way has been extensively disturbed, thus negating the possiblity of finding in situ cultural materials.

The part of Field 2 that lies to the north of the entrance road (Airport Road) has also been disturbed, but not to such an extent as the part just described. The shovel tests described in

FIGURE 14

SHOVEL TESTS 1 AND 2 WEST WALL PROFILES, FIELD NO. 2



SHOVEL TEST 1

KEY:

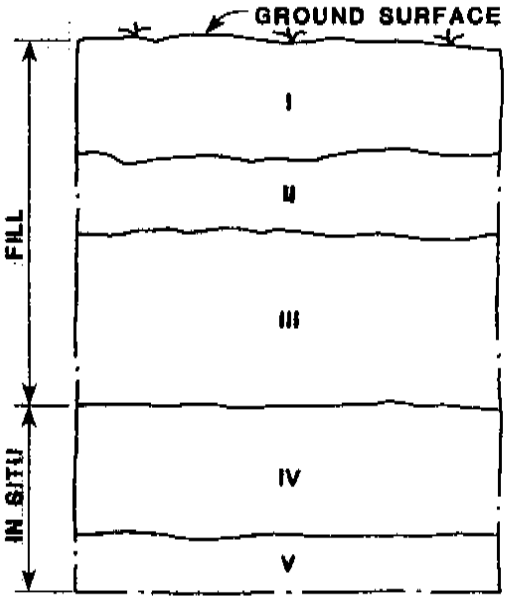
Zone I — Dark brown silty loam Ap horizon (10YR3/3)

Zone II — Yellowish brown heterogeneous texture fill zone (10YR5/8)

Zone III — Dark brown silty loam fill zone that could have been an Ap horizon (10YR3/3). Texture was heterogeneous.

Zone IV — Yellowish brown silty clay B1 horizon (10YR5/6)

Zone V — Very mottled silty clay B horizon (B2 ?) which was heavily gleyed. Darker colors were pale brown (10YR6/3) and lighter colors were dark yellowish brown (10YR4/6)



SHOVEL TEST 2

KEY:

Zone I — Dark brown silty loam Ap horizon (10YR3/3)

Zone II — Dark yellowish brown heterogeneous textured fill zone (10YR4/6)

Zone III — Yellowish brown silty loam fill horizon (10YR5/4)

Zone IV — Light yellowish brown B1 horizon (10YR6/4)

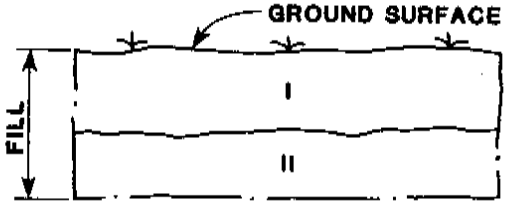
Zone V — Mottled and gleyed silty clay horizon.

NOTE:

1. Zone V filled with water during excavation which prevented reliable munsell readings, however, it appears to be the same as in Shovel Test 2, Zone V. This may be a B2 horizon.

FIGURE 15

SHOVEL TESTS 3, 4, 5 AND 6 WEST WALL PROFILES, FIELD NO. 2

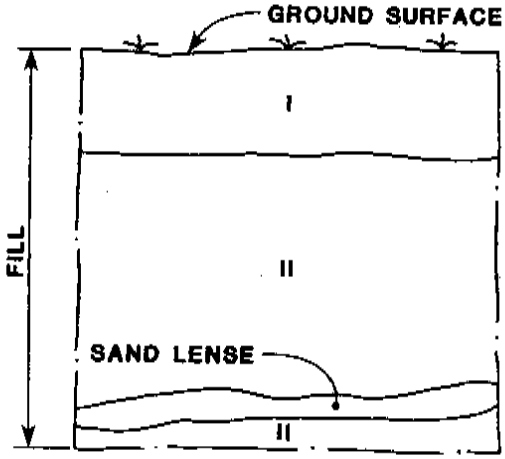


SHOVEL TEST 3

KEY:

Zone I — Dark brown silty loam Ap horizon (10YR4/3)

Zone II — Yellowish brown sandy clay fill zone with pebbles and cobbles of Coastal Plain origin (10YR5/8)



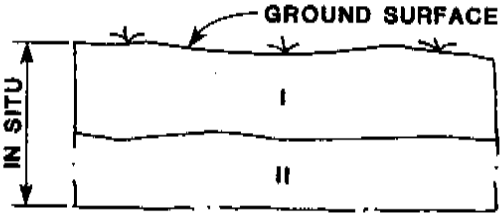
SHOVEL TEST 4

KEY:

Zone I — Dark brown silty loam Ap horizon (10YR3/3)

Zone II — Sandy clay loam fill zone with a large number of pebbles and cobbles (7.5YR5/8)

Sand Lense — Grey sand lense which cross-cut fill zone

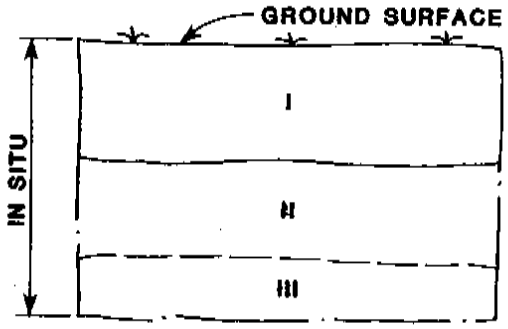


SHOVEL TEST 5

KEY:

Zone I — Dark brown silty loam Ap horizon (10YR3/3)

Zone II — Gleyed clay loam B horizon with a predominant color of yellowish brown (10YR5/8)



SHOVEL TEST 6

KEY:

Zone I — Dark brown silty loam Ap horizon (10YR3/3)

Zone II — Yellowish brown silty (clayish) loam A2 or B1 horizon (10YR5/8)

Zone III — Yellowish brown, heavily gleyed B2 horizon (7.5YR5/8)

Figures 16 and 17 demonstrate the extent of the disturbances.

Several things are evident from this series of profiles. The amount, or depth, of fill does not appear to be as great as that on the south side of the Airport Road. The area of deepest fill is adjacent to the spring head, where the land naturally sloped down, while on the north side of the spring, where a small natural rise is evident, the land surface has been partly graded down. This is apparent from the profile in Shovel Test 12 (Figure 17). All of the deeper shovel tests showed the same B2 horizon with the zone being mottled in the two shovel tests that were adjacent to the spring head. One remarkable item is the uniformity of thickness of Zone I, the Ap that is present across the field. It is consistently .4' in thickness.

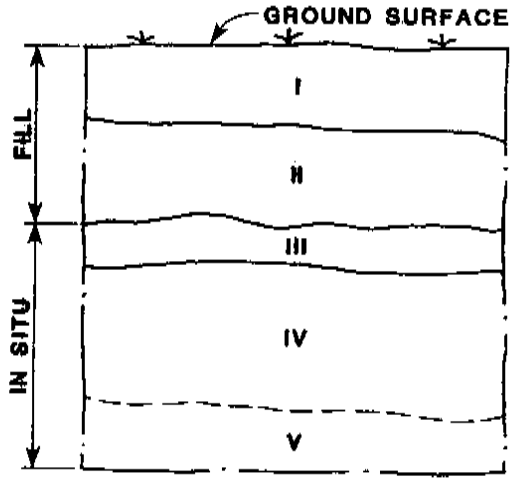
Only two of the shovel tests excavated in Field 2 contained any artifacts, and these were confined to the fill zones. Shovel Test 2 contained artifacts in Zone I, the Ap; 1 sherd of pearlware with an annular decoration and two quartz flake fragments. Zone III, the last fill episode, contained 1 piece of green tinted plate glass, 1 piece of coarse redware (brown lead glazed), 2 small brick fragments, and a 4-hole button. These artifacts are assumed to have been brought in with the fill when it was deposited. Shovel Test 5 contained 1 sherd of whiteware in the Ap; it is again assumed that the sherd was brought in with the fill material.

Field 2, Woods

This refers to the wooded area located adjacent, and to the east of Field 2 proper, and extending north to the retention

FIGURE 16

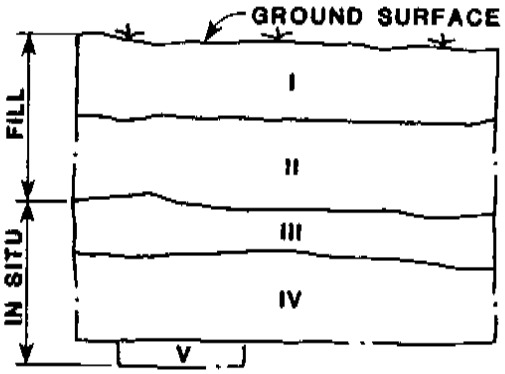
SHOVEL TESTS 8 AND 9 WEST WALL PROFILES, FIELD NO. 2



SHOVEL TEST 8

KEY:

Zone I	Dark brown silty loam Ap horizon (10YR4/3)
Zone II	Yellowish brown clay fill episode (10YR5/8)
Zone III	Dark brown silt loam Ap horizon which has been truncated (10YR4/3)
Zone IV	Brownish yellow silty loam B1 horizon (10YR6/6)
Zone V	Yellowish brown silty clay loam B2 horizon (10YR5/8)



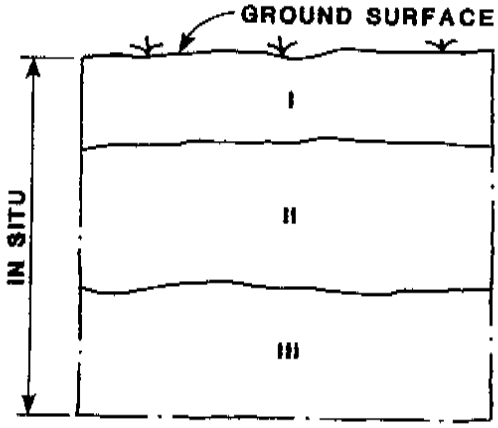
SHOVEL TEST 9

KEY:

Zone I	Dark brown silt loam Ap horizon (10YR3/3)
Zone II	Yellowish brown clay fill episode (10YR5/8)
Zone III	Yellowish brown A or Ap horizon that may be truncated (10YR5/4)
Zone IV	Brownish yellow silt loam B1 horizon (10YR6/6)
Zone V	Yellowish brown silty clay loam B2 horizon (10YR5/8)

FIGURE 17

SHOVEL TESTS 10, 11 AND 12 WEST WALL PROFILES, FIELD NO. 2



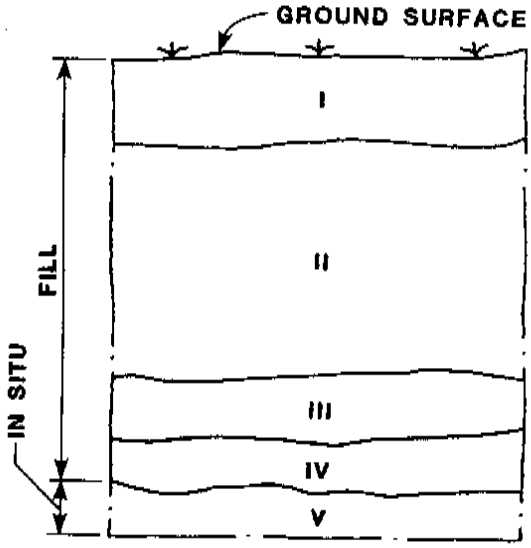
SHOVEL TEST 10

KEY:

Zone I — Dark brown silt loam Ap horizon (10YR3/3)

Zone II — Yellowish brown silty loam B1 horizon (10YR5/6) with a natural, gradual boundary with Zone III

Zone III — Mottled silty clay loam with a predominant color of yellowish brown (10YR5/8), B2 horizon



SHOVEL TEST 11

KEY:

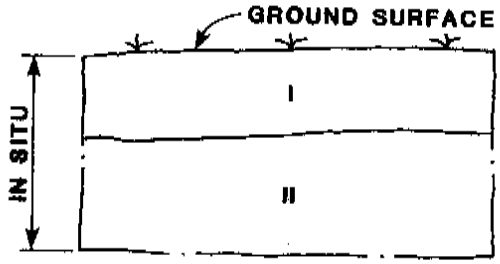
Zone I — Dark brown silt loam Ap horizon (10YR3/3)

Zone II — Yellowish brown silty clay loam fill horizon (10YR5/8)

Zone III — Strong brown fill zone (7.5YR5/8)

Zone IV — Dark yellowish brown fill zone (10YR4/6)

Zone V — Heavily mottled and gleyed B2 horizon with a predominant color of yellowish brown (10YR5/8)



SHOVEL TEST 12

KEY:

Zone I — Dark brown silt loam Ap horizon (10YR4/3)

Zone II — Mottled and gleyed clay loam B2 horizon with grey mottles (10YR5/1) and a yellowish brown matrix (10YR5/8)

basin located just south of the railroad tracks. It is bordered by Route 141 to the west. The area of the woods is relatively flat, though a gentle downward slope to the north is evident. The region is cross cut by a small intermittent stream, which originates from the small springhead noted in Field 2 between Shovel Tests 11 and 12. This stream contained no water at the time of the field investigations. Another small stream cuts into the woods at the northwest corner of the area, just to the southwest of the retention basin.

The main right-of-way for the proposed relocation of Route 141 cuts almost through the center of the woods north of Airport Road, running between the old abandoned section of Route 141 and the present day Route 141. Figure 11 shows the location of the right-of-way in relation to the features noted above as well as the shovel test locations.

Fieldwork

Preliminary investigation consisted of a walkover of the entire area, examining natural soil exposures. One notable feature was the relatively large number of tree falls, which exposed a considerable amount of the subsurface horizons, facilitating the survey of the region. Indeed, the area exposed by the tree falls provided just as effective a method of subsurface examination, if not more so, than that afforded by shovel testing. In addition to the tree falls, extensive examination of the stream banks was conducted, as these also provide a readily available glimpse at subsurface horizons.

After the surface reconnaissance was completed, nine shovel tests were excavated, three south of the intermittent stream that

runs perpendicular to the right-of-way, and six on the north side of the stream. Figure 11 shows the location of these shovel tests.

Results

Investigations in Field 2, Woods, produced little in the way of artifactual material or evidence of past cultural activities. Summarized first are the soil profiles, and then the few artifacts that were recovered. All artifacts were recovered from three shovel tests, 19, 20, and 21, all of which were located on the south side of the intermittent stream.

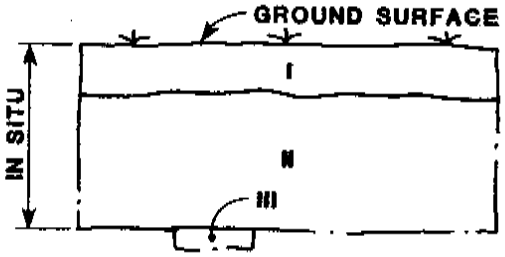
Soil Profiles

The profiles observed in the shovel tests from Field 2, Woods were straightforward, showing no signs of disturbance as seen in those for Field 2. Two basic profiles were evident, and are described below, from Shovel Test 16, located on the north side of the small stream, and Shovel Test 19, located on the south side of the small stream.

Though fundamentally similar, the two profiles shown in Figure 18 differ in that the A2 observable in Shovel Test 10 (as well as 20 and 21) is more clearly expressed than it is in Shovel Test 16, and in the shovel tests located on the north side of the small stream in general. The A2 horizon on the south of the stream is massive and rests on top of an apparently clear B1 horizon. This horizon, Zone III on the south side of the stream, is dissimilar from the Zone III on the north side in that it is less mottled and more consistently a yellowish brown (10YR 5/6), as well as being classified as a B1 rather than a B2. The

FIGURE 18

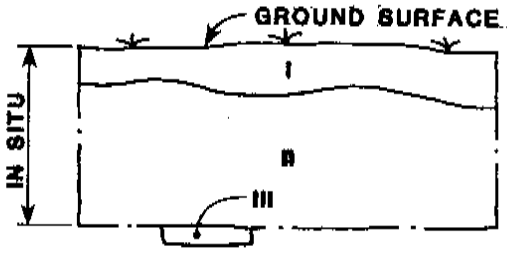
SHOVEL TESTS 16 AND 19 WEST WALL PROFILES, FIELD NO. 2 (Woods)



SHOVEL TEST 16

KEY:

Zone I	Dark brown silty loam A1 horizon (10YR3/3). It does not appear to be an Ap horizon as it has a gradual though distinct boundary with Zone II.
Zone II	Pale brown silty loam A2/B1 horizon (10YR6/3).
Zone III	Mottled silty clay loam B2 horizon with a predominant color of yellowish brown (10YR5/4).



SHOVEL TEST 19

KEY:

Zone I	Dark brown silt loam A horizon (10YR3/3), not an Ap horizon
Zone II	Light yellowish brown silt loam A2 horizon (10YR6/4)
Zone III	Yellowish brown silty clay loam B1 horizon (10YR5/6)

distinction between classifying it as a B1 instead of a B2 rests on the fact that Zone III on the north side of the stream had a greater clay content and somewhat more structure than that represented by Shovel Test 19.

Cultural Material: The cultural material from Field 2, Woods was limited to two quartz flakes, six glass fragments, one ferrous jar lid and one unglazed glass bead. One quartz flake was recovered from Zone 1 of Shovel Test 20, while the other was from the A2 horizon in Shovel Test 21. Four of the glass fragments, evidently parts of a lamp chimney, one olive glass bottle fragment, and the jar lid all came from Shovel Test 19, from Zone I. The other glass fragment, a clear flat plate glass window fragment, came from Shovel Test 21, Zone II. The glass bead was recovered from Shovel Test 20, Zone I.

Summary and Recommendations: As stated previously, the Field 2 area was divided into Field 2 and Field 2, Woods, for the purposes of this investigation. The reconnaissance investigation in Field 2 revealed an extensive amount of subsoil disturbance; all associated artifacts in the disturbed zones are considered to be indigenous to the fill and not representative of any past prehistoric or historic occupation of the area. No further work is recommended for Field 2.

In Field 2, Woods, investigations revealed the presence of very transient prehistoric use of the area, as evidenced by the two quartz flakes recovered from the shovel tests on the south side of the small stream. These two flakes likely represent no more than tool curation by a small, transient hunting group. The historic material is undiagnostic, and simply represents sporadic

trash disposal. No further work is recommended for the Field 2, Woods, area.

Field 3

This refers to the high knoll overlooking the eastward facing bend of Little Mill Creek and the apron shaped band of floodplain that borders the base of the knoll to the west and south, located in the southwestern corner of land formed by the intersection of Lancaster Pike and Route 141 (Figure 9). The higher bluff area was designated Field 3, Upper, while the lower part was designated as Field 3, Lower. This distinction was made to facilitate collecting procedures in the field, although shovel tests were numbered in sequence from the lower field to the upper field.

A brief description of the local topography of both the lower and upper fields is in order, as a prerequisite to an understanding of the varied soil profiles encountered in the shovel tests. To deal with the upper field first, going from Route 141 to the west, parallel with Lancaster Pike, the ground surface gradually rises to a point overlooking the lower field and floodplain of Little Mill Creek. Just beyond this slight rise in ground surface, the field drops again and then dips sharply into the lower field. This slight elevation in ground surface continues south across the upper field until it reaches the southwestern edge, where it forms an elevated knoll overlooking the lower field. In the lower field, between the west side of the upper field and Little Mill Creek, small topographic differences are present. Going south from Lancaster

Pike, parallel to Little Mill Creek, the ground descends in elevation from Shovel Test 1, forming a small depression in the middle of which Shovel Test 2 is located. From the depression in ground surface, the field rises in elevation until it forms a small rounded knoll just about where Little Mill Creek meanders east towards Route 141. Shovel Test 3 was located on this knoll. The various topographic differences noted above do not appear on the 7.5' quad maps, but are important as they were controlling factors in deposition as will be discussed below with the profiles.

The major portion of Field 3 is outside the right-of-way. The right-of-way cuts into the field for approximately 264' west from Route 141 and only 48-50' south from Lancaster Pike, according to the aerial photographs with the superimposed right-of-way. This leaves a large portion of the upper field beyond the limits of the right-of-way and most of the lower field as well.

Fieldwork

At the beginning of fieldwork at Field 3, the area was in tall corn. Despite the corn, visibility was excellent, on the order of 100%. Preliminary investigations consisted of a complete surface reconnaissance of both the upper and the lower fields, with individuals spaced between four to five feet apart. The surface reconnaissance was conducted both within the right-of-way and beyond, covering the entire cultivated portion of the area. Work was conducted beyond the right-of-way with permission of the owner, Peter D. Hayward, in an attempt to sample areas that were similar to other areas of the project that did not have

good visibility. In essence, Field 3, with its excellent visibility, formed a control over those portions of the project area that were in pasture, e.g. Field 4, located on the north side of Lancaster Pike from Field 3.

Subsequent to the surface investigations, 15 shovel tests were excavated to check for the presence of any buried prehistoric components. Shovel Tests 1, 2, and 3 were in the lower field west of the upper field bluff edge and east of Little Mill Creek; 4-11 were in the upper field, while 12-15 were on the lower field south of the upper field on a line perpendicular to Route 141. Figure 9 shows the location of all these excavation units.

Results

The surface collection revealed the presence of two small prehistoric sites and a very light scatter of early 19th century historic artifacts. One of the prehistoric sites was on the bluff edge of the upper field, while the other was located on the small knoll in the lower field (Figure 8). The historic scatter was located over a somewhat broad area on the north side of the upper field, close to the edge of Lancaster Pike. These sites will be discussed below after a discussion of the soil profiles. The excavation of the shovel tests revealed a set of differing profiles across the lower field and the upper field, which are described in the following section.

Soil Profiles

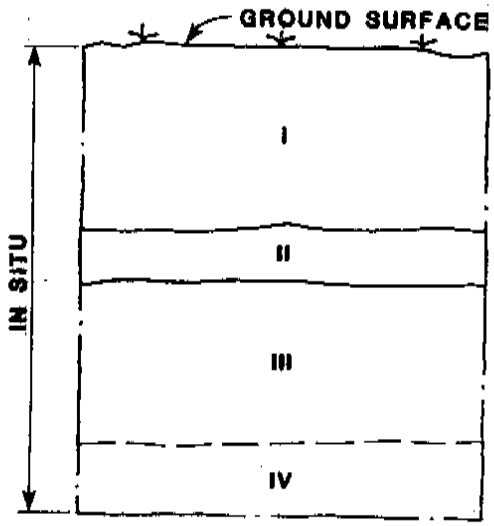
As stated above, three shovel tests (Shovel Tests 1-3) were placed in the lower field (Figure 9). All of these shovel tests

exhibited differences in soil horizonation. The profiles are shown on Figures 19 and 20. Figure 20 also presents the soil profiles representative of the shovel tests placed in the upper field as shown by Shovel Tests 4, 5 and 7. All of the other shovel tests placed in the upper field (Shovel Tests 6, 8, 9, 10 and 11) had profiles similar to the Shovel Test 7 profile (Figure 20). Shovel Test 4 is similar as well, although Zone II was considerably more shallow.

Perhaps the most parsimonious way of accounting for the various profiles is to attribute Zone II as being of eolian origin. The local topography serves to explain this. Dealing with the upper field first, the profile from Shovel Test 4, located on top of the ridge overlooking the lower field, had a natural profile, while Shovel Test 5, just beyond the ridge contained a distinct zone, Zone II, interspersed between the Ap and the B horizon (Figure 20). This same Zone II was present on the east side of the ridge, and quite thick, as evidenced by the profile obtained from Shovel Test 7. Evidently the ridge was acting as a trap, containing windblown sediment to the east side of it, little to none being deposited on top of it, where it would have been eroded away. On the west side of the ridge, the same material is present, but not nearly as thick, as evidenced by Shovel Test 4. On the lower field, the Zone II described for Shovel Tests 1 and 2 is the same material. Shovel Test 2 was located in a small depression which collected quite a bit of the sediment, as evidenced by its depth (Figure 19). It was not as deep in Shovel Test 1, appearing only as a thin band. Shovel Test 3, located on a small knoll, did not exhibit this windblown

FIGURE 19

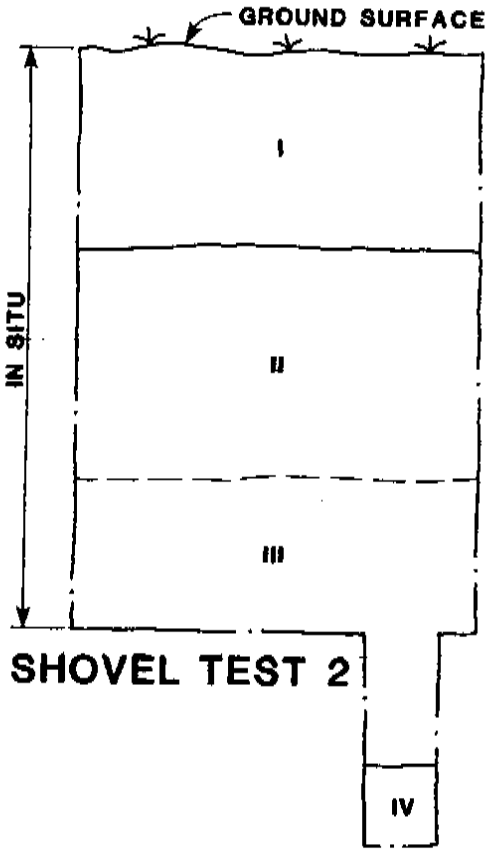
SHOVEL TESTS 1 AND 2 NORTH WALL PROFILES, FIELD NO. 3



SHOVEL TEST 1

KEY:

Zone I	Dark brown silty loam Ap horizon (10YR4/3)
Zone II	Dark yellowish brown silty clay loam (10YR4/4)
Zone III	Dark yellowish brown silty clay loam B1 horizon with a gradual boundary with the B2 horizon
Zone IV	Strong brown silty clay loam B2 horizon (7.5YR4/6)



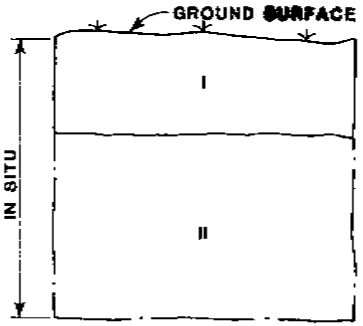
SHOVEL TEST 2

KEY:

Zone I	Dark brown silty loam Ap horizon (10YR3/3)
Zone II	Yellowish brown silty loam C horizon of eolian origin (10YR5/4)
Zone III	Yellowish brown silty clay loam B1 horizon (10YR5/8)
Zone IV	Strong brown silty clay loam B2 horizon (7.5YR4/6)

FIGURE 20

SHOVEL TESTS 3, 4, 5 AND 7 NORTH WALL PROFILES, FIELD NO. 3

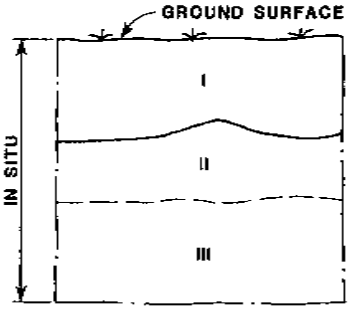


SHOVEL TEST 3

KEY:

Zone I — Dark brown silty loam Ap horizon (10YR4/3)

Zone II — Yellowish brown clay loam B horizon (10YR5/8), well developed



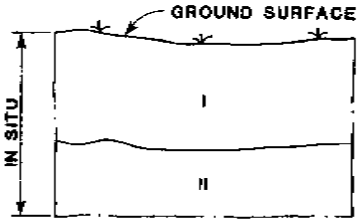
SHOVEL TEST 5

KEY:

Zone I — Dark brown silty loam Ap horizon (10YR3/3)

Zone II — Yellowish brown C horizon of eolian origin (10YR5/8)

Zone III — Strong brown clay loam B horizon (7.5YR4/6) saprolite

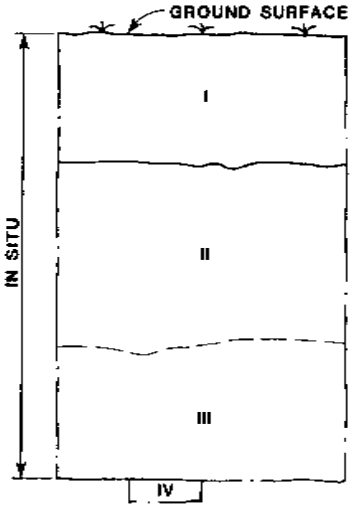


SHOVEL TEST 4

KEY:

Zone I — Dark brown silty loam Ap horizon (10YR4/3)

Zone II — Strong brown clay loam B horizon (7.5YR4/6), well developed, contains saprolite



SHOVEL TEST 7

KEY:

Zone I — Dark brown silt loam Ap horizon (10YR3/3)

Zone II — Yellowish brown silty loam C horizon of eolian origin (10YR5/8)

Zone III — Dark yellowish brown silty clay loam B1 horizon (10YR4/6), saprolite

Zone IV — Strong brown clay loam B2 horizon (7.5YR5/8)

material at all; it may have been eroded away as it was deposited, due to its more exposed setting (Figure 19). Shovel Tests 1 and 2, from the lower field, and Shovel Tests 7 and 5 all show an intact paleosol beneath the windblown Zone II (Figures 19 and 20). The windblown Zone II is consistent with all shovel tests, being essentially the same color (yellowish brown 5/8 10YR) and a fine textured silty loam with some clay. No stones whatsoever were encountered in this Zone II. In all cases where excavation continued below Zone II into the paleosol B horizon, bedrock fragments appeared in the context of the B, and not above it.

There has been some weathering of this "eolian" derived Zone II, as exemplified by the gradual and not abrupt boundary between it and the lower B horizon. It is suggested that this eolian material is pre-Holocene, dating to the Late Pleistocene, or very early Holocene though this cannot be demonstrated unless further pedological work is carried out.

The eolian Zone II contained no artifacts. Artifacts were encountered only in the Ap of a few of the shovel tests, and were limited to scattered early 19th century or undiagnostic historic ceramics and glass (see Appendix V, Artifact Inventory).

Components Present: The surface reconnaissance revealed the presence of two prehistoric sites, three isolated finds, and a generalized scatter of historic material, most of which appears to date to the early 19th century. Following is a description of the sites:

Site 1 - This was a small prehistoric component located in

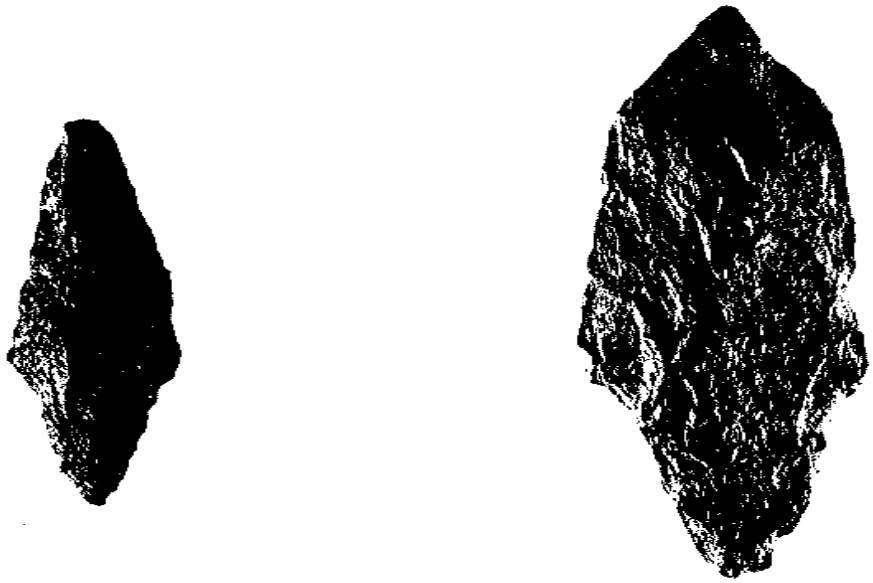
the southwestern corner of the upper field, out of the right-of-way (Figure 8). It was situated on the edge of the long north-south ridge overlooking the lower field. The site was characterized by a thin scatter of flaking debris and a contracting stem point of ferruginous sandstone (Plate 1). The lithic debitage consisted of 3 quartz flakes (complete), 1 quartz flake, distal fragment, 1 greenish chert flake and 1 quartz shatter fragment. The flakes are small and suggest resharpening and/or curation activities. The point is classified as a Middle Archaic contracting stemmed variety akin to Morrow Mountain (Chapman 1976, 5000-4000 B.C.). All of the material noted above was found over an area roughly 100' by 75'.

Farther to the north of this small prehistoric concentration, three isolated artifacts were recovered from the surface: 1 quartz biface (medial fragment); 1 quartz point (distal fragment); and 1 quartz shatter fragment; all of which were spread across a large part of the upper field, and not associated with the concentration described above.

In addition to the material from the surface, 1 quartz flake was recovered from the Ap horizon of Shovel Test 7.

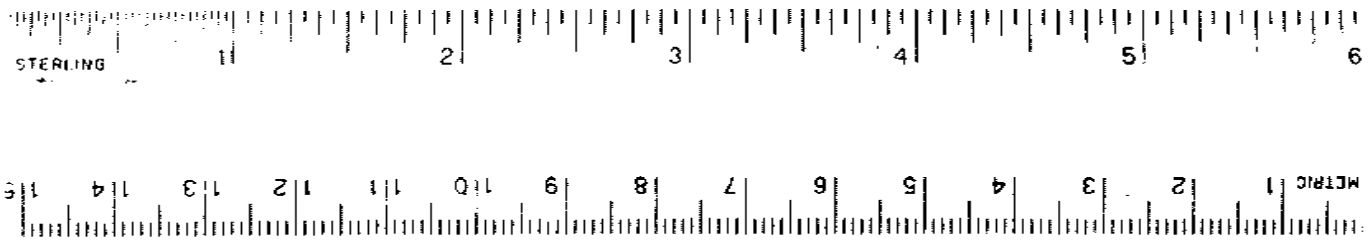
Site 2 - This was a small prehistoric site located on the small knoll situated in the southwestern corner of the lower field again, outside of the right-of-way by a considerable margin (Figure 8). This site, as with Site 2, was characterized by a thin scatter of flaking debris confined to an area measuring approximately 100' by 50'. The material recovered was limited to: 1 rhyolite contracting stemmed point (Plate 1); 5 quartz flakes; 1 large quartz flake; 1 quartz flake (distal fragment); 1

PLATE 1



A

B



quartz shatter fragment; and 1 chert flake (distal fragment). The rhyolite point is classified, because of the size, as a Late Archaic contracting stem variant, although a Middle Archaic designation is equally likely. The distal end of the point had been extensively resharpened.

In addition to the material described above recovered from the surface, 1 quartz flake and 1 quartz chunk, a possible core, were recovered from the Ap of Shovel Test 2, located a short distance north of Site 2.

Historic Scatter: Presented in Appendix V, Table V-I, is a simple tabulation of the basic categories of historic ceramics and glass recovered from the surface and shovel tests in Field 3. The material is not dense and does not form any significant clustering; it probably is best interpreted as field scatter associated with the early to mid 19th century site located across Lancaster Pike in Field 4.

The overall total of ceramics from the shovel tests was not great, numbering only 37 sherds. Table V-2, Appendix V presents artifact tabulation by ware type. Of this total, 28 are refined white earthenware, and breakdown as follows: 13 whiteware sherds, of which only 1 was decorated, 1 hand painted, 3 minimally decorated, and 1 with transfer print decoration. Creamware was represented by only 1 undecorated sherd. No porcelain, refined redware, refined stoneware or coarse stoneware ceramics were recovered from the shovel tests. Adding the sherds from the surface collection, the final totals are: whiteware - 20, pearlware - 19, creamware - 1, for the refined white

earthenware category. The percentages are: whiteware - 50%, pearlware - 47%, creamware - 2.5%. These percentages will serve as a basis for comparison with the historic site in Field 4, across Lancaster Pike. Notable for their absence and/or low numbers are porcelain, refined redware and refined stoneware.

Concerning the other categories of historic artifacts, little was recovered that was diagnostic, except for 1 piece of green bottle glass that was a lip and neck portion with an applied and tooled finish, and cork closure. This would date anywhere from 1850 to 1903. It was recovered from the upper portion of Field 3. The various nail, brick, coal and glass fragments that are non-diagnostic are simply tabulated in the inventory.

Summary and Recommendations: The reconnaissance conducted in Field 3 did not reveal any significant archeological remains within the bounds of the right-of-way. The investigations did reveal two small, prehistoric sites that date to the Middle or Late Archaic, as well as a generalized historic scatter of artifacts of an early 19th century date. The two prehistoric sites are best interpreted as small, transient limited procurement sites of the kind that Custer and Wallace described for the Piedmont Uplands of Delaware (1982). The solitary finds are also interpreted as being part of this Piedmont Upland limited activity procurement function.

The historic scatter is assumed to be related to the early 19th century site that was located in Field 4 across Lancaster Pike from Field 3. One pattern that has been observed for the beginning of the 19th century was the general dispersal of trash

throughout agricultural fields, which is probably related to the use of privy contents for fertilizer. The percentages of the three categories of refined white earthenware are somewhat different from those obtained from Field 4. Field 4 produced roughly 32% whiteware, 60% pearlware, and 7% creamware, compared to the 50% whiteware, 47% pearlware and 2% creamware recovered from Field 3. This discrepancy probably results from sampling bias and nothing more.

The historic scatter is present in the right-of-way, though it is not considered to be archeologically significant due to the extremely low density of material and its limited interpretive potential.

Since the two archeological sites described for Field 3 are not in the right-of-way, they will not be affected by any construction. In view of this, no further work is recommended for the Field 3 locale.

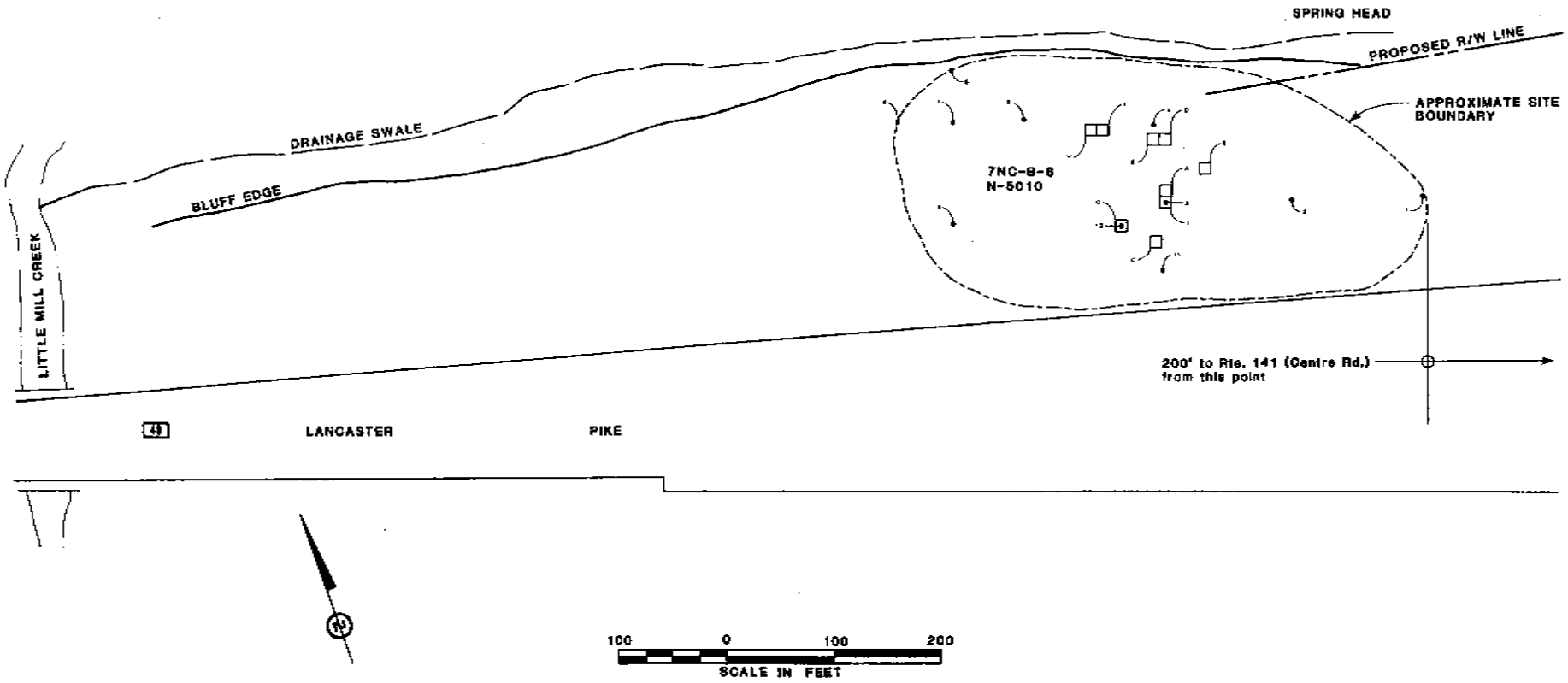
Field 4

The discussion of Field 4 will be presented in two parts, the reconnaissance work described here, and the intensive survey presented subsequent to the reconnaissance section.

Field 4 is located across Lancaster Pike from Field 3, in the northwestern corner of the field bounded by the intersection of Route 141 and Lancaster Pike (Figure 8). The area investigated is a relatively flat bench of land bounded to the north by a spring and associated drainage ravine, while to the west, the land drops off gently towards Little Mill Creek. Figure 21 shows the location of Field 4 in relation to the right-

FIGURE 21

MAP OF FIELD NO. 4



KEY:

• Shovel Test

□ Test Square

of-way.

Fieldwork

There were two goals behind the field investigations carried out at Field 4. First, archival research had revealed one map which indicated the presence of a structure in the approximate vicinity of Field 4, apparently associated with Lancaster Pike. The map was printed by Henry Eckel and published in 1860, apparently based on an earlier map possibly dating to 1843. The map covered the Wilmington and Brandywine Railroad for New Castle County, Delaware and Delaware and Chester Counties, Pennsylvania. The particular structure in question, unidentified on the map, does not appear on subsequent or earlier maps, and suggests the presence of a small tenant house. The name associated with the structure on the map is H. Grant, which is also the name associated with the two standing houses that are along Route 141, across from Field 2. Deed research conducted on this property is reported here following the fieldwork section. The reconnaissance level excavations were designed to ascertain whether or not this structure, as indicated on the map, could be located and more clearly identified.

The second goal of the reconnaissance was to test for the presence of prehistoric occupation of the area. It was anticipated that any prehistoric occupation of the area would be similar to that found in Field 3 across the street, and perhaps more abundant given the presence of a large spring head located in Field 4. However, this field was in pasture at the time of the investigation, with no exposed surface available for inspection. All examination had to be conducted through

subsurface tests. Some expectation of the presence of prehistoric occupation of Field 4 was obtained from Field 3, where complete surface exposure was available at the time of investigation. Since Field 4 is in essentially the same topographic setting, it is assumed to have sustained similar prehistoric use in the past.

Excavation began by placing a line of shovel tests across the field parallel to Lancaster Pike, just to the south of the spring head and associated drainage ravine that empties into Little Mill Creek. In all, eleven two-foot-by-two-foot shovel tests were excavated on the south side of the spring, just to the north of Lancaster Pike. No excavations were conducted on the north side of the spring, as it is marginal and actually outside of the proposed right-of-way. Figure 21 shows the shovel test locations.

The shovel tests revealed a dense clustering of early to mid 19th century artifacts, as well as scattered prehistoric material. The density of historic material, coupled with the structure located on the 1860 (possibly 1843) map, necessitated the implementation of an intensive survey to attempt to define the nature of the 19th century occupation and to test for site integrity and the presence of features or other structural remains. This immediate section presents the results of the reconnaissance, as obtained from the shovel tests, although the prehistoric discussion includes materials recovered from both the reconnaissance and intensive survey excavations.

Results

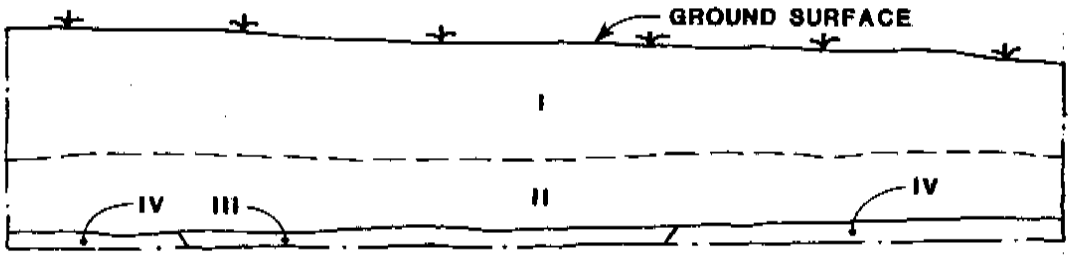
Presented first is the description of the profiles revealed at Field 4, followed by a description of the few prehistoric artifacts. A discussion of the historic ceramic distribution is presented next in order to define the limits of the 19th century occupation, which was fundamental to the construction of the intensive survey program.

Soil Profiles: Contrary to the situation that prevailed in Field 3, the profiles that were encountered in Field 4 were straightforward, and did not exhibit the same zone of eolian deposited sediment. Two different profiles were observed from the excavations conducted in Field 4, and are described from Shovel Test 5 and Test Square F (Figure 22).

The profile exhibited by Shovel Test 5 consists of an Ap horizon underlain by a C horizon. The profile as described for Shovel Test 5 is representative of all of the other shovel tests, as well as most of the test squares. The exception is the one described for Test Square F (Figure 22). This is the region over Feature 2, the remains of a foundation. It appears as if a small episode of fill, represented by Zone I, was deposited over the region of Feature 2; or simply may have been pushed there in clearing operations sometime in the past. All of the profiles indicated that the field has not been plowed for a lengthy period of time. One resident mentioned that it had been in pasture for at least 20 years. The thick, well developed root mat is indicative of this. However, there is still a good, clear boundary at the base of the Ap, with only a small transitional zone between the Ap and B horizon noticeable. In terms of archeological context, all material is confined to the Ap, or

FIGURE 22

TEST SQUARE F WEST WALL PROFILE AND SHOVEL TEST 5 NORTH WALL PROFILE, FIELD NO. 4



TEST SQUARE F

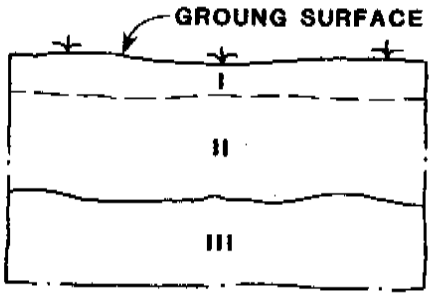
KEY:

Zone I — Dark brown silty loam remnant Ap horizon with a thick root mat (10YR3/3)

Zone II — Dark yellowish brown silty loam old Ap horizon (10YR4/4)

Zone III — Yellowish brown builder's trench (10YR5/4) which was intrusive into Zone IV

Zone IV — Dark yellowish brown silty clay loam B horizon (10YR4/6)



SHOVEL TEST 5

KEY:

Zone I — Root Mat

Zone II — Dark brown silty loam Ap horizon (10YR3/3)

Zone III — Dark yellowish brown silty clay loam (10YR4/6)

Zone I, with the exception of the subsurface features, which will be described in the section on the intensive survey. Any artifacts that were recovered from the B horizon were introduced by disturbances of one sort or another.

Prehistoric Occupation: The amount of prehistoric material was small, amounting to only 11 quartz flakes, 1 quartz primary decortication flake, proximal fragment; 1 chalcedony flake; 1 jasper thermally altered secondary decortication flake; 2 quartz shatter fagments, and 1 quartz chunk. Though small in number, most of the prehistoric artifacts appeared to be spatially confined. A breakdown of the prehistoric artifacts by excavation unit is presented in Table VI-1, Appendix VI.

Apart from Shovel Tests 2 and 8, all of the other excavation units containing prehistoric artifacts were in relatively close proximity, in an area measuring roughly 45' by 30'. Unfortunately, no chronologically diagnostic artifacts were found to be associated with this small prehistoric component. Given the number of prehistoric artifacts recovered from the excavations units, it is undoubtedly a slightly denser occupation than the two small components located in Field 3. Though all of the artifacts were from a plow zone context, and may represent more than one component or occupation, it is assumed, with caution though, that the cluster from Shovel Test 4, Test Squares A, B, E, and F may be the result of a single episode occupation because of their tight clustering.

Historic Occupation: It was evident almost immediately upon opening of Shovel Tests 4 and 5 that a substantial historic

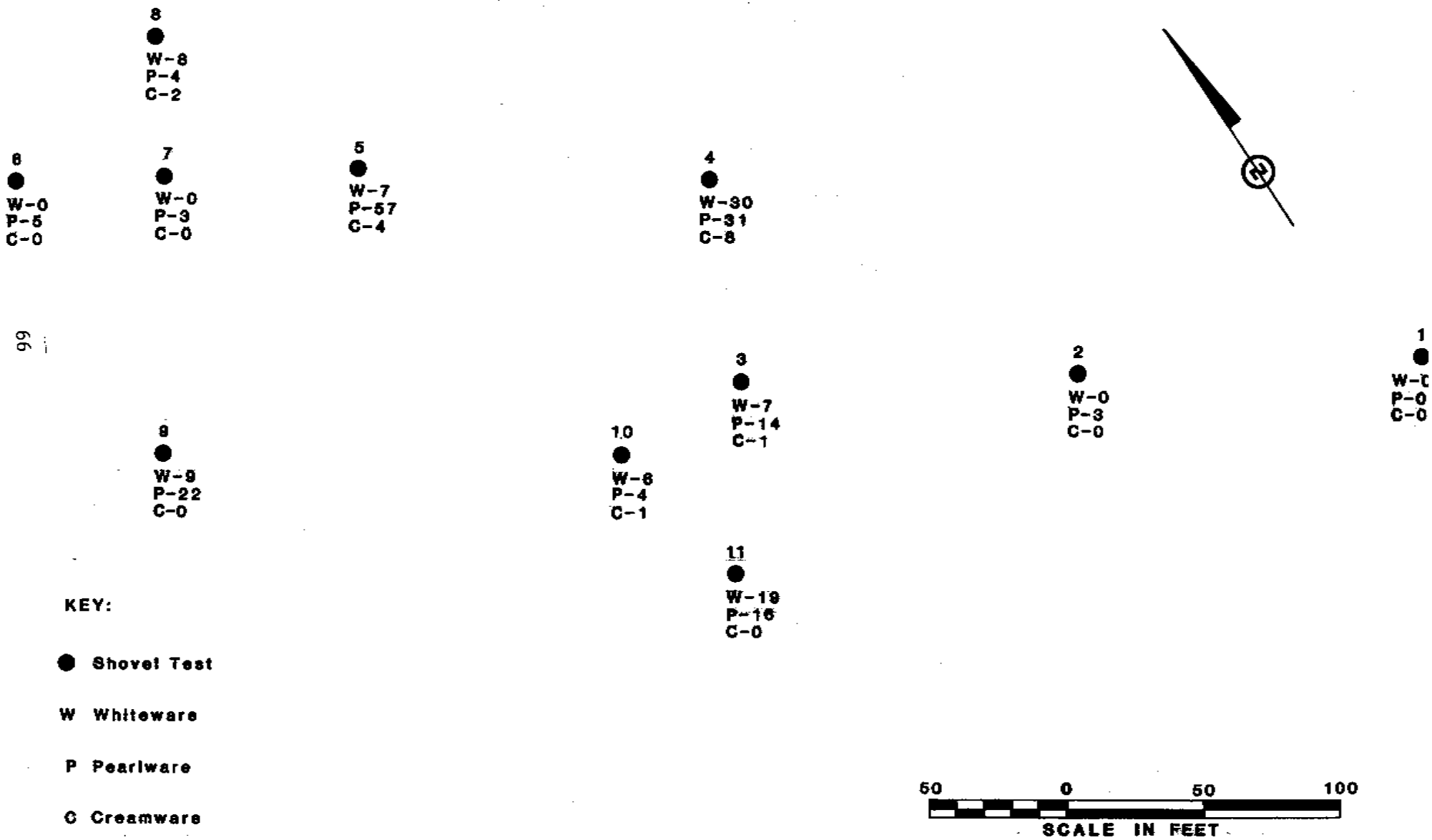
component was present in Field 4. The ceramic count from all the shovel tests serve to define the horizontal extent of the occupation, and provided a guide for the excavation of larger squares opened in the course of the intensive survey.

Dealing with the category of refined white earthenware first, 261 sherds were recovered from all of the shovel tests combined. This total was broken down into whiteware, pearlware, and creamware. The summary totals are interesting, as they show a high percentage of pearlware. From the combined total, whiteware numbers only 86, or 32.9%, while pearlware was represented by 159 sherds, or 60.9%. Creamware was low in count, numbering only 16 sherds, or 6.1%. The distribution of these sherds by shovel test is presented in Table VI-2, Appendix VI and Figure 23.

The ceramic counts alone, for the combined three wares, serve to easily delimit the extent of the historic occupation horizontally. From south to north, the concentration extends from Shovel Test 11 to Shovel Test 4, and from east to west, from Shovel Test 4 to Shovel Test 5. This encompasses a region roughly 80' by 62'. The concentration drops off sharply going east from Shovel Test 3 towards Shovel Test 2. Shovel Test 1 contained nothing more than one piece of flat plate window glass. The concentration of the historic artifacts drops off more gradually towards the west, as evidenced by the counts from Shovel Tests 5, 6, 7, 8, and 9; though the concentration in all of the latter except Shovel Test 5 are rather low in count. Adding the distribution of the coarse red earthenware to the other categories does not alter the site limits. The

FIGURE 23

DISTRIBUTION OF WHITEWARE, PEARLWARE AND CREAMWARE BY SHOVEL TEST, FIELD NO. 4



distribution by shovel tests for the counts of coarse red earthenware is presented in Table VI-3, Appendix VI and Figure 24.

Yellowware occurred only in test pits 3 (7 sherds), 4 (2 sherds), and 11 (2 sherds). Coarse stoneware was absent from the reconnaissance-level excavations altogether, as well as porcelain and refined redware and stoneware.

The presentation of the distribution of the four classes of ceramics serves to corroborate the location of the structure indicated on the map dating to 1843/1860. The ceramic assemblage, discussed in more detail under the intensive survey section, is indicative of an early 19th century occupation, which again corresponds with the map information. This chronological statement is largely based on the high percentage of pearlware, which comprises 60.1% of the total number of refined white earthenware, while whiteware made up only 32.9% of the assemblage. Creamware, constituting only 6.1%, does not suggest anything much earlier than 1800.

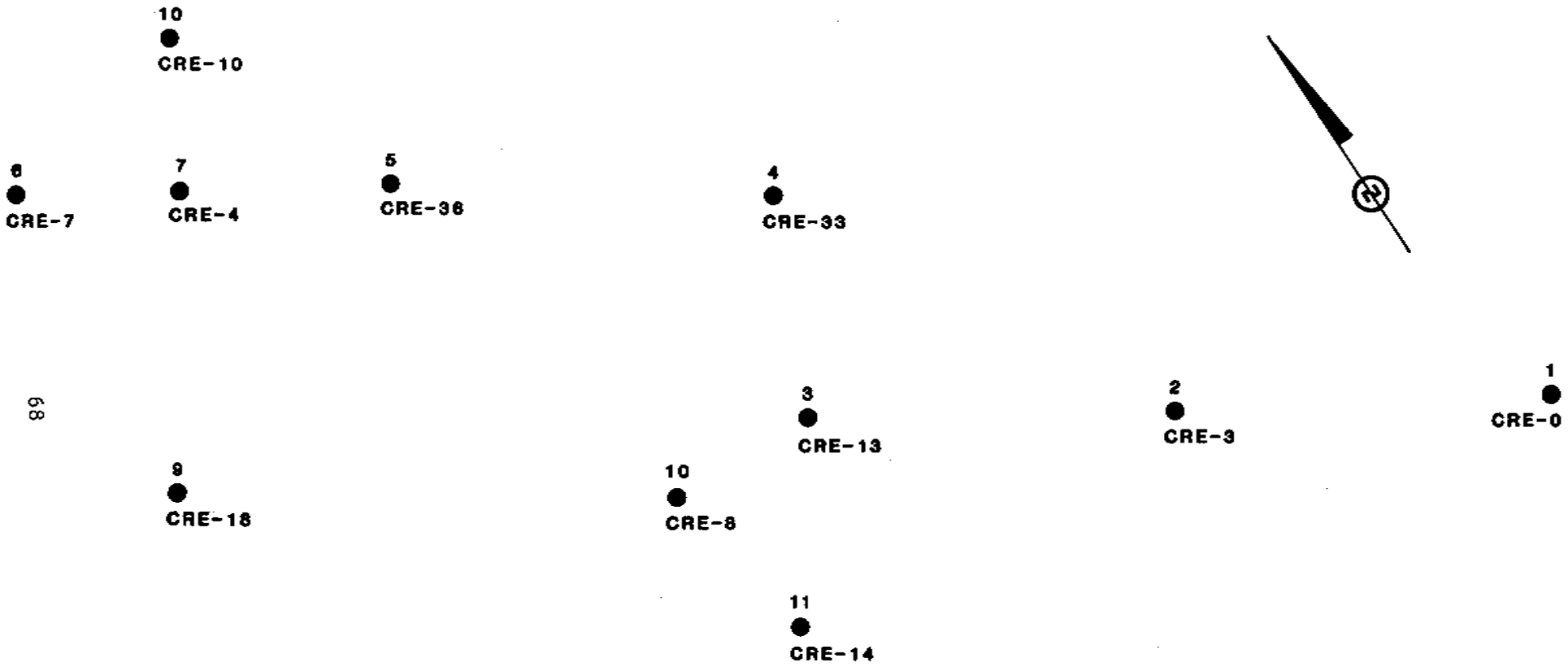
While the Phase I shovel tests resulted in a large number of artifacts for the relatively small area sampled, no features were encountered that would suggest the nature of the site. The transitory appearance of the structure on the maps - it only appears on one - as well as the nature of the ceramic assemblage, seemed to indicate the possible presence of a small tenant house.

Deed Research

Following the identification of structural remains in Field 4, deed research was carried out on this property. Field 4 is

FIGURE 24

DISTRIBUTION OF COARSE RED EARTHENWARE BY SHOVEL TEST, FIELD NO. 4



part of a plantation whose "manor house" was located in the vicinity of the structure presently occupied by Mrs. Downs. A number of different names are attached to this structure on the historical maps, going back to the Rea and Price Map of 1849, on which it is labeled "W. Tatnall". The deed research was terminated with the sale of the property by Henry Grant to John Peoples in 1866 (Deed book 8H, page 142, New Castle County records). This is undoubtedly the "H. Grant" whose name appears on the property, as shown on the Wilmington and Brandywine Railroad map, referenced above. This is the only map that shows a structure in the vicinity of the archeological site in Field 4, and Grant's name is shown next to it, as well as the "Manor House" location. The Grant-to-Peoples deed (H8-142) mentions an earlier transfer from Tatnall to Grant, and this exchange and earlier ones should be the subject of further research on the property. The Grant-Peoples plantation, as well as another immediately to the northwest passed to John H. Peoples in 1911. John Peoples had died in 1892, and the plantations had been held in trust for 10 years under the terms of his will (not researched). John H. Peoples, presumably his son, purchased the land from the trustees (G-23-404). In 1914, he sold it to William Winder Laird (T-24-406). 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). These transactions are summarized in Table 1.

None of the deed records provide information on the improvements to the property that might be tied to the

archeological remains in Field 4, but additional research might yield more specific information, and should be included in further research into the site.

TABLE 1

OWNERSHIP HISTORY - FIELD 4

Date	Doc.	Book	Page	From	To
10/2/1866	Deed	H8	142	Henry Grant & Margaret his wife of Christiana 100	John Peoples
	2 Plantations, the first of which includes Field 4				
4/24/1911	Deed	G23	404	Security Trust and Safe Deposit Company, Trustee of Will of John Peoples	John H. Peoples
	2 Plantations as previous. John Peoples died 1892 and his will instructed Trustee to hold lands in trust for 10 yrs. for his sons, of whom John H. Peoples was one.				
1/5/1914	Deed	T24	406	John H. Peoples, single man, Christiana 100	Wm. Winder Laird Christiana 100
	Same 2 plantations				
8/19/16	Deed	H26	263	Wm. Winder Laird and Mary A. B. DuPont Laird, his wife of Christiana 100	Glenden Land Co.
	Same 2 plantations				
12/18/24	Deed	A34	138	Glenden Land Company	Wm. Winder Laird of Christiana Hd.
	Same 2 Plantations, adjacent lands, and lots in Wilmington				
6/27/28	Deed	R35	393	Mary A.B. DuPont Laird, Walter Laird, Philip Laird, executors of estate of William Winder Laird	Charles F. Richards of City of Wilmington
	Same Property as previous item.				
6/28/28	Deed	R35	404	Charles F. Richards, Single man, City of Wilmington	Mary A.B. DuPont Laird of Christiana Hd.

Same Property as previous item. (Plantation No. 1) (includes Field 4)

12/30/41	Deed	A43	570	Estate of Mary A. B. DuPont Laird	Aletta Laird Downs of Christiana Hd.

Intensive Survey Investigations

This section will present a discussion of the fieldwork carried out following the completion of the reconnaissance level shovel test program, discussion of the major artifact classes and features found, and present recommendations for additional work. The intensive survey excavations were primarily aimed at the elucidation of the 19th century component present at Field 4 (H. Grant Tenancy site); the prehistoric material that accrued from these further investigations is discussed in the previous section.

Fieldwork

The intensive suvey investigations involved the excavation of larger units to examine the subsoil for features. Three 5 by 5 foot squares and three 5 by 10 foot squares were excavated (Figure 21). The latter squares were originally 5 by 5 foot excavation units, but were expanded in order to open up larger areas surrounding features. None of the test squares were excavated into the B horizon subsoil. Stratigraphic control was provided by the profiles revealed in the shovel tests; no artifacts were expected to occur below the level of the Ap base, except in the case of features intrusive into the subsoil. All the 5 by 5 foot squares were given letter designations, Test Squares A through I. Placement of the test squares was dictated by the artifact concentrations resulting from the shovel tests.

The shovel tests revealed a decreasing number of ceramics going south from 4 towards 11. Test Squares A, B and C were opened to see if any features were associated with the heavy concentration in the vicinity of Shovel Test 4, with Test Square B located just to the south of Shovel Test 4, Test Square A located just north of Shovel Test 3, and Test Square C located to the north of Shovel Test 11. Test Square D was an expansion of Test Square B, while Test Square E was placed to the east of the dense concentration located in the region of Shovel Test 4. Test Square F was an expansion of Test Square A, Test Square G was an expansion of Shovel Test 10, while Test Squares H and I were excavated to test the concentration between Shovel Test 4 and 5.

Test Squares A-E were entirely sifted through 1/4" mesh screen only. A ten percent sample was taken from Test Squares F-I, as they were excavated in the last day and a half scheduled for Field 4.

The excavation of the test squares revealed the presence of three features, and two parallel rows of postmolds. Feature 1 was located in Test Square B, Feature 2 in Test Square F, and Feature 3 in Test Squares H and I. The two postmold rows were located in Test Squares H and I, bordering Feature 3. The features were not excavated, only exposed and mapped in plan. They are described below:

Feature 1: This was a rectangular post hole with an irregularly shaped postmold within it (Figure 25 and Plate 2). This feature was located in Test Square B, and was encountered at the top of the B horizon at a depth of .63-.65' below the surface.

FIGURE 25

PLAN MAP OF FEATURE 1, FIELD NO. 4

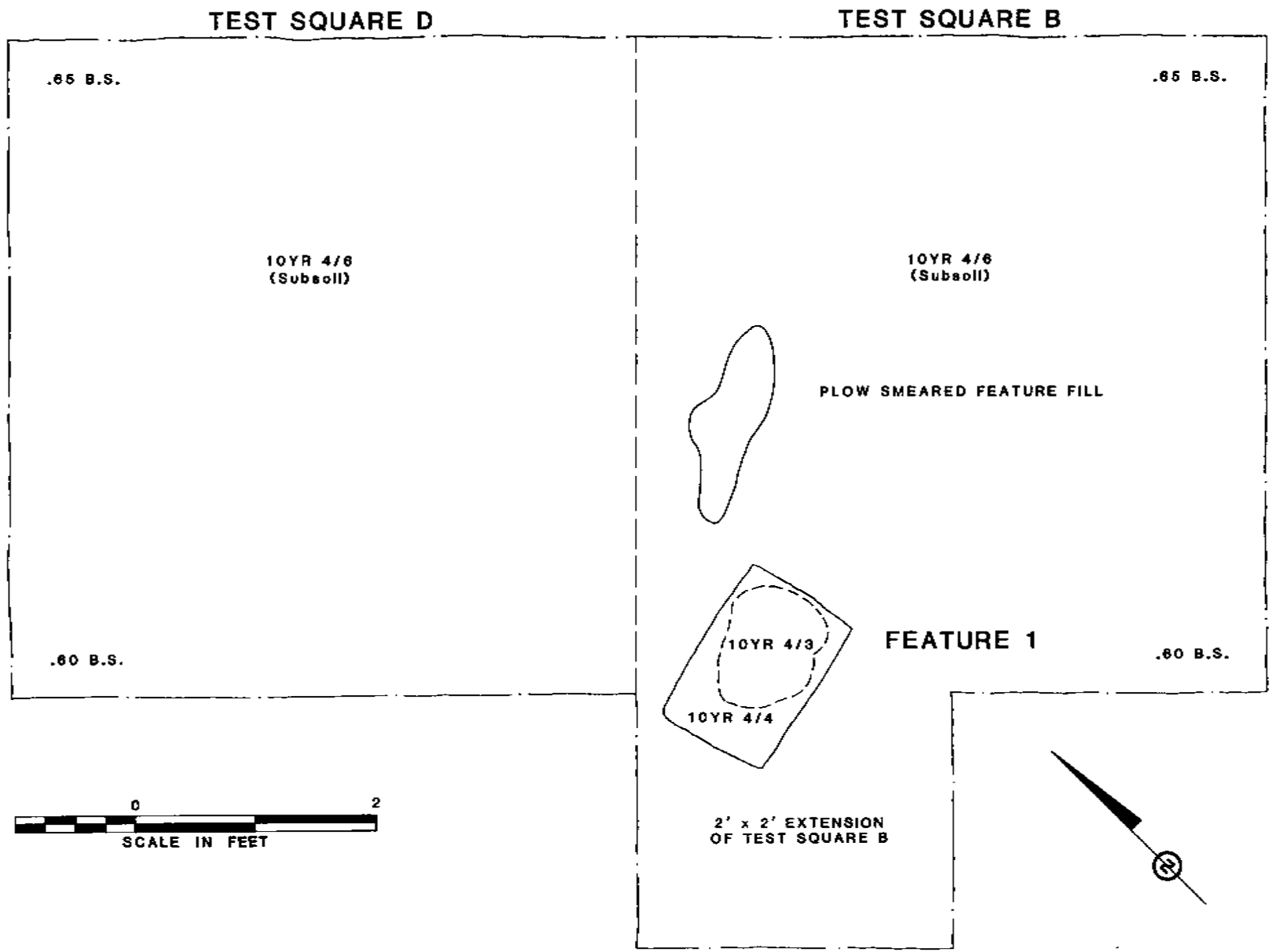
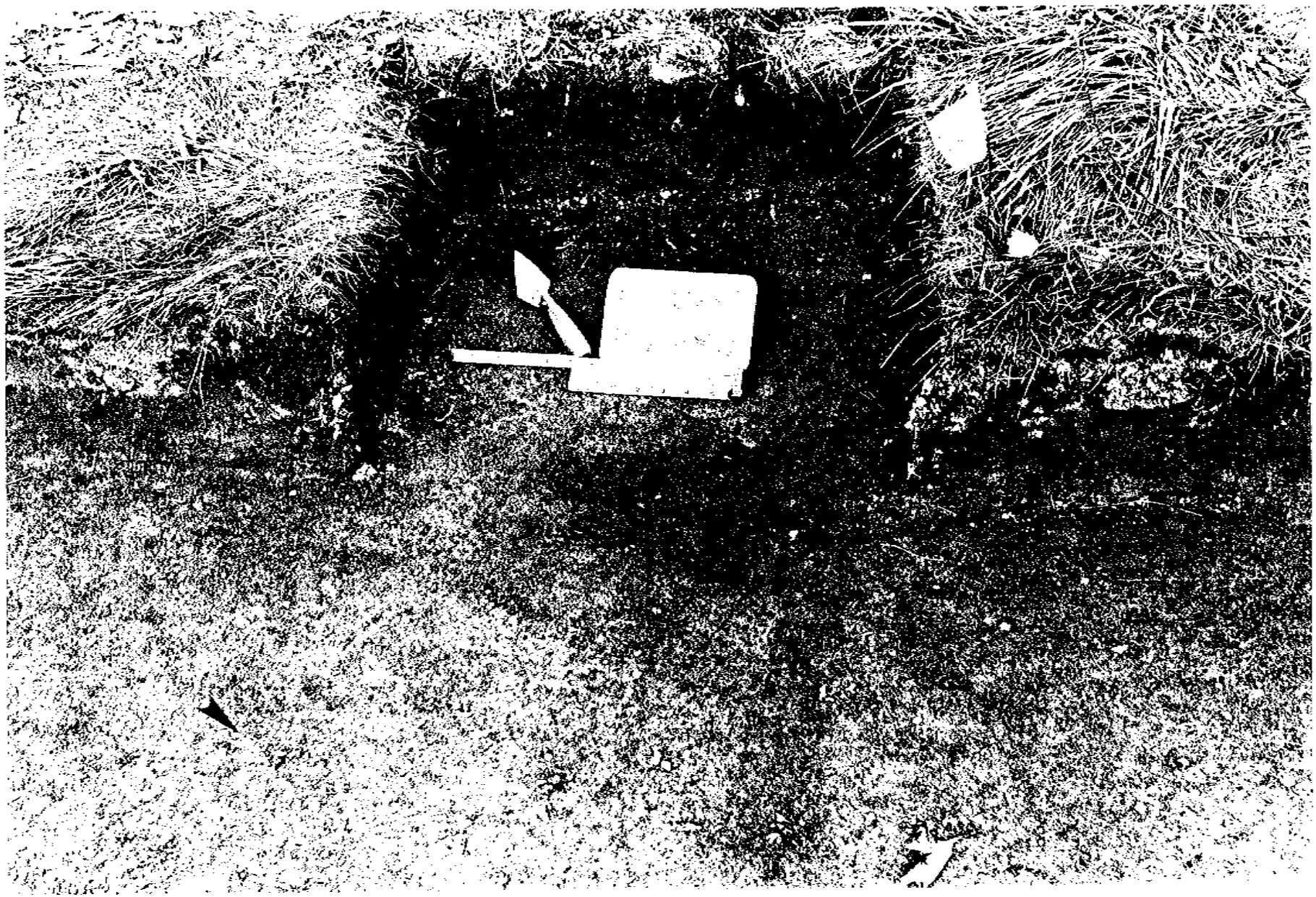


PLATE 2



The postmold stain was a dark brown, 10YR4/3, while the surrounding post hole stain was a dark yellowish brown, 10YR4/4. The surrounding subsoil matrix was a 10YR4/6 yellowish brown. The fill noticeable on the top of the postmold contained many small flecks of charcoal. Expansion of the excavation into Test Square D failed to reveal any associated postmolds. The feature measured 1.4' by .9'.

Feature 2: This feature was a rubble foundation remnant located in Test Square F (Figure 26 and Plate 3). The feature consisted of a large number of rocks encountered just above the B horizon, with a builder's trench matrix that apparently intruded into the B horizon. The soil color of the builder's trench was a yellowish brown, 10YR5/6, against a surrounding dark yellowish brown (10YR4/6) subsoil matrix. Although it is somewhat irregular in shape, this feature may be a corner of a foundation, as the builder's trench comes out of the west wall of the square and goes back into the south wall. This builder's trench shows up in the profile described above for Test Square F (see Figure 9). The depth of the feature is 1.0 to 1.1' below the surface. Associated with the feature were four coarse red earthenware sherds, one of which was a basal fragment; one brick fragment, and one decayed long bone fragment. These appear on the plan map as Mapped Artifacts 1 through 6 (Figure 26).

Feature 3: (Figure 27 and Plate 4): This was a rectangular shaped feature located on the border of Test Squares H and I. The feature was located at the top of the B horizon at a depth of .85' below surface. The feature measured 2.3' east-west and 1.7' north-south. It continued into the south wall of the two test

FIGURE 26

PLAN OF FEATURE 2, FIELD NO. 4

NOTE:
Plan Map Showing Feature 2 at
Depth of 1.0' to 1.1' Below Surface

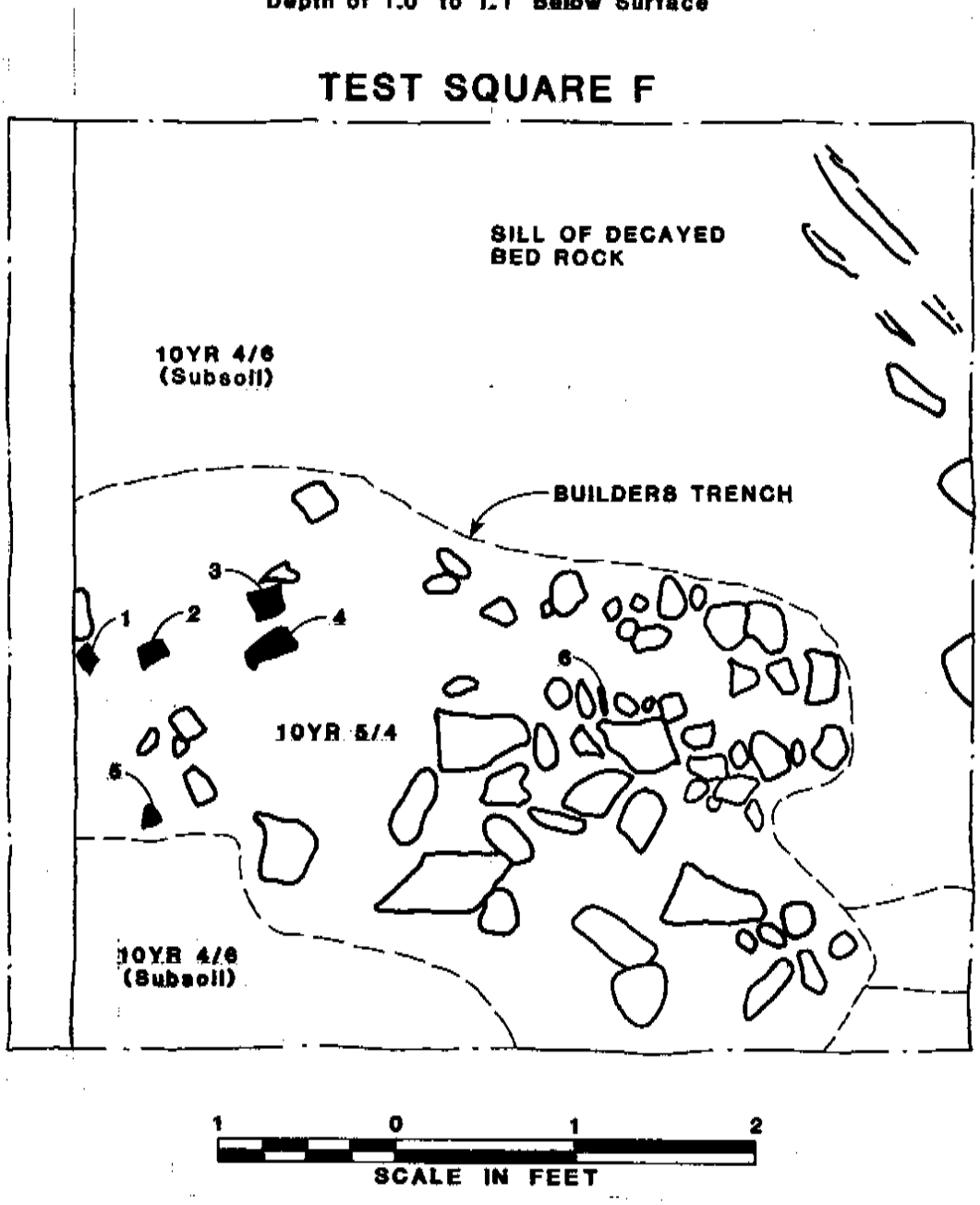


PLATE 3

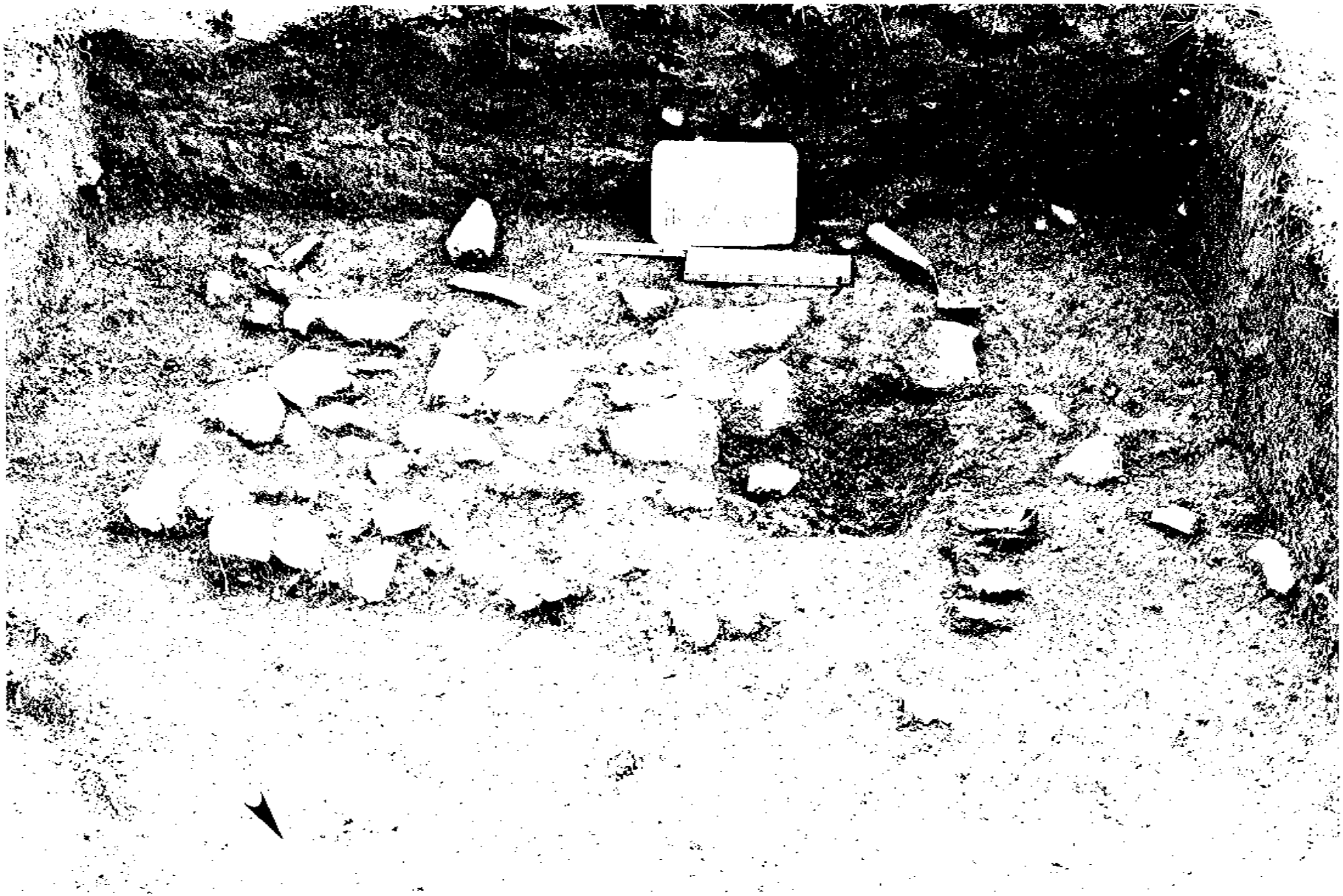


FIGURE 27

PLAN MAP OF FEATURE 3, FIELD NO. 4

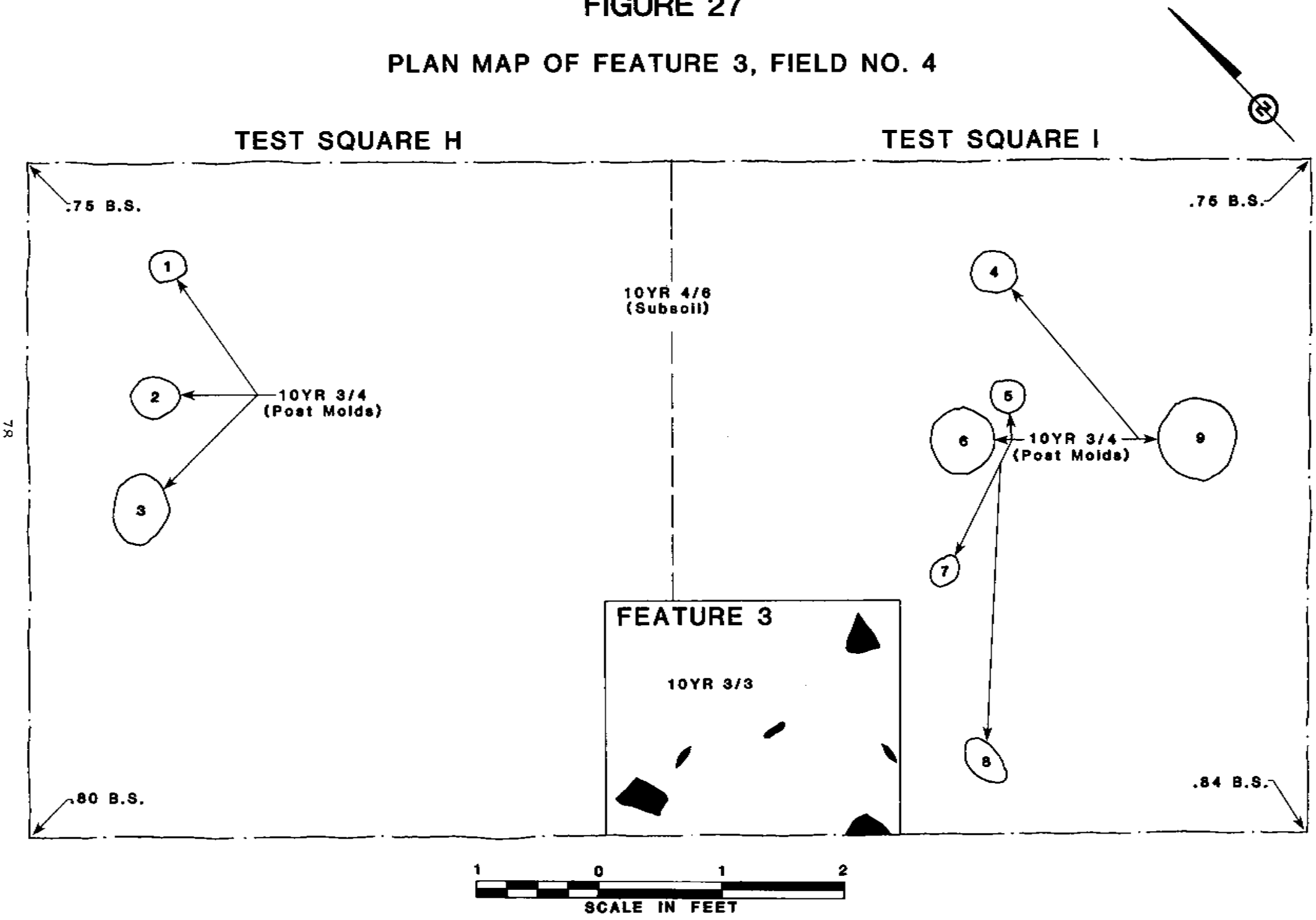


PLATE 4

squares for an unknown distance. The fill of the feature was a dark brown (10YR3/3) and the surrounding matrix of the B horizon was a dark yellowish brown (10YR4/6). Five angularly broken rocks and one whole cut nail were present on top of the fill of the feature, as well as several small fragments of redware, coal and charcoal. The nature of the feature is unknown, although it may be a privy or small storage pit.

Postmolds: Nine postmolds were encountered in Test Squares H and I. Postmolds 1-3, located in Test Square H, were all in a row (Figure 25). Postmolds 4-8 formed a somewhat erratic row parallel to numbers 1-3, while postmold 9 was isolated (Figure 27). These postmolds are located on either side of Feature 3, although it is not known whether or not they are directly associated with this feature.

Artifacts

Considered here are the major classes of artifacts recovered from the Phase II excavations. The discussion presented for the various classes of artifacts recovered will be inclusive of the material from the shovel tests as well. Most of the discussion will be taken up with the ceramics, followed by notes on pipe fragments, nails and miscellaneous metal fragments, brick and glass.

Ceramics

All of the material here is from plow zone contexts, not from any sealed feature or subsoil. All of the sherds are small and very fragmentary in size, which made it difficult to carry out any mending except on a very small scale. This also

prevented much in the way of any meaningful statement on vessel function, because, in most cases, it was difficult to tell what kind of vessel was represented by a sherd. Rims were small and could have been from plates or saucers; body fragments were just as undiagnostic. What is done here is to consider the three major varieties of refined white earthenware and to note the major decorative motifs that were present on each. Other ceramic categories are counted and discussed in terms of the cross-site distribution.

Refined White Earthenware: The intensive survey produced 856 sherds of whiteware, pearlware and creamware combined. Of this total, 278 of the sherds were whiteware, or 32.4%, 513 sherds were pearlware, or 60.0%, while only 65 sherds were creamware or 7.6%. These percentages are interesting as they correlate very closely to those obtained from the shovel tests. It will be recalled that the totals from the shovel tests were: whiteware - 86 sherds, or 33.0%; pearlware - 159, or 60.9%; creamware - 16 sherds, or 6.1%. The combined totals from both the shovel tests and the test squares are: whiteware - 364, or 32.6%; pearlware - 672, or 60.2%; creamware - 81, or 7.3%.

These basic totals/percentages have chronological implications. Noel Hume (1970:128-130) notes that pearlware began to supplant creamware in the latter part of the 18th century, having been mass produced after 1779. Pearlware began to be replaced by whiteware after 1820, and thus declines in popularity. Pearlware, Noel Hume notes, is most common on early 19th century sites (Noel Hume 1970). The percentages obtained from Field 4 for the three ware groups strongly suggest an early 19th century date,

perhaps within the first 20 to 30 years, although the occupation was undoubtedly present later when the map discussed above was drawn.

Table 2 below presents the percentage distribution by test square of these three ware groups. The percentage figures refer to the percentage that the counts represent for the ware group, and not the total of all three wares combined.

TABLE 2:

FIELD 4, PERCENTAGE DISTRIBUTION OF WHITEWARE, PEARLWARE AND CREAMWARE BY TEST SQUARE

Test Squares	Percentage of Total Ware Group Whiteware	Percentage of Total Ware Group Pearlware	Percentage of Total Ware Group Creamware
A	16.5%	21.2%	16.9%
B	28.8%	25.5%	27.7%- includes
C	9.7%	8.6%	10.8% 2' by 2'
D	25.8%	16.6%	38.5% extension
E	8.6%	11.3%	0
F	3.2%	6.8%	0
G	1.4%	3.7%	0
H	2.9%	5.7%	3.08%
I	2.9%	.58%	3.08%

It should be noted that the lower figures for Test Squares F, G, H and I do not necessarily reflect an actual distribution pattern, as these squares were only partially screened, as noted above. The highest percentages of pearlware are in Test Squares A and B, both of which are in close association with features, Test Square A being adjacent to the foundation, and Test Square B containing the square post hole and postmold features. The actual number distribution by test square of the ware groups is presented in Figure 28.

A complete breakdown of the decorations occurring on the

sherds is available in the field notes and total artifact inventory on repository at Island Field Museum. A percentage breakdown will not be given here for the various ware groups, as the sherds are small, and one vessel may be counted several times over. Instead, a general discussion of the various decorative motifs is presented, following a general count of the number of decorated sherds. The table below presents the three ware groups classified by Transfer Printed (TP), Hand Painted (HP) and Minimally Decorated (MD) categories:

TABLE 3

FIELD 4, BREAKDOWN OF DECORATIVE CATEGORIES BY WARE GROUP, INTENSIVE SURVEY EXCAVATIONS

	Number of Sherds Whiteware			Number of Sherds Pearlware		
Test Square	TP	HP	MD	TP	HP	MD
A	8	5	0	8	8	19
B	0	0	2	1	0	4
C	5	1	1	0	2	6
D	4	4	10	12	16	16
E	1	3	1	14	2	2
F	2	4	0	2	5	4
G	1	1	0	2	1	1
H	0	0	0	9	2	8
I	0	0	4	2	0	1
Totals	21	18	18=57	50	36	61=147
Percentages:	(36.8%)	(31.6%)	(31.6%)	(34.0%)	(24.5%)	(41.5%)

No decorated creamware sherds were recovered from the

intensive survey excavations. The breakdown of the decorated sherds in the reconnaissance shovel tests is as follows:

TABLE 4

FIELD 4, BREAKDOWN OF DECORATIVE CATEGORIES BY WARE GROUP, RECONNAISSANCE EXCAVATIONS

	Number of Sherds Whiteware			Number of Sherds Pearlware		
Shovel Test	TP	HP	MD	TP	HP	MD
1	0	0	0	0	0	0
2	0	0	0	0	1	0
3	3	0	0	0	4	2
4	2	0	10	1	6	5
5	4	0	0	3	4	10
6	0	0	0	0	2	1
7	0	0	0	1	0	0
8	0	2	1	0	1	2
9	0	1	1	1	1	0
10	1	0	0	0	0	0
11	1	1	1	0	1	3
Total	11	4	13	6	20	23
Percentages:	(39.3%)	(14.3%)	(46.4%)	(12.2%)	(40.8%)	(46.9%)

One minimally decorated sherd of creamware was recovered from Shovel Test 8.

Interesting are the differences between the percentages of decorated sherds recovered from the shovel tests as compared to those from the test squares. Although the percentage of transfer printed whiteware from the shovel tests compares favorably with that obtained from the test squares, and the minimally decorated

pearlware from both phases compares well, the other categories are somewhat different. This probably relates to the quantity recovered from the larger excavation units of the intensive survey squares.

The decorations found on the whiteware and pearlware were as follows: the whiteware decorations mainly included flow blue transfer print designs with landscape and floral motifs; magenta transfer print floral motifs; blue sponged decorations; hand painted shell edge motifs on rims; hand painted polychrome floral motifs; blue, brown and tan simple banded annular decorations; and blue hand painted polka dot daisy motifs. Decorations on pearlware were more varied, consisting of the following: blue transfer print, floral and geometric motifs; blue transfer print, moth border motif on rims; blue transfer print, landscape scenes; red sponged decorations; blue and green shell edged motifs on embossed, scalloped rims; hand painted green rim bands on scalloped rims; hand painted polychrome floral motifs in green, yellow and brown; hand painted green, brown and blue simple rim bands; and brown and tan annular mocha decorations. Samples of diagnostic ceramics are pictured in Plates 5 and 6.

Coarse Red Earthenware: This is the only other ceramic group that occurred in any great numbers apart from the above mentioned refined white earthenwares. From the reconnaissance shovel tests, 146 sherds and 91 ceramic fragments were recovered, while from the intensive survey test squares, 360 sherds and 176 fragments were recovered. Together, they total 506 sherds and 267 fragments. This total includes both clear, brown and black lead glazed and unglazed sherds, as well as the decorated sherds.

PLATE 5

TEST SQUARE A

Test Square C

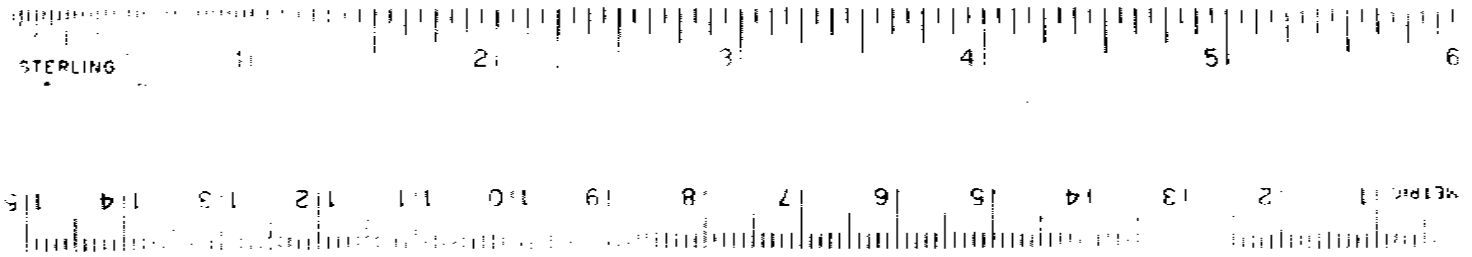
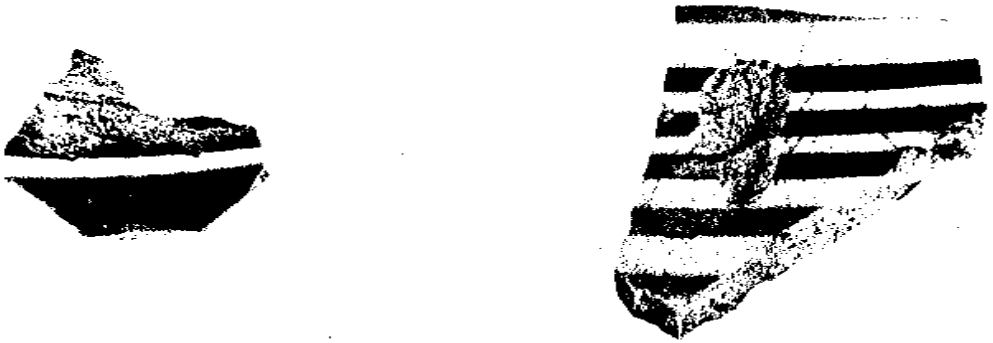
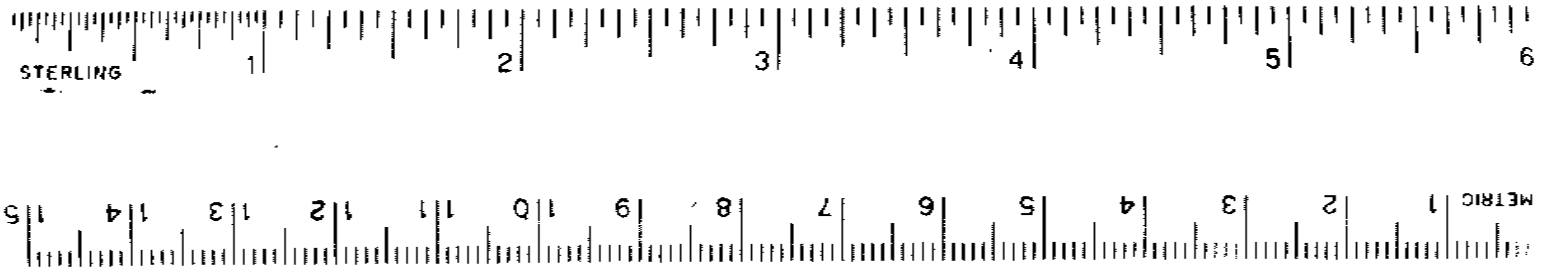


PLATE 6



TEST SQUARE I

TEST SQUARE H



The total artifact inventory on repository at Island Field Museum provides a detailed listing of the glazed and undecorated sherds. Figure 29 presents the distribution of the coarse red earthenware sherds by test squares.

TABLE 5

FIELD 4, COARSE RED EARTHENWARE BY EXCAVATION UNITS

Shovel Tests & Number of Sherds	Test Squares & Number of Sherds
1 - 0	A - 76 + 91 fragments
2 - 3	B - 14 + 4 fragments
3 - 13	C - 27
4 - 33 + 32 fragments	D - 172 + 48 fragments
5 - 36 + 33 fragments	E - 28 + 29 fragments
6 - 7	F - 19 + 4 fragments
7 - 4	G - 7 + 2 fragments
8 - 10 + 11 fragments	H - 12
9 - 18 + 6 fragments	I - 5
10 - 8 + 2 fragments	
11 - 14 & 7 fragments	
Totals 146 sherds, 91 fragments	360 sherds, 176 fragments

Although this ceramic group is widely spread across the site, it is by far most prevalent in Test Square D, where 172 sherds and 48 fragments were recovered. This is 47.8% of all the sherds recovered from the site.

Miscellaneous Ceramics: Other ceramic categories were poorly represented at the site. Yellowware numbered only 30 sherds, while porcelain was represented by 4 sherds. The porcelain came from Test Square C, Test Square F, Test Square H

and Shovel Test 5 (one sherd each). No refined redware was recovered and only one sherd of refined stoneware, from Test Square H, was recovered. Two sherds of coarse stoneware were recovered from Test Square A. The distribution of yellowware by test square is presented in Figure 30.

Tobacco Pipes: Pipes were not particularly numerous among the material recovered from the reconnaissance and intensive survey excavations in Field 4. Twenty-seven bowl fragments and 17 stems were recovered altogether. Seventeen of the bowls were undecorated, the other ten being decorated with embossed fluting. All but two of the stems were smoothed; the two decorated were embossed with an indeterminate motif. Table VI-4, Appendix VI present the distributional information for the pipe bowls and stem fragments by excavation units.

In light of the small sample of pipe stems, no attempt was made to estimate a date by measuring bore diameters.

Nails and Bricks: The only two categories of architectural artifacts that occurred in any great numbers were brick fragments and nails. Ninety-one nails and nail fragments were recovered altogether from the reconnaissance shovel tests and the intensive survey test squares. Figure 31 and Table VI-5, Appendix VI show the distribution of nails and nail fragments by excavation unit. The totals shown in Figure 31 include identified nail fragments. Most of the nails and the nail fragments are machine cut nails, only two wrought nails and two wrought nail fragments contributed to the sample.

One other note is that the nails were in such corroded

condition that identification of the head treatment was difficult. As a result, it could not be ascertained whether or not the head was machine cut or hammered, a chronologically diagnostic attribute (Noel Hume 1970:253).

The other architectural category considered, brick, consisted of 168 fragments of red, sand tempered brick recovered from both the reconnaissance and the intensive survey excavations. Only two of these bricks were glazed. All of the bricks were quite fragmentary, no whole or partially whole bricks were present in the sample obtained from the excavations. Figure 32 and Table VI-6, Appendix VI presents the brick fragments by excavation units.

Both the nail and the brick fragments are found in the greatest concentration in the vicinity of Test Squares B and D, north of the foundation remnant (Feature 2) that is located in Test Square F (Figures 31 and 32). The low percentage of bricks may indicate a wattle and daub, or cribbed, chimney and a frame superstructure.

Miscellaneous Artifacts: Various other artifact categories were recovered from this historic component at Field 4; these were the largely undiagnostic categories. Glass was common, especially green tinted flat plate glass. Glass bottles and tumbler fragments were recovered, although none were chronologically diagnostic, except for two mold blown basal fragments, one tumbler and one panel bottle. The range for these is 1857-1903.

Other artifact categories which include coal, oyster shell fragments and cinders were present in minor amounts. Several

pieces of slate were recovered, although it is not known if it was roofing slate related to the structure or refuse slate. Three pieces of strap iron were recovered from Test Square 1, though they are unidentifiable. Totals of the above mentioned artifacts are presented in the inventory.

Summary and Recommendations

Archival work and reconnaissance level archeological investigations in Field 4 identified the presence of one small prehistoric site of unknown cultural affiliation and an early 19th century site; intensive survey level investigations were implemented to further define the nature of the historic component (Plate 7).

The prehistoric component, characterized only by flaking debris, was confined to a relatively small horizontal area, and occurred in a plow zone context only. The site is probably similar to the two prehistoric components reported from Field 3 described previously and represents Piedmont Upland limited procurement activities.

The historic component is tentatively identified as an early to mid 19th century tenancy or tenant house. The tenant house attribution cannot be fully demonstrated on the basis of present evidence. However, a historic map search suggests a relatively unimportant and possibly short lived domestic structure. The premise that it is a domestic structure is evidenced by the various classes of ceramics representing food storage, food preparation, and food consumption associated in the immediate vicinity of the structure foundation. There is little doubt that

this foundation remnant corresponds to the structure indicated on the Wilmington and Brandywine map published in 1860.

Its placement in the early to mid 19th century is, in part, supported by the high percentage of pearlware (60%), and several of the design motifs occurring on the pearlware. Although such designs continue well into the 19th century, embossed and scalloped edged plates with blue and green shell and molded edged borders (c.f. 1805 median date, date range of 1780-1830 in South 1977:212), willow border (c.f. 1818 median date, date range of 1795-1840) and moth motif border (c.f. median date 1818, date range 1795-1840 for transfer printed pearlware in Noel Hume 1970), and the oriental scenes (c.f. median date 1818, date range of 1795-1840 for transfer printed pearlware in Noel Hume 1970) are generally accepted as being diagnostic features of ceramics dating to the first two decades of the 19th century.

In terms of site structure, excavations indicated the presence of a foundation which appears to be oriented toward Lancaster Pike. Features 1 and 3 probably represent associated outbuildings of an unknown function. The distribution of the artifacts is clustered most densely to the north or, if one assumes that the structure was a house oriented toward Lancaster Pike, behind the house. Artifact dispersal gradually drops off to the west, and stops abruptly to the east and north of the structure represented by Feature 2.

The results of the intensive survey excavations in Field 4 indicate that the H. Grant Tenancy site can be considered eligible for nomination in the National Register of Historic Places under criterion D, 36 CFR, Part 800. The site is

considered significant in that intact subsurface archeological features are present (Features 1, 2, and 3) that are likely to yield information directly relevant to an understanding of the changing economic patterns observed in the beginning of the 19th century. No sites of this nature, small tenant houses, have been excavated in Delaware, and these are completely unknown archeologically, much less historically (A. Guerrant, pers. comm. 1984). Given the presence of subsurface features, it will be possible to relate the distribution of artifacts in the Ap horizon, or plow zone, with the remnant structural remains. Thus, there is great potential for the reconstruction of patterns of disposal, as well as the discernment of functionally specific site areas. Patterns of disposal are important, culturally controlled behavior manifestations that have been extensively studied in other parts of the Eastern United States, yet have received little attention in the immediate Middle Atlantic region, at least for this time period and socio-economic class. One of the higher priorities for research concerning sites of this nature and time period is simply the creation of a well controlled data base that can serve as a basis for comparison with other sites in the Middle Atlantic, e.g. the Howard-McHenry Mill and Tenancy in Baltimore County, Maryland (Hurry and Kavanagh 1983).

In view of the above, data recovery investigations are recommended for the H. Grant Tenancy site in Field 4, as it is entirely in the Lancaster Pike Interchange right-of-way and will eventually be destroyed in the course of highway construction.

Phase III data recovery investigations should be directed to the opening of large excavation units to enable the mapping of the significant structural features of the settlement plan. The Ap horizon should be removed by hand so that horizontal control can be maintained over the artifactual material in this zone, in order to relate it to the subsurface features. This is especially critical in the area behind or to the north of the foundation remnant, or Feature 2. Excavation may not need to extend beyond the bounds of the area defined by Features 1, 2 and 3, and the area that contains the highest density of artifactual debris. Beyond this area, a shovel test sampling strategy conducted on a grid system can be employed to further refine the distribution pattern and, possibly to locate the remains of outbuildings. Analysis of the historic material should be directed towards answering questions concerning the economic status of the former inhabitants and the patterns of consumption as is evident in the material culture (Miller 1974, 1980). This kind of information is directly relevant to the research questions concerned with the changing economic structure of the early 19th century.

The prehistoric component present in Field 4 is not in and of itself considered significant enough to warrant any further investigation. The artifact assemblage is expected to be largely redundant, replicating essentially the same classes as present in Sites 1 and 2 in Field 3. These upland procurement sites are not expected to produce any subsurface features; all archeological context is confined to the Ap horizon, and can be considered disturbed. The only information obtainable is of a cultural-

historical kind, and possibly horizontal segregation of components. However, since the prehistoric component is located in the immediate area of the historic component, it cannot be ignored during the course of the mitigation of the historic component.

Hollingsworth Property

This refers to the wooded tract that lies along the east side of Route 141, on the north and south side of Little Mill Creek (Figures 8 and 33). The proposed right-of-way (as indicated on the aerial photographs) extends 250' east of the edge of Route 141. A historic map search conducted by TAA and by DelDOT personnel revealed that a possible frame structure (with the name Hollingsworth) beside it had been present in 1893 and that archeological remains associated with this structure might be present. Additional archival research revealed that the 1849 Rea and Price map did not show any structures on the Hollingsworth property, although two structures (one with the name Hollingsworth and one with the name Woodward) appear on the Wilmington and Brandywine map published in 1860. The 1881 Hopkins map of New Castle County shows the same two structures. It is with the 1893 Baist Atlas that three structures appear, the Hollingsworth house on the north side of Little Mill Creek, and two structures just south of Little Mill Creek, one adjacent to Route 141 or Centre Road, and the other just east of it. The structure adjacent to Centre Road is apparently the one that appeared earlier with the name Woodward associated with it. These structures do not appear later than the 1893 Baist Atlas.

The primary goal of the reconnaissance investigations was to ascertain whether or not the three structures indicated on the Baist Atlas had left any archeological remains. The other goal of the fieldwork was to test the area for prehistoric cultural remains.

The proposed construction will affect the floodplain on the north side of Little Mill Creek and the floodplain and an upper terrace or bluff on the south side of Little Mill Creek. On the north side of Little Mill Creek, beyond the immediate floodplain, the land has been extensively graded and contains a housing community. Figure 8 shows the location of the Hollingsworth study area.

Fieldwork

Field investigations began with a preliminary walkover of the study area to determine if any standing structures or foundation remnants were visible. No such features were observed. The area was heavily wooded with a dense undergrowth of brambles, necessitating subsurface testing. Ten 2' by 2' shovel tests were excavated parallel to Little Mill Creek in the immediate floodplain on the north side, while seven were excavated on the south side. The results of the field investigations are presented below. No archeological evidence of the structures located on the historic maps was recovered, nor was any evidence of prehistoric use of the area found. The shovel test locations are shown on Figure 33.

Soil Profiles: The profiles for the north side and the south side of the areas investigated along Little Mill Creek will be discussed separately, as they are quite different. The north

side is presented first, which is characterized by two different profiles, represented by Shovel Test 7 and Shovel Test 9. These profiles are presented in Figure 34.

The profile from Shovel Test 7 is a normal profile, exhibiting a stable, if somewhat waterlogged, soil setting. The profile from Shovel Test 9 exhibits a series of flood deposited zones, capping a profile essentially like the one in Shovel Test 7. No artifacts were recovered from Shovel Test 7, while one piece of green tinted flat plate window glass was recovered from Zone V, the IIIAb, of Shovel Test 9.

The south side of Little Mill Creek displayed a series of profiles that show an extensive mantle of fill of unknown depth. This fill is recent, containing asphalt and concrete fragments. It appears to extend for the entire width of the right-of-way on the south side of Little Mill Creek (Figure 35).

Artifacts: All of the artifacts recovered from the excavations at the Hollingsworth Property were undiagnostic or recent. Seven pieces of glass came from all the shovel tests combined from the north side of Little Mill Creek, and one dubious fire cracked rock.

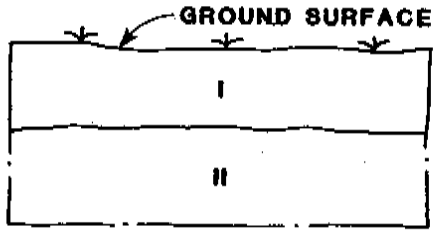
All the material recovered is probably late, and is not chronologically diagnostic; the context being recent fill.

Summary and Recommendations

Phase I investigations at the Hollingsworth study area failed to disclose any evidence of the three historic structures that were on the Baist Atlas. It is probable they were destroyed when Route 141 was widened into a four lane road. Any remains of

FIGURE 34

SHOVEL TESTS 1, 7 AND 9 WEST WALL PROFILES, HOLLINGSWORTH PROPERTY

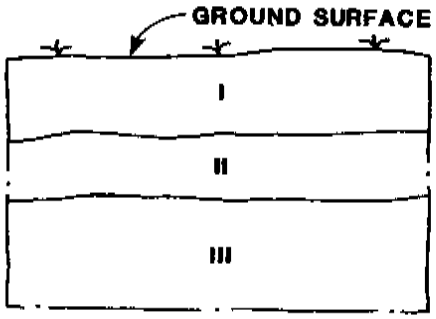


SHOVEL TEST 1

KEY:

Zone I — Dark greyish brown silt loam A1 horizon (10YR3/2)

Zone II — Yellowish brown silt loam A2 horizon (10YR5/4)



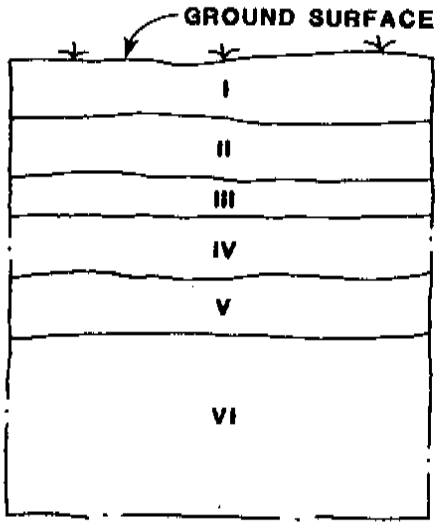
SHOVEL TEST 7

KEY:

Zone I — Very dark greyish brown silt loam A1 horizon (10YR3/2)

Zone II — Brown silt loam A2 horizon (10YR5/3) with slight mottling (10YR5/4)

Zone III — Gleyed B horizon (10YR6/4) with slight yellowish brown (10YR5/6 to 10YR5/8) mottling



SHOVEL TEST 9

KEY:

Zone I — Very dark greyish brown A1 horizon (10YR3/2)

Zone II — Dark brown C horizon (10YR3/3) of sand representing an episode of overbank deposition

Zone III — Dark brown silt loam IIA horizon (10YR3/3)

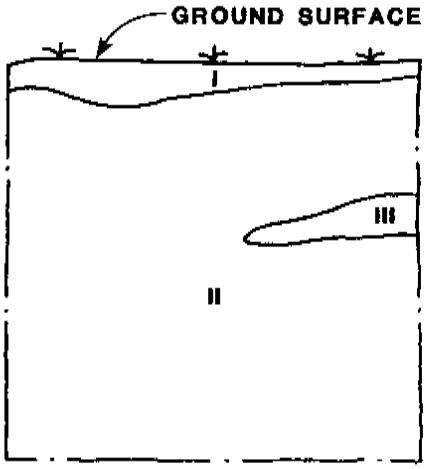
Zone IV — Dark yellowish brown silt loam C horizon (10YR4/4)

Zone V — Dark brown silt loam IIIA horizon (10YR3/3)

Zone VI — Mottled yellowish brown silty clay loam B horizon (10YR5/6), mottles were 10YR5/8

FIGURE 35

SHOVEL TESTS 11, 13 AND 17 WEST WALL PROFILES, HOLLINGSWORTH PROPERTY



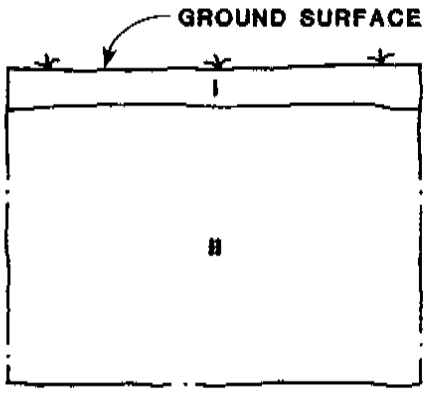
SHOVEL TEST 11

KEY:

Zone I — Very dark greyish brown silt loam Ao horizon or humus zone (10YR3/2)

Zone II — Brown to dark brown sand loam fill zone (10YR4/3 to 10YR3/3)

Zone III — Pocket of clay and gravel (5YR4/6 and 5YR5/8)

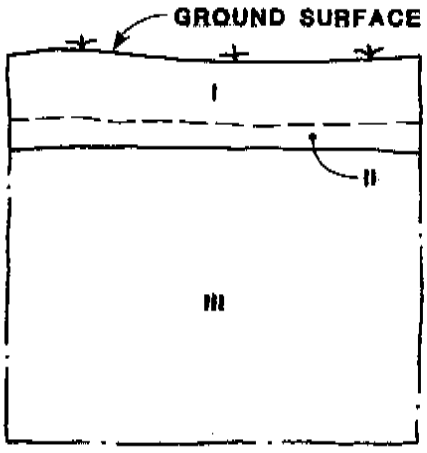


SHOVEL TEST 13

KEY:

Zone I — Very dark greyish brown silt loam Ao horizon (10YR3/2)

Zone II — Yellowish red sandy loam fill zone (5YR4/6) with strong brown clay inclusions (7.5YR4/6)



SHOVEL TEST 17

KEY:

Zone I — Black silt loam O horizon (10YR2/1)

Zone II — Very dark greyish brown A horizon (10YR3/2)

Zone III — Brown to dark yellowish brown sand loam fill zone (10YR 4/3 to 10YR4/6) containing large chunks of concrete and asphalt

the structures are probably beneath the heavy burden of recent fill that was encountered on the south side of the creek. No prehistoric occupational debris was uncovered; the immediate floodplain of Little Mill Creek would have been reworked by the creek, and would have been of little attraction to aboriginal inhabitants of the area. No additional work is recommended for the Hollingsworth study area.

GENERAL SUMMARY AND CONCLUSIONS

The purpose of these investigations was to determine if any significant cultural resources would be affected by the proposed improvements to Route 141 from north of Prices Corner to Kennett Pike in New Castle County, Delaware. Prior to the onset of the fieldwork, the Delaware Department of Transportation and the Delaware Bureau of Archaeology and Historic Preservation had delineated several areas which were thought to be of high potential for containing prehistoric archeological remains. In addition, these agencies had delineated three areas containing potential historical archeological remains. These were: the Armstrong site identified on the 1893 Baist Atlas as containing three brick or stone structures; the Hollingsworth site which was indicated on the same map as containing a frame structure; and the Cleremont site on which a residence and outbuildings dating to at least 1846 had been present, but were subsequently destroyed. An inspection of the locations of these potential sites revealed that the Armstrong and the Cleremont sites were outside the right-of-way, that no structures were currently standing in these locations, and that it was unlikely (based on a cursory surface inspection) that intact cultural remains would be

present because of modern construction disturbance. The Hollingsworth site was located in the right-of-way and the results of the investigation of this property are presented below.

Reconnaissance level investigations were carried out in five localities along the proposed Route 141 right-of-way. These localities are essentially the areas remaining along the right-of-way that have not previously been disturbed and were thought to have been areas that could have sustained prehistoric occupations. All other areas along the right-of-way are in housing developments, apartments or have been modified for commercial use. One of the study locales was the Hollingsworth tract, on which mid to late 19th century structures were noted on historic maps. One other area, Field 4, had a historic occupation/structure indicated on an 1843 map (see specific discussion for Field 4). The reconnaissance investigations at all five of these localities revealed low intensity prehistoric remains at two localities and two prehistoric sites at two other localities. Field 1 and Field 2, Woods, both contained one to two quartz flakes, indicating transient passage of prehistoric groups through the area; the flakes most likely represent tool kit maintenance carried out over a short period of time. Two other areas, Field 3 and Field 4 contained small upland limited procurement sites. Two such sites were located in Field 3, both out of the proposed right-of-way. Both sites appear to date to the Middle or Late Archaic time periods, as evidenced by the projectile points. No other functional artifact categories,

other than flaking debris were recovered from these sites. The other site was a small flake scatter confined to a relatively limited horizontal area located in Field 4. This was of unknown cultural affiliation, as no diagnostic artifacts were recovered. This site is not felt to be significant enough to warrant additional investigations.

All of the prehistoric remains recovered fit into the models of prehistoric settlement patterns that have been described for the Piedmont Uplands of Delaware and southern Pennsylvania by Custer and Wallace (1982). These meet other expectations concerning use of the Piedmont during the Archaic and Woodland periods described for the Middle Atlantic (Gardner 1978). Such models indicate that the Piedmont was utilized by various groups dating from the Middle Archaic through the Late Woodland for limited purposes, such as procurement of subsistence and raw materials. The archeological visibility of such sites is relatively low and is characterized by a limited range of artifact classes occurring in low numbers.

The reconnaissance and intensive study investigations in Field 4 revealed the presence of an early to mid 19th century site (the H. Grant Tenancy Site), a possible tenancy. This site is considered to be eligible for nomination in the National Register of Historic Places. Intact features were observed in a sub-plow zone context, suggesting the preservation of good archeological context of materials associated with the site. The site provides a good opportunity to study the economic unit of the tenancy, as none have been excavated to date in Delaware and few in the Middle Atlantic region, at least for this time period.

Data recovery, which is recommended for this site, would provide important comparative information for other tenancies known for the Middle Atlantic, e.g. the Howard McHenry site (18Bal00), located in Baltimore County, Maryland (Hurry and Kavanagh 1983). Such sites occupy an important place in the economic structure of the late 18th century and early 19th century, when the economic framework of the eastern seaboard was beginning to undergo radical changes. The tenancies represent a relatively little described class in the historical documentation of the era, yet formed an important economic substrate of American society.

Because of the significance of this site, a Phase III data recovery program is recommended. The entire site is located within the right-of-way of the proposed construction and will be completely destroyed, unless the project can be redesigned to avoid affecting the resource. The data recovery investigations should consist of extensive excavation units in order to map the structural remains and look for additional subsurface features. This extensive excavation should be undertaken in the area defined by Features 1, 2 and 3, the area that contains the most dense occupational debris. In addition, a sampling strategy should be employed over the remainder of the site to gain additional artifact distribution information and, perhaps, to detect functional areas within the site. The excavations should be directed towards the collection of data concerning the economic status of the site occupants and the patterns of consumption evidenced by them.

In addition, although the prehistoric site, as mentioned

previously, is not significant enough to warrant additional work in and of itself, prehistoric resources encountered during the mitigation of the historic site should not be ignored. These materials should be collected and analyzed as they contain information relevant to an understanding of the upland limited use transient camps which they represent.

Other than the specific recommendations outlined above, no additional work is recommended for the proposed Route 141 study corridor as no other significant archeological remains were encountered.

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1974 **The Flint Run Paleo Indian Complex: A Preliminary Report, 1971-1973 Seasons.** Occasional Publication of the Archeology Laboratory, Catholic University of America, Washington, D.C.

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Weslager, C. A.
1961 **Dutch Explorers, Traders, and Settlers in the Delaware Valley.** Philadelphia.

APPENDIX I

PROJECT PERSONNEL VITAS

Name: **William M. Gardner**
Born: April 8, 1935 U.S. Army Hospital, Panama Canal Zone
Present Address: Route 1, Box 1375, Front Royal, VA 22630

Present Positions:

Professor
Anthropology Department
Catholic University
Washington, D.C.

President
Thunderbird Research Corporation, and Thunderbird Archeological Associates, Inc.
Route 1, Box 1375
Front Royal, VA

Advisor
Thunderbird Regional Preservation Office
Route 1, Box 1375
Front Royal, VA

Director Emeritus
Thunderbird Museum and Archeological Park
Route 1, Box 1375
Front Royal, VA

Educational Background:

BA, Psychology, University of Florida, Gainesville, 1960
PhD, Anthropology, University of Illinois, Urbana, 1969

Areas of expertise:

Environmental archeology
Multi-disciplinary archeological research
Cultural ecology
Cultural resources management
Museum and interpretive design

Geographic expertise:

Middle Atlantic
Southeast
Middle West

Field work projects in:

Virginia, Maryland, Delaware, North Carolina, South Carolina, Georgia, Florida, West Virginia, Illinois, Pennsylvania, New Jersey, Washington, D.C.

Other areas:

South America, U.S.S.R.

Past Positions:

Chairman 1974-1978
Department of Anthropology
Catholic University of America
Washington, D.C.

President 1976-1978
Middle Atlantic Archeological Conference

Research Grants Directed:

Excavations at the Jasper Newman Site, Illinois.
National Science Foundation Doctoral Dissertation Improvement Grant.

Potomac River Archeological Site Survey.
National Science Foundation, two consecutive grants (co-principal investigator with R. L. Humphrey and C. W. McNett).

Excavations at the Thunderbird Paleoindian Site.
National Geographic Society.

The Flint Run Complex: A Study in Paleoindian to Early Archaic Period Adaptation, two consecutive grants.
National Science Foundation.

European Travel Grant.
American Council of Learned Societies.

General:

Created, organized and directed (for three years with R. L. Humphrey and C. W. McNett) The Consortium of Washington, D.C. Universities Potomac River Archeological Survey.

Created and Direct the Northern Shenandoah Valley Archeological and Environmental Research Program.

Created and Direct the Middle Atlantic Archeological and Environmental Research Program: A Broad Transect Study in the Appalachian Plateau, Ridge and Valley, Great Valley, Blue Ridge, Piedmont, and Coastal Plain Physiographic Provinces.

Created, organized and developed the Middle Atlantic Archeological Conference.

Created, co-designed and co-developed with Catholic University graduate students, the Thunderbird Museumand Archeological Park.

Developed and organized the Thunderbird Regional Preservation Office.

Designed and developed the undergraduate anthropology and the archeological training programs at the Catholic University of America.

Contract: (Principal Investigator)

Continuing:

Thunderbird Regional Preservation Office. Matching grant with the Virginia Historic Landmarks Commission and the Virginia Research Center for Archeology.

Flint Run Archeological District Excavation Grant. Matching grant with the Virginia Historic Landmarks Commission.

Hagerstown Valley, Washington County, Maryland, Archeological Site Survey Program. Matching grant with the Maryland Historic Trust.

Open-ended Intensive Archeological Investigations contract with the Maryland Department of Transportation.

Completed:

Shelbyville Reservoir, Illinois, Salvage Archeology. National Park Service.

Salvage Excavations at the Dotray Site, Illinois. Illinois Archeological Survey Highway Salvage Program.

Excavations at Fort Lincoln, Washington, D.C. National Park Survey.

Archeological Excavations at the Stout Site, Great Falls National Park, Virginia. National Park Service.

Archeological Investigations of Matildaville, Great Falls National Park. National Park Service.

Archeological Investigations at the Frederick Douglass Home, Washington, D.C. National Park Service.

Archeological Survey of Piscataway National Park. National Park Service.

Archeological Excavations at Harpers Ferry National Park. National Park Service.

Archeological Survey of a Portion of the Northwest Branch, Prince Georges County, MD. Washington Suburban Sanitary Commission.

Archeological Survey of a Portion of the Skyland and Big Meadows Area, Shenandoah National Park, Virginia. National Park Service.

William P. Barse
Thunderbird Archeological Associates, Inc.
Route 1, Box 1375
Front Royal, VA 23630

Born: 1952

Education:

Montgomery College, Rockville, Maryland, 1969-1971, No Degree
University of Maryland, College Park, Maryland, 1971-1974, B.A. in Anthropology
Catholic University of America, Washington, D.C., 1976-1981, M.A. in Anthropology

Field Experience:

My field experience began in 1968, working with the Archeological Society of Maryland on excavations carried out under the supervision of the State Archeologist. Geographically, my field experience encompasses the Middle-Atlantic Region, the mid-west, and the southeast. My current research interest in the Early to Middle Woodland transition in the Middle Atlantic, and the development of localized exchange networks during the Middle Woodland in the Middle Atlantic and the southeast. Listed below are the major field seasons I have taken part in since 1972:

1972 Ecavation at the West Shore Site, Anne Arundel Co., Md.
1974 Excavation at the Rosehaven Site, Anne Arundel Co., Md.
1975 Excavation at the Heidenreich Site, Noblesville, Indiana
1976 Excavation at the Van Naita Site, Bahle Ground, Indiana
1977 Excavation at the Corral Site, Front Royal, Virginia
1979 Archeological Survey of the Proposed Corridor H Route and Charles Town Bypass, West Virginia
1979 Archeological Test Excavations in the Richard B. Russell Reservoir, South Carolina and Georgia
1980 Survey of Private Collection in the Richard B. Russell Reservoir Region
1981 Excavations at the Cabin Run Site, Front Royal, Virginia

I was the field supervisor on all but the 1974 and 1981 sites listed above. In addition, I have worked on many smaller contracts in the Middle Atlantic region.

Papers/Publications/Reports:

1973 "Riggins Pottery from Southern Maryland". Maryland Archeology, Vol. 9, nos. 1-2, by Melburn D. Thurman and William P. Barse.

1974 "Outline - Mockley and Mockley-Like Pottery in the Mid-Atlantic." Paper presented at the 5th Middle Atlantic Conference, Baltimore, Md., by Melburn D. Thurman and William P. Barse.

1977a "Further note on Riggins Ware from Maryland". Paper presented at the 8th Middle Atlantic Conference, Trenton, New Jersey, by William P. Barse.

1977b "The Purlett Site: An Exploration." Maryland Archeology, Vol. 13, no. 1, by William P. Barse, Wayne E. Clark, and Gerald Braley.

1978 "Preliminary Notes on the West Shore Sie, 18AN219". Newsletter-of the Archeological Society of Maryland, Vol. IV, #1, January. By William P. Barse.

1979 "A Preliminary Archeological Assessment of the Proposed Corridor H Routes, West Virginia, from Elkins, to the Virginia State Line." Report submitted to the West Virginia Department of Highways by Kevin Cunningham and William P. Barse.

1979 "A Preliminary Archeological Reconnaissance of the Charles Town Bypass." Report submitted to the West Virginia Department of Highways by William P. Barse and Kevin Cunningham.

1980 "Results of the Testing of Nineteen Archeological Sites in the Richard B. Russell Reservoir Region, South Carolina and Georgia." Report submitted to IAS in Atlanta by William M. Gardner and William P. Barse.

1980 "The Distribution of Paleo and Early Archaic Projectile Points in the Richard B. Russell Reservoir Region". Report on file, Thunderbird Research Corporation, prepared for submission to Inter-Agency Archeological Services, Atlanta, by William P. Barse.

1981 Archeology of the Savannah River in the Georgia-South Carolina Piedmont: Test Excavations in the Richard B. Russell Reservoir Project Area. M.A. Thesis, Department of Anthropology, Catholic University of America, Washington, D.C., by William P. Barse.

Professional Affiliations/Memberships

Staff Archeologist, Thunderbird Research Corporation
Research Associates, Old Missouri Research Institute
Society for American Archeology
American Anthropological Association
Archeological Society of Maryland

APPENDIX II

RESEARCH PROPOSAL

PHASE I & II

AND

PHASE III

ARCHEOLOGY, CULTURAL RESOURCE MANAGEMENT

THUNDERBIRD ARCHEOLOGICAL ASSOCIATES, INCORPORATED

ROUTE ONE, BOX 1375
FRONT ROYAL, VIRGINIA 22630

(703) 635-3860

Proposal for Phase I and II Archeological Investigations for Improvements to Route 141, New Castle County, Delaware

This proposal was prepared by Thunderbird Archeological Associates for the conduct of archeological investigations for the planning study for proposed improvements to Route 141 in New Castle County, Delaware. It was prepared in response to a request for the Location and Environmental Studies Office of the Delaware Department of Transportation. The Delaware Bureau of Archaeology and Historic Preservation has identified two historic sites, the Hollingswood property and the Cleremont estate, and several sensitive areas for prehistoric archeological resources that may be affected by the proposed construction. Upon acceptance of this proposal, Thunderbird Archeological Associates will complete five tasks, outlined in the letter request: 1) conduct archival work, field investigations, artifact analysis and processing; 2) determine the integrity, significance of any resources identified, and make recommendations concerning their eligibility for nomination to the National Register of Historic Places; 3) evaluate such resources within the context of Delaware's prehistory and history; 4) prepare a standard archeological report documenting the investigations and their results; and 5) if necessary, recommend a plan of mitigation of impact, including National Register forms, budget and research design.

This proposal is presented in two parts. First, a brief description of the prehistoric and historical context for the proposed research is given, including research questions that will be addressed by the investigations. Second, a technical proposal is given describing the research methods and outlining the schedule and budget for the proposed work.

Research Context

A general discussion of the prehistoric research context for Delaware has been provided by Jay F. Custer, University of Delaware, for the Bureau of Archaeology and Historic Preservation. Custer analyzes site distributions in the various physiographic regions of the state for the various cultural-historical periods of prehistoric occupation. His evaluations of the probabilities for particular types of sites in the Piedmont Uplands Study Unit can form the basis for predictive statements about resources that may be located in the Route 141 study corridor. He states that, for the Paleoindian/Early Archaic period, site probabilities are low for quarry sites, quarry

reduction sites and quarry related base camps. The probabilities for non-quarry related base camps and base camp maintenance stations are medium, and those for hunting sites are high. Elsewhere (Custer and Wallace 1982:151), he observes that the latter three categories of sites are likely to be located near sinkholes or floodplain swamps within the region, and since the project area does not contain such features, the likelihood of locating the remains of Paleoindian occupations appears to be fairly low.

For the Middle Archaic period, Custer lists three types of sites. In the Piedmont Uplands, there is a low probability for macro-band base camps, a medium probability for micro-band base camps and a high probability for procurements sites. Only one of the two topographic settings for the latter type of sites occurs in the study corridor; upland slopes above ephemeral streams and springheads. These settings were indicated as high probability areas by the Delaware Bureau of Archaeology and Historic Preservation. In the Woodland I period (including Late Archaic through Middle Woodland manifestations), the number of site types expands, but the predicted distribution for the study corridor portion of the Piedmont Uplands remains identical to those of the preceding period. The same may be said for the Woodland II (Late Woodland) occupations. In summary, Paleoindian sites are not predicted in the study corridor and only short-term procurement sites would be expected from the remaining span of prehistoric time. These sites would be relatively small and contain a limited range of functional artifact types.

The survey activities proposed here can serve to confirm (or disconfirm) settlement models proposed by previous reserach on site distributions in the Piedmont Uplands from various prehistoric periods, and possibly add data for the refinement of these models. Custer's research suggests that the quality of data for the Piedmont Uplands ranges from fair to good, and that the use of this landform was largely restricted to short-term procurement activites. Sites there represent only a portion of the subsistence round, with more intensive utilization of other environmental settings. The increase in the number of data points which may be generated by this study may ultimately allow a more refined analysis of such phenomena as "distance decay" relationships between these short-term occupations and the more intensively used site-settings for each time period. This, in turn, may allow a more refined characterization, in processual terms, of the differences between the procurement patterns practiced at various times in the prehistoric past.

The research proposed here will add only incrementally to the data base necessary to achieve these research goals, and the research and analysis for this project will concentrate on the evaluation of resources discovered by the survey within the existing research context. No major elaboration of that context would be expected at this phase of assessment.

An examination of the proposed construction plan, and maps and documents supplied by the Delaware Bureau of Archaeology and Historic Preservation suggests that there are three possible historic period sites that may be affected by the construction. The first two of these were identified from maps dating to the last quarter of the nineteenth century. One, the Armstrong Site, is identified on the Baist (1893) map as containing three brick or stone structures, and the other, the Hollingswood site, is indicated as a frame structure on the same map. Nothing else is known of these sites at the present, but background and archival research, proposed for this study, should develop additional information on these sites. The third historic period site that may be affected by the proposed construction is the Cleremont (N-478) site. Formerly, a residence with outbuildings was located at this site, but these have recently been destroyed. Significant archeological remains associated with the 1846 (and possibly earlier) structure may still be present at the site, however.

These three sites represent rural occupations whose remains may be compared to those obtained from the Hawthorn Homestead site, currently under investigation by the Delaware Department of Transportation. Of particular research interest will be the comparison of economic status among these sites and between them and the sites investigated at the Stanton Intersection, a companion project to this one (proposal submitted separately). The differential effects of processes of urbanization and industrialization on rural contexts can be examined at these and nearby sites.

As in the case of the prehistoric resources the data developed at the site identification and testing stage cannot be expected to result in a major elaboration of the existing research models, and the work proposed here will concentrate on the evaluation of any resources identified.

Technical Proposal and Budget Justification

To evaluate the archeological resources that may be affected by the proposed highway improvements, and to address the research problems described above four general activities are proposed. These are shown in the attached budget, and the justifications for them are given below.

I. Background and Archival Research - The Delaware Bureau of Archaeology and Historic Preservation maintains excellent records on the prehistoric resources of the state, and these will be consulted to provide a more detailed understanding of the resources that may be affected by the project. In addition, experts knowledgeable in the prehistory of the region and the state will be consulted to provide data and interpretations not otherwise available in the records. For the historic period resources, maps, primary and secondary resources will be researched at the Bureau of Archaeology and Historic Preservation, the Delaware Archives, the University of Delaware

Library, the Historical Society of Delaware, the National Archives, and the New Castle County Courthouse. The objectives of this research will be identify the occupants of the sites and develop data on their economic conditions.

The background research is necessary to identify and evaluate the prehistoric and historic resources in the study corridor within the larger state and regional contexts. In this way, the study will contribute to broader research and resource management goals. The work will be completed by the field supervisor, and will take fifteen days.

II. Field Investigations - To identify and evaluate the physical integrity and significance of any archeological remains that may be present in the impact zone, a program of field investigations will be completed. Some of the high probability zones for prehistoric resources are presently cultivated and these will be subject to pedestrian survey by the survey team walking at intervals of no more than fifteen feet. This spacing should be sufficient to identify sites whose predicted diameter is approximately fifty feet. In locations where there is no surface exposure five-foot by five-foot test pits will be excavated. Intact soil horizons bearing cultural material will be screened through 1/4 inch mesh screens to collect representative samples of artifacts. Natural and cultural stratigraphy will be recorded in profile drawings for each unit, and episodes of fill or disturbance will be noted. The spacing of the test units will be adjusted to local conditions. For the suspected locations or prehistoric sites, test units will be distributed to sample topographic variation within the sensitive area, with emphasis on downslope locations where intact remains may have been protected by slopewash. At historic sites, test pits will be distributed on the basis of surface indications and any pertinent data developed during the background study.

The field investigations are necessary to identify and evaluate the integrity of any resources that may be present to determine if additional research is necessary to mitigate the impact of the proposed construction. The fieldwork will be completed by four experienced crew persons under the direction of the field supervisor. The time allocated for fieldwork is fifteen days.

III. Lab Processing and Analysis - following the completion of the fieldwork, all artifacts and other cultural material (i.e. faunal remains) will be returned to the lab for processing and analysis. All artifacts will be cleaned and marked, and any conservation problems addressed. The prehistoric artifacts will be analyzed with reference to previously established types and implied function, in orer to evaluate the temporal provenience and function of each site. The analysis of the historic period artifacts will be accomplished using a system of attribute analysis developed in our lab. This allows for the delineation of a number of different economic and functional patterns, and the system is compatible with automatic data processing

techniques. The analysis procedure is necessary to fully evaluate the content and significance of archeological remains identified during the fieldwork. The analysis and processing will be completed by the field supervisor and two crew persons and will take ten days.

IV. Report Preparation - all of the activities described above will be reported in a standard archeological report. The report will also contain recommendations on the significance of any resources identified with respect to the criteria for eligibility for nomination to the National Register of Historic Places. If additional work in the form of data recovery is justified, a research design and budget for that work will be included in the report. The report is necessary for the planning of the construction and any additional cultural resources mitigation that may be necessary. The report will be completed by the field supervisor and the editor, under the supervision of the principal investigator. It will require twenty days to prepare. A draft copy, including illustrations, will be submitted to the Delaware Department of Transportation who, after review and approval, will be responsible for the mechanical aspects of report production, according to the Scope of Work.

Per diem costs for the background and archival work and the field investigations have been budgeted since these portions of the work will necessitate residence away from our principal place of business in Front Royal, Virginia. Per Diam is allocated for the following travel schedule: Travel will begin in Front Royal, Virginia, on Sunday afternoon (travel time to the project area is approximately four hours and forty-five minutes) and accommodations will be needed for Sunday night. At five o'clock on Friday afternoon, during each working week, return travel to Front Royal will commence. Thus, five full days of Per Diem will be required to cover travel expenses for each week of work in the project area (including background research). Overhead, including all indirect cost and benefits has been budgeted at our standard rate of forty five percent against wages and salaries. Mileage has been charged at twenty cents a mile for 3,500 miles, based on previous experience with work in Delaware. It includes travel to and from Front Royal and daily travel for one vehicle for the background and archival work and two vehicles for the field investigations. Photocopying costs have been budgeted for the copying of maps and documents from the various sources mentioned in the description of the background and archival study. Thunderbird Archeological Associates is a profit making corporation, and a standard profit charge of eight percent has been calculated against the total wages and overhead.

All the work described in this proposal will be closely coordinated with the Delaware Department of Transportation, and consultation with the Delaware Bureau of Archaeology and Historic Preservation, representing the Delaware State Historic Preservation Officer, will be maintained.

THUNDERBIRD ARCHEOLOGICAL ASSOCIATES, INCORPORATED

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Proposal for Conducting Data Recovery Investigations at the Field Four Site in New Castle County, Delaware

June 1984

Introduction

This transmittal presents a proposal for conducting data recovery investigations at the Field Four site in New Castle County, Delaware. Significant archeological remains will be affected by proposed construction connected with improvements to Delaware Route 141. This proposal was prepared in response to a request for proposal from the Delaware Department of Transportation.

Background and Research Questions

In response to changing economic conditions in the beginning of the nineteenth century, land tenure became consolidated into the hands of fewer individuals in northern Delaware. Landowners often had business interests connected with industrialization or commerce in urban centers and frequently lived in the city. To maintain agricultural production, a system of tenancy was employed. Tenants were probably drawn from groups of lower economic status in both urban and rural populations, but very little historical research has been devoted to these individuals and little is known of their economic or cultural background. Likewise, little remains of their material culture, including their housing, have survived. It appears that the Field Four site represents a tenant occupation for reasons presented in the report.

The testing program at this site revealed the remains of a structure and other sub-plowzone features, as well as a large quantity of artifact remains within the plowzone. The data recovery program proposed here has been designed to retrieve a sample of data to address several research questions. We would like to learn more about the spatial arrangement and relationships of the dwelling and other service buildings such as storage sheds, animal pens, privies, etc., to show how these compare to the larger complexes of the owners, many of which are still extant. We also expect that discarded material possessions in the plowzone and features will allow a more precise characterization of the social and economic status of the tenant occupants of the site. Patterning in the distribution of economically significant attributes in the artifacts can be compared with data collected in future research to see if there are broad patterns reflecting the economic conditions of tenants as a group.

Both the spatial and artifact patterns identified at this site can serve as a baseline for comparison with data developed in future research into this little known class of archeological occupations. Future research questions might include the examination of the effects of proximity to a major market center

(Wilmington) in comparison with situations more removed from such centers.

Research Methods

The research methodology has been designed to address these and other research questions. The site area has been divided into four zones, each requiring somewhat different treatment. Zone A is the area surrounding the structure foundation, a portion of which was located during the testing program. The exact size of the structure was not determined during the testing program, but dimensions of 20 feet by 30 feet have been arbitrarily assumed. Complete hand excavation of this zone will be carried out to completely reveal the foundation, and any associated features. In eighteenth century house sites, door and window locations are sometimes revealed by concentrations of artifacts, and if this holds true for this early nineteenth century site, valuable architectural information may be revealed about a little known dwelling form.

Zone B is the area to the rear of the structure in which features and the remains of dependencies are likely to occur. It's lateral margins (on the west and east) have been determined by the points at which artifact counts from the test pits in the testing program fell to near zero. To the rear (north), an arbitrary boundary which is seventy feet from the house has been drawn. At this point, the ground begins to drop off toward the spring drainage. Although some trash features, and possibly waste disposal features, might occur in this zone, the general expectation is that the scope of the archeological remains will be smaller.

A series of five foot by five foot excavation units, to amount to 10% of the total area of Zone B (2055 sq. ft.) is planned. The purpose of these units is two-fold: first, the plowzone in these units will be screened through $\frac{1}{4}$" mesh to obtain distributional data on the artifacts at the site. Soil samples will be collected in each unit to detect any differences in soil chemistry that might reveal different functional uses of this area. The second purpose of the five foot by five foot excavation units is to locate any features that survive below the plowzone.

The search for feature remains will be augmented by the use of a backhoe to strip the plowzone in a series of diagonal lines (to avoid the systematic exclusion of linear features such as fence rows) across Zone B. The machine stripping will expose 35% of the area of the zone (7193 sq. ft.).

Zone C lies between Zone B and the spring drainage, behind (north of) the structure location. The general approach here

will be similar to that taken in Zone B, except that the proportion of area opened in 5' by 5's will be 5% (688 sq. ft.), and that exposed by machine will amount to 25%, commensurate with the lower expectation for archeological remains.

Zone D lies in front of the structure according to the hypothesized foundation size). The expectation for archeological remains, both within the plowzone and below it, is smallest in this area, and a 5% sample of the area (270 sq. ft.) will be exposed in 5' by 5's, and the plowzone screened, primarily to supplement and complete the artifact distribution data gained from the other zones. The front (southern) boundary of this zone is defined by the construction margins of (existing) Lancaster Pike. Although some additional remains may lie beneath this roadway, they are likely to be sparse and not significant enough to justify removing a portion of the roadway. During the completion of the hand and machine excavations, sub-plowzone features will mapped and excavated.

After the completion of the fieldwork, all artifacts will be returned to the laboratory, washed, marked and subjected to any needed conservation measures. To address research questions about economic status and intra-site functional patterning, the artifacts from all proveniences will be subject to a comprehensive analysis procedure which records formal, decorative and functional attributes for all materials (to the degree possible). The analysis procedure will consist of numerically coding the attribute variates for each variable, and entering these codings into the computer for further statistical manipulation.

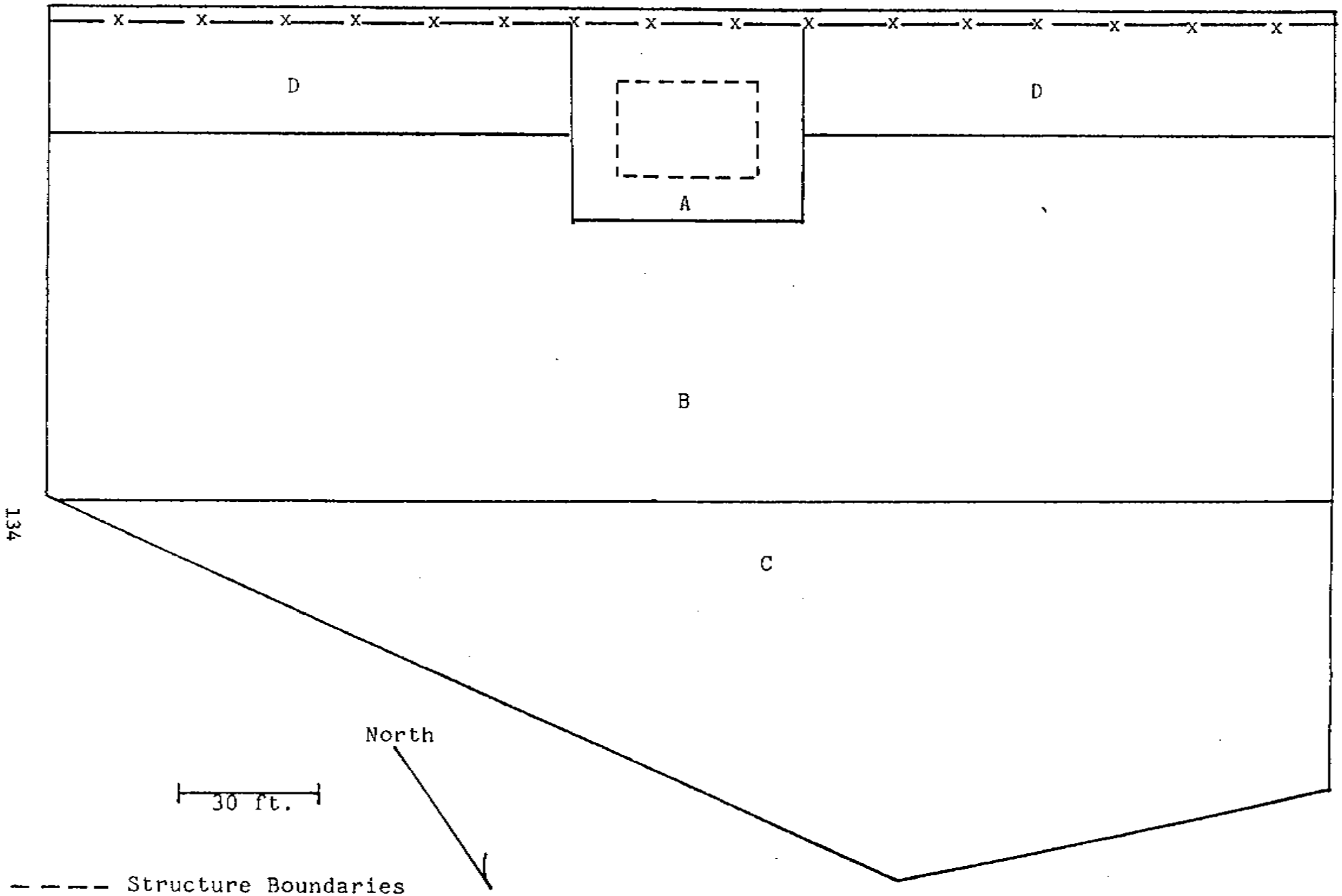
Soil samples will be analyzed for chemical composition, and floral and faunal samples analyzed for information on diet. Matrix samples from features will be water-screened for micro-floral and micro-faunal data.

In order to calculate the budget for the proposed work, the surface area sampling fractions for the various coverage areas were divided by the number of person hours necessary to excavate a fraction of those areas. The rate used was 400 person hours per thousand square feet. This is the equivalent of 10 person hours to excavate a five-foot by five-foot excavation unit, or, five hours for a two person team, and includes excavation, screening, mapping, feature excavation (if necessary) and backfilling. This rate is based on extensive experience working on sites that are primarily plowzone sites, and is somewhat lower than would be used on a site with more complex stratigraphy. The number of person hours for each fraction of each coverage area was then divided by eight, to obtain person days, and again by six, the number of crew proposed, to yield the number of work days for each portion of the area using a six person crew. These calculations are summed in the attached table to yield a total of 43 days (rounded) to complete the hand excavation portions of the fieldwork. Two days were added for rain and other contingencies.

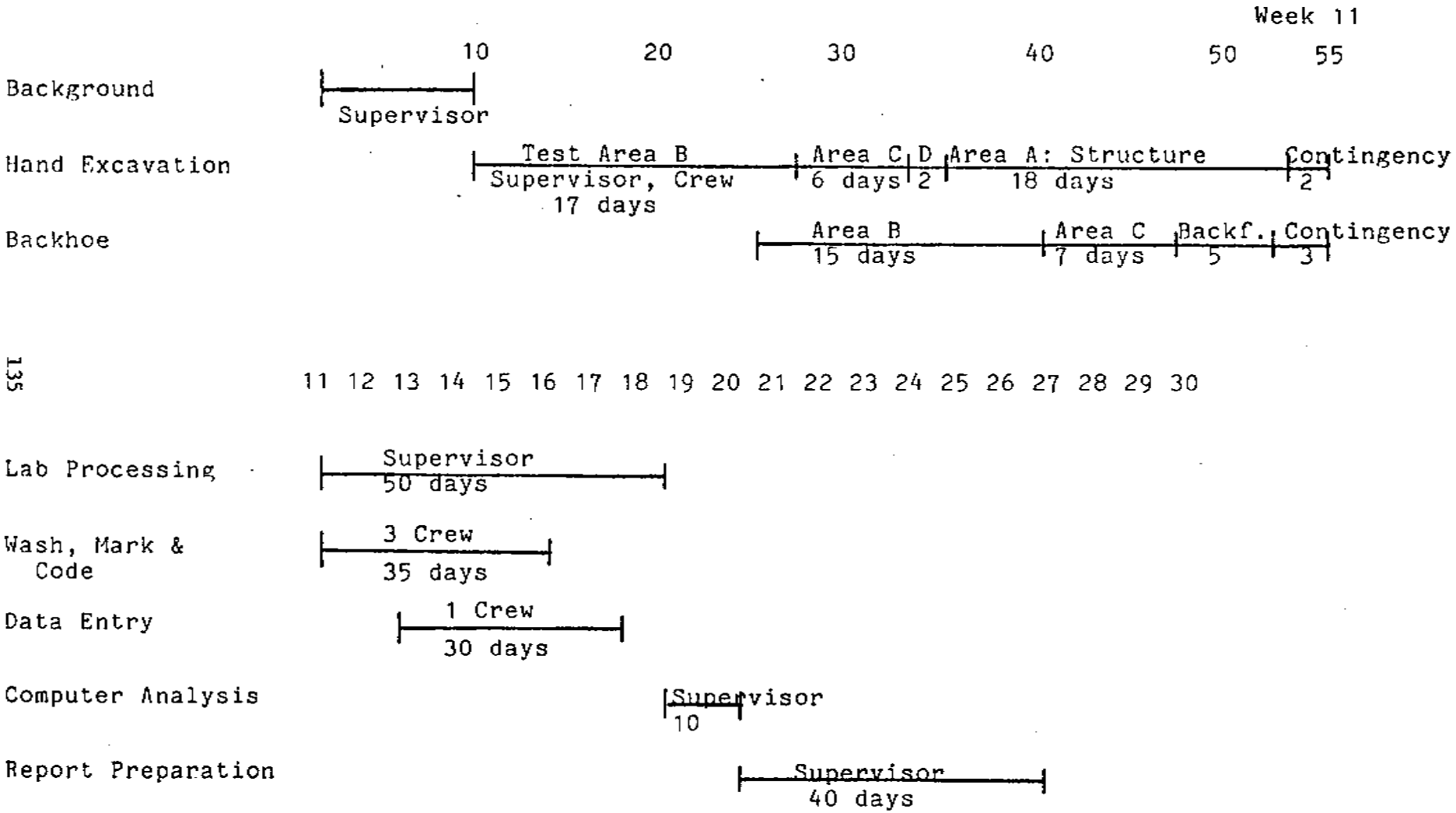
The backhoe portion of the work was calculated, estimating a rate of 500 square feet per day, to clear off the plowzone, under the supervision of the supervisor. This work will be carried out concurrently with the hand excavations. Twenty-two days will be necessary to expose the sampling fraction area, five days is allocated for backfilling, and three days is allowed for contingencies such as rain and mechanical failure. This leads to thirty days for the backhoe work.

The personnel hours for the lab processing, data coding, and analysis hours are based on extensive experience with similar procedures on other projects, as are the report preparation hours.

Costs, shown in the attached budget, are therefore based directly on work activity, and adjustments in the budget can by made by altering the sampling fractions, and therefore the work produced. The sampling fractions are regarded as minimum to effectively realize the research design, however.



Site Boundary and Coverage Areas


Week 11
10
20
30
40
50
55
Background
Supervisor
Hand Excavation
Test Area B
Supervisor, Crew
17 days
Area C
6 days
D
2
Area A: Structure
18 days
Contingency
2
Backhoe
Area B
15 days
Area C
7 days
Backf.
5
Contingency
3
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Lab Processing
Supervisor
50 days
Wash, Mark & Code
3 Crew
35 days
Data Entry
1 Crew
30 days
Computer Analysis
Supervisor
10
Report Preparation
Supervisor
40 days

Work Rate Calculations

Hand Excavations

Coverage Area	Total Area Sq. Ft.	Sampling Fraction 100%	10%	5%	No. 5'x5' Units	Person Hrs.	Person Days	Crew of 6	Work Days
A	2100	2100			84	840	105	17.5	18
B	20,550		2055		82.2	822	102.75	17.125	17
C	13,750			687.25	27.5	275	34.375	5.729	6
D	5400			270	10.8	108	13.5	2.25	2
Total	41,800	2100	2055	957.5	204.5	2045	255.625	42.60	43
			5112.5					+ contingency	2
								Total Days	45

Backhoe Excavation

Coverage Area	Total Area Sq. Ft.	Sampling Fraction 35%	25%	at 500 Sq. Ft. per day	Work Days
B	20,550	7192.5		14.37	15
C	13,750		3437.5	6.88	7
Backfill					5
				+ contingency	3
				Total Backhoe Days	30

APPENDIX III

ARTIFACT PROVENIENCE AND FINAL INVENTORY, FIELD 1, FERRIS SCHOOL PROPERTY

Field 1 - Ferris School Property

Provenience and Accession List

Surface Collection Acc. No. 83/127/1

Sheet 1 of 1

GENERAL ARTIFACT INVENTORY

Site No. _____ Site Name Ferris School Property - Field #1

These are keyed to provenience numbers list

			Accession No. 83/127/1														
Ceramics	Redwr	Glzd															(1)
		Ungl															(2)
	White	Deco															(3)
		Undc	1														(4)
	Stone	Deco															(5)
		Undc															(6)
	Prcln	Deco															(7)
		Undc	1														(8)
	Creamware																(9)
	Yelloware																(10)
	Prlwr	Deco															(11)
		Undc															(12)
	Ironstone																(13)
	Total		2														(14)
Glass	Bottle	Green															(15)
		Blue															(16)
		Brown	1														(17)
		Clear															(18)
	Tableware																(19)
	Storage		1														(20)
	Milk Glass																(21)
	Misc.		4														(22)
	Total		6														(23)
	Lamp Chimney																(24)
	Window		1														(25)
Nails	Staple																(26)
	Wrgt																(27)
	Cut																(28)
	Wire																(29)
	Roofing																(30)
Metal / Other	Architecture																(31)
	Furniture																(32)
	Household		1														(33)
	Misc.																(34)
	Tool																(35)
	Arms																(36)
	Screws																(37)
	Wire																(38)
	Sheet																(39)
	Unid Metal Fr																(40)
	Nail Frags																(41)
	Total		1														(42)
Button/Bead																	(43)
Other			4														(44)
Plastic																	(45)
Pipes																	(46)
Brick			3														(47)
Oyster/Clam			8														(48)
Aboriginal			2														(49)
Total			27														(50)

APPENDIX IV

ARTIFACT PROVENIENCE AND FINAL INVENTORY - FIELD 2

Field 2
Provenience and Accession List

	Shovel Tests	2'by2' Units	Acc. No.
	#1 Ap	(no artifacts)	83/128/1
	#2	Last Fill Above Subsoil	83/128/2
	#3 Ap		83/128/3
	#4	(no artifacts)	83/128/4
	#5 Ap		83/128/5
#15	#19 Ao		83/128/6
	#19 Ap	(no artifacts)	83/128/7
	#20 A1		83/128/8
	#21 A2		83/128/9
Surface Collection		South Field	
	General Surface		83/128/10
	Pass 1		83/128/10
	Pass 2		83/128/10
	Pass 3		83/128/10
	Pass 4		83/128/10
	Pass 5		83/128/10
Surface Collection		North Field	
	Pass 1		83/128/11
	Pass 2		83/128/11
	Pass 3	(no artifacts)	83/128/11
	Pass 4		83/128/11

Field 2 - Artifact Summary

Totals		General Artifact Inventory
9	(1)	redware, glazed
4	(2)	redware, unglazed
16	(3)	whiteware, decorated
19	(4)	whiteware, undecorated
0	(5)	stoneware, decorated
1	(6)	stoneware, undecorated
1	(7)	porcelain, undecorated
3	(8)	porcelain, undecorated
0	(9)	creamware
0	(10)	yelloware
7	(11)	pearlware, decorated
6	(12)	pearlware, undecorated
2	(13)	ironstone
Ceramic Total 68	(14)	
0	(15)	green bottle glass
3	(16)	blue bottle glass
6	(17)	brown bottle glass
3	(18)	clear bottle glass
0	(19)	tableware
16	(20)	storage
3	(21)	milk glass
6	(22)	misc. glass
Glass (Subsistence Function) Total 37	(23)	
4	(24)	lamp chimney
4	(25)	window glass
0	(26)	nail, staple
0	(27)	nail, wrought
0	(28)	nail, cut
0	(29)	nail, wire
0	(30)	nail, roofing
0	(31)	metal, architecture
0	(32)	metal, furniture
1	(33)	metal, household
0	(34)	metal, misc.
0	(35)	metal, tool
0	(36)	metal, arms
0	(37)	metal, screws
0	(38)	metal, wire
0	(39)	metal, sheet
0	(40)	unidentified metal fragments
0	(41)	nail fragments
Metal Total 1	(42)	
2	(43)	button/bead
10	(44)	other
1	(45)	plastic
0	(46)	pipes
10	(47)	brick
24	(48)	oyster/clam
9	(49)	aboriginal
Total Artifacts 170	(50)	

GENERAL ARTIFACT INVENTORY

Site No. _____ Site Name Field #2

These are keyed to provenience numbers list

			Accession No.	83/128/2	83/128/3	83/128/5	83/128/6	83/128/8	83/128/9	83/128/10	83/128/11							
Ceramics	Redwr	Glzd		1						8								(1)
		Ungl								3	1							(2)
	White	Deco				1				13	2							(3)
		Undc								10	9							(4)
	Stone	Deco																(5)
		Undc								1								(6)
	Prcln	Deco									1							(7)
		Undc								3								(8)
	Creamware																	(9)
	Yelloware																	(10)
	Prlwr	Deco			1					6								(11)
		Undc								6								(12)
	Ironstone										2							(13)
	Total			1	1	1	—	—	—	50	15							(14)
Glass	Bottle	Green																(15)
		Blue									3							(16)
		Brown									6							(17)
		Clear								1	2							(18)
	Tableware																	(19)
	Storage									1	15							(20)
	Milk Glass										3							(21)
	Misc.						1			2	3							(22)
	Total			—	—	—	1	—	—	4	32							(23)
	Lamp Chimney						4											(24)
	Window			1					1	2								(25)
Nails	Staple																	(26)
	Wrgt																	(27)
	Cut																	(28)
	Wire																	(29)
	Roofing																	(30)
Metal Other	Architecture																	(31)
	Furniture																	(32)
	Household						1											(33)
	Misc.																	(34)
	Tool																	(35)
	Arms																	(36)
	Screws																	(37)
	Wire																	(38)
	Sheet																	(39)
	Unid Metal Fr																	(40)
	Nail Frags																	(41)
	Total			—	—	—	1	—	—	—	—								(42)
Button/Bead				1				1										(43)
Other										7	3							(44)
Plastic											1							(45)
Pipes																		(46)
Brick				2						8								(47)
Oyster/Clam										19	5							(48)
Aboriginal					2			1	1	1	4							(49)
Total				5	3	1	6	2	2	91	60							(50)

APPENDIX V

ARTIFACT PROVENIENCE, FINAL INVENTORY AND ARTIFACT TABULATIONS, FIELD 3

Field 3

Provenience and Accession List

Shovel Tests		Upper and Lower Fields 2'by2' Units	Acc. No.
#1	Ap	Lower Field	83/129/1
#1	Zone 2	"	83/129/2
#2	Ap	Lower Field	83/129/3
#4	Ap	Upper Field	83/129/4
#5	Ap	Upper Field	83/129/5
#6	Ap	Upper Field	83/129/6
#7	Ap	Upper Field	83/129/7
#9	Ap	Upper Field	83/129/8
#10	Ap	Upper Field	83/129/9
#8	Ap	Upper Field	83/129/10
#11	Ap	Upper Field	83/129/11
#12	Ap	Lower Field	83/129/12
#16	Ap	Lower Field	83/129/13
Prehistoric Surface Collection		Upper Field	83/129/14
Prehistoric Surface Collection		Lower Field	83/129/15
Historic Surface Collection		Upper Field	83/129/16

Field 3 - Artifact Summary

Totals		General Artifact Inventory
17	(1)	redware, glazed
10	(2)	redware, unglazed
11	(3)	whiteware, decorated
16	(4)	whiteware, undecorated
4	(5)	stoneware, decorated
2	(6)	stoneware, undecorated
2	(7)	porcelain, decorated
4	(8)	porcelain, undecorated
2	(9)	creamware
1	(10)	yelloware
11	(11)	pearlware, decorated
13	(12)	pearlware, undecorated
0	(13)	ironstone
Ceramic Total 93	(14)	
1	(15)	green bottle glass
0	(16)	blue bottle glass
7	(17)	brown bottle glass
1	(18)	clear bottle glass
0	(19)	glass, tableware
0	(20)	glass, storage
0	(21)	glass, milk
7	(22)	glass, misc.
Glass (Subsistence Function) Total 16	(23)	
0	(24)	lamp chimney
8	(25)	window glass
0	(26)	nail, staple
0	(27)	nail, wrought
0	(28)	nail, cut
0	(29)	nail, wire
0	(30)	nail, roofing
0	(31)	metal, architecture
0	(32)	metal, furniture
0	(33)	metal, household
0	(34)	metal, misc.
0	(35)	metal, tool
0	(36)	metal, arm
0	(37)	metal, screws
0	(38)	metal, wire
0	(39)	metal, sheet
0	(40)	unidentified metal fragments
1	(41)	nail fragments
Metal Total 1	(42)	
0	(43)	button/bead
12	(44)	other
0	(45)	plastic
1	(46)	pipes
9	(47)	brick
1	(48)	(oyster/clam)
22	(49)	aboriginal
Total Artifacts 163	(50)	

GENERAL ARTIFACT INVENTORY

Site No. _____ Site Name Field #3

These are keyed to provenience numbers list

			Accession No.	83/129/1	83/129/2	83/129/3	83/129/4	83/129/5	83/129/6	83/129/7	83/129/8	83/129/9	83/129/10	83/129/11	83/129/12	83/129/14	83/129/15	
Ceramics	Redwr	Glzd		2		1						2						(1)
		Ungl				2			1				1					(2)
	White	Deco		1														(3)
		Undc		3		3		1	3		1		1					(4)
	Stone	Deco																(5)
		Undc																(6)
	Prcln	Deco																(7)
		Undc																(8)
	Creamware				1											1		(9)
	Yellowware								1									(10)
	Prlwr	Deco			1				1	1		1		1				(11)
		Undc							1	2		4		1				(12)
	Ironstone																	(13)
	Total			6	2	6	—	1	7	3	1	7	2	2	1	—		(14)
Glass	Bottle	Green																(15)
		Blue																(16)
		Brown							4									(17)
		Clear																(18)
	Tableware																	(19)
	Storage																	(20)
	Milk Glass																	(21)
	Misc.								1	1			2	2				(22)
	Total			—	—	—	—	—	5	1	—	—	2	2	—	—		(23)
	Lamp Chimney																	(24)
	Window			1	1						3			2				(25)
Nails	Staple																	(26)
	Wrgt																	(27)
	Cut																	(28)
	Wire																	(29)
	Roofing																	(30)
Metal Other	Architecture																	(31)
	Furniture																	(32)
	Household																	(33)
	Misc.																	(34)
	Tool																	(35)
	Arms																	(36)
	Screws																	(37)
	Wire																	(38)
	Sheet																	(39)
	Unid Metal Fr																	(40)
	Nail Frags			1														(41)
	Total			1	—	—	—	—	—	—	—	—	—	—	—	—		(42)
Button/Bead																		(43)
Other				2		2			2	4		2						(44)
Plastic																		(45)
Pipes																		(46)
Brick				2			2	1	2			2						(47)
Oyster/Clam													1					(48)
Aboriginal						2				1						9	10	(49)
Total				12	3	10	2	2	16	9	4	11	5	6	1	9	10	(50)

GENERAL ARTIFACT INVENTORY

Site No. _____ Site Name Field #3

These are keyed to provenience numbers list

			Accession No. 43/20/14														
Ceramics	Redwr	Glzd	12														(1)
		Ungl	6														(2)
	White	Deco	10														(3)
		Undc	4														(4)
	Stone	Deco	4														(5)
		Undc	2														(6)
	Prcln	Deco	2														(7)
		Undc	4														(8)
	Creamware																(9)
	Yelloware																(10)
	Prlwr	Deco	6														(11)
		Undc	5														(12)
	Ironstone																(13)
	Total		55														(14)
Glass	Bottle	Green	1														(15)
		Blue															(16)
		Brown	3														(17)
		Clear	1														(18)
	Tableware																(19)
	Storage																(20)
	Milk Glass																(21)
	Misc.		1														(22)
	Total		6														(23)
	Lamp Chimney																(24)
	Window		1														(25)
Nails	Staple																(26)
	Wrgt																(27)
	Cut																(28)
	Wire																(29)
	Roofing																(30)
Metal Other	Architecture																(31)
	Furniture																(32)
	Household																(33)
	Misc.																(34)
	Tool																(35)
	Arms																(36)
	Screws																(37)
	Wire																(38)
	Sheet																(39)
	Unid Metal Fr																(40)
	Nail Frags																(41)
	Total		—														(42)
Button/Bead																	(43)
Other																	(44)
Plastic																	(45)
Pipes			1														(46)
Brick																	(47)
Oyster/Clam																	(48)
Aboriginal																	(49)
Total			63														(50)

TABLE V-1

FIELD 3

Artifact Tabulation by Ware Type
Surface Collection Only

Refined White Earthenware	Whiteware	Pearlware	Creamware
Transfer Printed	0	0	0
Hand Painted	2	0	0
Minimally Decorated	0	2	0
Undecorated	5	3	0
Totals	7	5	0

Porcelain	2
Yellow Ware	0
Coarse Stoneware	4
Coarse Earthenware	15

TABLE V-2

FIELD 3

Artifact Tabulation by Ware Type and Strata
Shovel Tests Only

Shovel Test 1, Ap horizon

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	1	0	0	Porcelain	0
Hand Painted	0	0	0	Refined Redware	0
Minimally Decorated	0	0	0	Refined Stoneware	0
Undecorated	3	0	0	Yellow Ware	0
Decalcomania	0	0	0	Coarse Stoneware	0
Total	4	0	0	Coarse Earthenware	2

Shovel Test 1, Zone 11

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	0	0	0	Porcelain	0
Hand Painted	0	1	0	Refined Redware	0
Minimally Decorated	0	0	0	Refined Stoneware	0
Undecorated	0	0	1	Yellow Ware	0
Decalcomania	0	0	0	Coarse Stoneware	0
Total	0	1	1	Coarse Earthenware	0

Shovel Test 2, Ap horizon

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	0	0	0	Porcelain	0
Hand Painted	0	0	0	Refined Redware	0
Minimally Decorated	0	0	0	Refined Stoneware	0
Undecorated	3	0	0	Yellow Ware	0
Decalcomania	0	0	0	Coarse Stoneware	0
Total	3	0	0	Coarse Earthenware	2

Shovel Test 4

No ceramics
Two brick fragments

Shovel Test 5

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	0	0	0	Porcelain	0
Hand Painted	0	0	0	Refined Redware	0
Minimally Decorated	0	0	0	Refined Stoneware	0
Undecorated	1	0	0	Yellow Ware	0
Decalcomania	0	0	0	Coarse Stoneware	0
Total	1	0	0	Coarse Earthenware	0

Shovel Test 6, Ap horizon

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	0	0	0	Porcelain	0
Hand Painted	0	0	0	Refined Redware	0
Minimally Decorated	0	1	0	Refined Stoneware	0
Undecorated	3	1	0	Yellow Ware	1
Decalcomania	0	0	0	Coarse Stoneware	0
Total	3	2	0	Coarse Earthenware	1

Shovel Test 7, Ap horizon

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	0	0	0	Porcelain	0
Hand Painted	0	0	0	Refined Redware	0
Minimally Decorated	0	1	0	Refined Stoneware	0
Undecorated	0	2	0	Yellow Ware	0
Decalcomania	0	0	0	Coarse Stoneware	0
Total	0	3	0	Coarse Earthenware	0

Shovel Test 9

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	0	0	0	Porcelain	0
Hand Painted	0	0	0	Refined Redware	0
Minimally Decorated	0	0	0	Refined Stoneware	0
Undecorated	1	0	0	Yellow Ware	0
Decalcomania	0	0	0	Coarse Stoneware	0
Total	1	0	0	Coarse Earthenware	0

Shovel Test 10

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	0	0	0	Porcelain	0
Hand Painted	0	0	0	Refined Redware	0
Minimally Decorated	0	1	0	Refined Stoneware	0
Undecorated	0	4	0	Yellow Ware	0
Decalcomania	0	0	0	Coarse Stoneware	0
Total	0	5	0	Coarse Earthenware	2

Shovel Test 8, Ap horizon

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	0	0	0	Porcelain	0
Hand Painted	0	0	0	Refined Redware	0
Minimally Decorated	0	0	0	Refined Stoneware	0
Undecorated	1	0	0	Yellow Ware	0
Decalcomania	0	0	0	Coarse Stoneware	0
Total	1	0	0	Coarse Earthenware	0

Shovel Test 11, Ap horizon

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	0	1	0	Porcelain	0
Hand Painted	0	0	0	Refined Redware	0
Minimally Decorated	0	0	0	Refined Stoneware	0
Undecorated	0	1	0	Yellow Ware	0
Decalcomania	0	0	0	Coarse Stoneware	0
Total	0	2	0	Coarse Earthenware	0

Shovel Test 16, Ap horizon

Refined White Earthenware	Whiteware	Pearlware	Creamware		
Transfer Printed	0	0	0	Porcelain	0
Hand Painted	0	0	0	Refined Redware	0
Minimally Decorated	0	0	0	Refined Stoneware	0
Undecorated	0	1	0	Yellow Ware	0
Decalcomania	0	0	0	Coarse Stoneware	0
Total	0	1	0	Coarse Earthenware	0

APPENDIX VI

ARTIFACT PROVENIENCE, ACCESSION LIST AND FINAL INVENTORY, FIELD 4

Field 4

Provenience and Accession List

Test Squares	5'by5' Units	Acc. No.:
A	Ap	83/130/1
B	Ap	83/130/2
B	Ap 2'by2'Extension	83/130/3
C	Ap	83/130/4
D	Ap	83/130/5
E	Ap	83/130/6
F	Ap	83/130/7
F	Base of Ap Feature #2	
	Mapped Artifacts #'s 1-6	
	#1	83/130/81
	#2	83/130/82
	#3	83/130/83
	#4	83/130/84
	#5	83/130/85
	#6	83/130/86
G	Ap 10% sample	83/130/9
H	Ap 10% sample	83/130/10
I	Ap 10% sample	83/130/11
Shovel Tests	2'by2' Units	
#1	Ap	83/130/12
#2	Ap	83/130/13
#3	Ap	83/130/14
#4	Ap	83/130/15
#5	Ap	83/130/16
#5	Mottled Zone at Base of Ap	83/130/17
#5	Disturbance in Subsoil	83/130/18
#6	Ap	83/130/19
#7	Ap	83/130/20
#8	Ap	83/130/21
#9	Ap	83/130/22
#10	Ap	83/130/23
#11	Ap	83/130/24

Field 4
Provenience and Accession List for Bone

Test Squares	5'by5'Units	Acc. No.:
A	Ap	83/130/1
E	Ap	83/130/6
F	Ap	83/130/7
F	Base of Ap Feature #2	83/130/86 (Mapped Artifact #6)
G	Ap	83/130/9
Shovel Tests	2'by2'Units	
#4	Ap	83/130/15
#5	Mottled zone at Base of Ap	83/130/17
#5	Disturbance in Subsoil	83/130/18
#8	Ap	83/130/21
#11	Ap	83/130/24

Field 4 - Artifact Summary

Totals		General Artifact Inventory
460	(1)	redware
105	(2)	redware, unglazed
104	(3)	whiteware, decorated
237	(4)	whiteware, undecorated
0	(5)	stoneware, decorated
3	(6)	stoneware, undecorated
2	(7)	porcelain, decorated
4	(8)	porcelain, undecorated
82	(9)	creamware
34	(10)	yelloware
230	(11)	pearlware, decorated
443	(12)	pearlware, undecorated
0	(13)	ironstone
Ceramic Total 1,704	(14)	
18	(15)	green bottle glass
4	(16)	blue bottle glass
11	(17)	brown bottle glass
6	(18)	clear bottle glass
5	(19)	glass, tableware
25	(20)	glass, storage
0	(21)	glass, milk
Glass (Subsistence Function) Total 64	(22)	glass, misc.
133	(23)	
0	(24)	lamp chimney
454	(25)	window
0	(26)	nail, staple
14	(27)	nail, wrought
54	(28)	nail, cut
2	(29)	nail, wire
0	(30)	nail, roofing
0	(31)	metal, architecture
0	(32)	metal, furniture
4	(33)	metal, household
9	(34)	metal, misc.
0	(35)	metal, tool
0	(36)	metal, arms
0	(37)	metal, screws
0	(38)	metal, wire
0	(39)	metal, sheet
1	(40)	unidentified metal fragments
17	(41)	nail fragments
Metal Total 101	(42)	
2	(43)	button/bead
376	(44)	other
0	(45)	plastic
44	(46)	pipes
213	(47)	brick
20	(48)	oyster/clam
17	(49)	aboriginal
Artifact Total 3,064	(50)	

GENERAL ARTIFACT INVENTORY

Site No. _____ Site Name Reid #4

These are keyed to provenience numbers list

Accession No.			83/130/1	83/130/2	83/130/3	83/130/4	83/130/5	83/130/6	83/130/7	83/130/8	83/130/82	83/130/83	83/130/84	83/130/85	83/130/86	83/130/9	
Ceramics	Redwr	Glzd		121	13	24	121	28	11	1	1		1	1		7	(1)
		Ungl		6	1	3	59		4								(2)
	White	Deco	13	22	2	7	18	5	6							2	(3)
		Undc	29	43	7	20	50	19	3							1	(4)
	Stone	Deco															(5)
		Undc		1			1										(6)
	Prcln	Deco															(7)
		Undc		2		1			1								(8)
	Creamware		11	18		7	26										(9)
	Yellowware			6	1	1	10	3	1							1	(10)
	Prlwr	Deco	35	34	5	8	44	16	12							4	(11)
		Undc	74	77	15	36	41	40	24							15	(12)
	Ironstone																(13)
	Total		162	330	44	107	370	111	62	1	1	—	1	1	—	30	(14)
Glass	Bottle	Green	1	1		1	5		3								(15)
		Blue		1			2		1								(16)
		Brown	5					1								1	(17)
		Clear				1	2										(18)
	Tableware				1		2		1								(19)
	Storage		4	1		3	7	2									(20)
	Milk Glass																(21)
	Misc.		4	30			6										(22)
	Total		14	33	1	5	24	3	5	—	—	—	—	—	—	1	(23)
	Lamp Chimney																(24)
	Window		46	130	19	11	120	21	8							4	(25)
Nails	Staple																(26)
	Wrgt			13				1									(27)
	Cut			7			14	6	1							2	(28)
	Wire						2										(29)
	Roofing																(30)
Metal Other	Architecture																(31)
	Furniture																(32)
	Household						3										(33)
	Misc.			1			3										(34)
	Tool																(35)
	Arms																(36)
	Screws																(37)
	Wire																(38)
	Sheet																(39)
	Unid Metal Fr																(40)
	Nail Frags			15													(41)
	Total		—	36	—	—	22	7	1	—	—	—	—	—	—	2	(42)
Button/Bead									2								(43)
Other			20	76	5	9	61	31	17						4	8	(44)
Plastic																	(45)
Pipes			3	8	1		6	2	5								(46)
Brick			37	41	4	19	28	19				1				3	(47)
Oyster/Clam			2					3								1	(48)
Aboriginal			5	2				3	1								(49)
Total			289	656	74	151	631	200	101	1	1	1	1	1	4	49	(50)

GENERAL ARTIFACT INVENTORY

Site No. _____ Site Name Field #4

These are keyed to provenience numbers list

Accession No.			83/30/10	83/30/11	83/30/12	83/30/13	83/30/14	83/30/15	83/30/16	83/30/17	83/30/18	83/30/19	83/30/20	83/30/21	83/30/22	83/30/23	
Ceramics	Redwr	Glzd	9	5		2	10	28	25	9		2	4	10	12	4	(1)
		Ungl	3			1	3	5		2		5			6	4	(2)
	White	Deco		4				12	4					3	2	1	(3)
		Undc	8	4			3	18	3					5	7	3	(4)
	Stone	Deco															(5)
		Undc	1														(6)
	Prcln	Deco	1						1								(7)
		Undc															(8)
	Creamware		2	2			1	8	4					2		1	(9)
	Yellowware						7	2									(10)
	Prlwr	Deco	19	3		1	6	12	12	5		3	1	3	2		(11)
		Undc	10			1	9	19	25	14		2	3	1	21	4	(12)
	Ironstone																(13)
	Total		53	18	—	5	39	104	74	30	—	12	8	24	50	17	(14)
Glass	Bottle	Green						2	2				1		2		(15)
		Blue															(16)
		Brown					2	1	1								(17)
		Clear						3									(18)
	Tableware									1							(19)
	Storage												1		2	2	(20)
	Milk Glass																(21)
	Misc.		1			1	1	9		1				9			(22)
	Total		1		—	1	3	15	3	2	—	—	2	9	4	2	(23)
	Lamp Chimney																(24)
	Window		1	1	1		9	47	15	1		2	1	5	2	1	(25)
Nails	Staple																(26)
	Wrgt																(27)
	Cut		2	1			3	3	5			1		3		1	(28)
	Wire																(29)
	Roofing																(30)
Metal Other	Architecture																(31)
	Furniture																(32)
	Household							1									(33)
	Misc.		4					1									(34)
	Tool																(35)
	Arms																(36)
	Screws																(37)
	Wire																(38)
	Sheet																(39)
	Unid Metal Fr			1													(40)
	Nail Frags		1											1			(41)
	Total		7	2	—	—	3	5	5	—	—	1	—	4	—	1	(42)
Button/Bead																	(43)
Other			2				5	37	42		1		6	17	8	4	(44)
Plastic																	(45)
Pipes			7	3			3	1	2			1					(46)
Brick			2	2				28	8	6			1	3	5		(47)
Oyster/Clam							3		2					8			(48)
Aboriginal						1		3						2			(49)
Total			73	26		7	65	240	151	39	1	16	18	72	69	25	(50)

GENERAL ARTIFACT INVENTORY

Site No. _____ Site Name Field #4

These are keyed to provenience numbers list

			Accession No. 83/130/44														
Ceramics	Redwr	Glzd	11														(1)
		Ungl	3														(2)
	White	Deco	3														(3)
		Undc	14														(4)
	Stone	Deco															(5)
		Undc															(6)
	Prcln	Deco															(7)
		Undc															(8)
	Creamware																(9)
	Yelloware		2														(10)
	Prlwr	Deco	5														(11)
		Undc	12														(12)
	Ironstone																(13)
	Total		50														(14)
Glass	Bottle	Green															(15)
		Blue															(16)
		Brown															(17)
		Clear															(18)
	Tableware																(19)
	Storage		3														(20)
	Milk Glass																(21)
	Misc.		2														(22)
	Total		5														(23)
	Lamp Chimney																(24)
	Window		9														(25)
Nails	Staple																(26)
	Wrgt																(27)
	Cut		5														(28)
	Wire																(29)
	Roofing																(30)
Metal Other	Architecture																(31)
	Furniture																(32)
	Household																(33)
	Misc.																(34)
	Tool																(35)
	Arms																(36)
	Screws																(37)
	Wire																(38)
	Sheet																(39)
	Unid Metal Fr																(40)
	Nail Frags																(41)
	Total		5														(42)
Button/Bead																	(43)
Other			23														(44)
Plastic																	(45)
Pipes			2														(46)
Brick			6														(47)
Oyster/Clam			1														(48)
Aboriginal																	(49)
Total			101														(50)

TABLE VI-1

FIELD 4

Prehistoric Artifact Tabulation by Excavation Unit

Shovel Test #2 - 1 quartz flake

Shovel Test #4 - 2 quartz flakes, 1 quartz chunk

Shovel Test #8 - 2 quartz flakes

Test Square A - 3 quartz flakes, 1 chalcedony flake, 1 quartz shatter fragment

Tets Square B - 1 quartz primary decortication flake, proximal fragment, 1 jasper secondary decortication flake, thermally altered

Test Square E - 2 quartz flakes, 1 quartz shatter fragment

Test Square F - 1 quartz flake

TABLE VI-2

FIELD 4

Distribution of Whiteware, Pearlware and Creamware by Excavation Unit

	Total
Shovel Test 1	
Whiteware - 0, Pearlware - 0, Creamware - 0	0
Shovel Test 2	
Whiteware - 0, Pearlware - 3, Creamware - 0	3
Shovel Test 3	
Whiteware - 7, Pearlware - 14, Creamware - 1	22
Shovel Test 4	
Whiteware - 30, Pearlware - 31, Creamware - 8	69
Shovel Test 5	
Whiteware - 7, Pearlware - 57, Creamware - 4	68
Shovel Test 6	
Whiteware - 0, Pearlware - 5, Creamware - 0	5
Shovel Test 7	
Whiteware - 0, Pearlware - 3, Creamware - 0	3
Shovel Test 8	
Whiteware - 8, Pearlware - 4, Creamware - 2	44
Shovel Test 9	
Whiteware - 9, Pearlware - 22, Creamware - 0	31
Shovel Test 10	
Whiteware - 6, Pearlware - 4, Creamware - 1	11
Shovel Test 11	
Whiteware - 19, Pearlware - 16, Creamware - 0	35

TABLE VI-3

FIELD 4

Distribution of Coarse Red Earthenware by Excavation Unit

Shovel Test 1 - 0

Shovel Test 2 - 3 sherds

Shovel Test 3 - 13 sherds

Shovel Test 4 - 33 sherds and 32 fragments

Shovel Test 5 - 36 sherds and 33 fragments

Shovel Test 6 - 7 sherds

Shovel Test 7 - 4 sherds

Shovel Test 8 - 10 sherds and 11 fragments

Shovel Test 9 - 18 sherds and 6 fragments

Shovel Test 10 - 8 sherds and 2 fragments

Shovel Test 11 - 14 sherds and 7 fragments

TABLE VI-4

FIELD 4

Pipe Bowls and Stem Fragments by Excavation Unit

Shovel Tests	Bowl Fragments	Stems
1	0	0
2	0	0
3	1 undecorated 1 decorated bowl and stem fragment	1, embossed, motif indeterminate
4	1 bowl and stem, fluted embossing	0
5	1 undecorated 1 decorated, fluted embossing	0
6	0	1
7	0	0
8	0	0
9	0	0
10	0	0
11	2 undecorated	0
Totals	4 undecorated 3 decorated	1 decorated 1 undecorated

Test Squares	Bowl Fragments	Stems
A	2 undecorated	1
B	2 fluted and incised 3 undecorated	4 (includes 2'by2' extension)
C	0	0
D	2 fluted embossing 3 undecorated	1
E	1 undecorated	1
F	1 undecorated 3 fluted embossing	1 embossed, motif indeterminate
G	0	0
H	1 undecorated	6
I	2 undecorated	1
Totals	13 undecorated 7 decorated	14 undecorated 1 decorated

TABLE VI-5

FIELD 4

Distribution of Nails and Nail Fragments by Excavation Unit

Test Squares	Shovel Tests
A - 2 complete cut nails	1 - 0
2 cut nail fragments	2 - 2 cut nails
B - 4 cut nails	3 - 3 cut nail fragments
18 cut nail fragments	4 - 3 cut nails fragments
1 wrought nail	5 - 5 cut nail fragments
2 wrought nail fragments	6 - 1 cut nail fragment
C - 9 cut nail fragments	7 - 0
D - 2 cut nails	8 - 3 cut nail fragments
12 cut nail fragments	1 unidentified nail fragment
E - 1 wrought nail	9 - 0
6 cut nail fragments	10 - 1 cut nail fragment
F - 1 cut nail fragment	11 - 5 cut nail fragments
G - 2 cut nail fragments	
H - 2 cut nails	
2 unidentified nail fragments	
I - 1 cut nail	

TABLE VI-6

FIELD 4

Distribution of Brick and Brick Fragments by Excavation Unit

Test Squares	Shovel Tests
A - 36 red brick fragments	1 - 0
1 red brick fragment, salt glazed	2 - 0
B - 6 large fragments	3 - 0
35 brick fragments	4 - 28 brick fragments
C - 19 brick fragments	6 - 0
D - 27 brick fragments	7 - 1 brick fragment
1 glazed brick fragment	8 - 0
E - 19 brick fragments	9 - 5 brick fragments
F - 1 brick fragment (Artifact #4)	10 - 0
G - 3 brick fragments	11 - 5 brick fragments
H - 2 brick fragments	1 glazed brick fragment
I - 2 brick fragments	

APPENDIX VII

ARTIFACT PROVENIENCE AND

FINAL INVENTORY, HOLLINGSWORTH PROPERTY

Hollingsworth Property
Provenience and Accession List

North Side

Shovel Tests	2'by2' Units	Acc No.:
#1	A Horizon, Level 1	83/131/1
#4	A Horizon, Level 1	83/131/2
#9	Ab Horizon	83/131/3
#10	A Horizon, Level 1	83/131/4

South Side

#4	Fill/0-1' Below Surface	83/131/5
#1	Fill/0-1' Below Surface	83/131/6

Hollingsworth Property - Artifact Summary

	Total		General Artifact Inventory
	0	(1)	redware, glazed
	0	(2)	redware, unglazed
	0	(3)	whiteware, decorated
	3	(4)	whiteware, undecorated
	0	(5)	stoneware, decorated
	0	(6)	stoneware, undecorated
	0	(7)	porcelain, decorated
	0	(8)	porcelain, undecorated
	0	(9)	creamware
	0	(10)	yelloware
	0	(11)	pearlware, decorated
	0	(12)	pearlware, undecorated
	0	(13)	ironstone
Ceramic Total	3	(14)	
	0	(15)	green bottle glass
	0	(16)	blue bottle glass
	1	(17)	brown bottle glass
	0	(18)	clear bottle glass
	0	(19)	glass, tableware
	1	(20)	glass, storage
	0	(21)	glass, milk
	10	(22)	glass, misc.
Glass (Subsistence Function) Total	12	(23)	
	0	(24)	lamp chimney
	1	(25)	window glass
	0	(26)	nail, staple
	0	(27)	nail, wrought
	0	(28)	nail, cut
	1	(29)	nail, wire
	0	(30)	nail, roofing
	0	(31)	metal, architecture
	0	(32)	metal, furniture
	0	(33)	metal, household
	0	(34)	metal, misc.
	0	(35)	metal, tool
	0	(36)	metal, arms
	0	(37)	metal, screws
	0	(38)	metal, wire
	0	(39)	metal sheet
	0	(40)	unidentified metal fragments
	0	(41)	nail fragments
Metal Total	1	(42)	
	0	(43)	button/bead
	0	(44)	other
	0	(45)	plastic
	0	(46)	pipes
	1	(47)	brick
	1	(48)	oyster/clam
	1	(49)	aboriginal
Artifact Total	20	(50)	

Sheet 1 of 1

GENERAL ARTIFACT INVENTORY

Site No. _____ Site Name Hollingsworth Property

These are keyed to provenience numbers list

			Accession No.	83/31/1	83/31/2	83/31/3	83/31/4	83/31/5	83/31/6									
Ceramics	Redwr	Glzd																(1)
		Ungl																(2)
	White	Deco																(3)
		Undc						1	2									(4)
	Stone	Deco																(5)
		Undc																(6)
	Prcln	Deco																(7)
		Undc																(8)
	Creamware																	(9)
	Yelloware																	(10)
	Prlwr	Deco																(11)
		Undc																(12)
	Ironstone																	(13)
	Total			—	—	—	—	1	2									(14)
Glass	Bottle	Green																(15)
		Blue																(16)
		Brown						1										(17)
		Clear																(18)
	Tableware																	(19)
	Storage							1										(20)
	Milk Glass																	(21)
	Misc.		3				3	3	1									(22)
	Total		3	—	—	3	5	1										(23)
	Lamp Chimney																	(24)
	Window					1												(25)
Nails	Staple																	(26)
	Wrgt																	(27)
	Cut																	(28)
	Wire								1									(29)
	Roofing																	(30)
Metal / Other	Architecture																	(31)
	Furniture																	(32)
	Household																	(33)
	Misc.																	(34)
	Tool																	(35)
	Arms																	(36)
	Screws																	(37)
	Wire																	(38)
	Sheet																	(39)
	Unid Metal Fr																	(40)
	Nail Frags																	(41)
	Total		—	—	—	—	—	1										(42)
Button/Bead																		(43)
Other																		(44)
Plastic																		(45)
Pipes																		(46)
Brick								1										(47)
Oyster/Clam							1											(48)
Aboriginal				1														(49)
Total			3	1	1	3	7	5										(50)

APPENDIX VIII

NATIONAL REGISTER OF HISTORIC PLACES

INVENTORY-NOMINATION FORM FOR FIELD 4, TENANCY SITE

AND STATE CRS FORMS

NPS Form 10-900
(3-82)

OMB No. 1024-0018
Exp. 10-31-84

United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received
date entered

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic Tenancy Site, H. Grant Property (7NC-B-6)

and/or common Aletta Laird Downs Property

2. Location

street & number Located in NW quadrant of intersection of Rte. 48 Lancaster Pike, and Rt. 141, Centre Road — X not for publication

city, town Wilmington — X vicinity of

state Delaware code 10 county New Castle code 003

3. Classification

Category	Ownership	Status	Present Use	
___ district	___ public	___ occupied	X agriculture	___ museum
___ building(s)	X private	___ unoccupied	___ commercial	___ park
___ structure	___ both	___ work in progress	___ educational	___ private residence
X site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	X in process	X yes: restricted	___ government	___ scientific
	___ being considered	___ yes: unrestricted	___ industrial	___ transportation
		___ no	___ military	___ other:

4. Owner of Property

name Mrs. Aletta Laird Downs

street & number Rte. 48 Lancaster Pike & 141 Centre Road

city, town Wilmington — X vicinity of — state Delaware

5. Location of Legal Description

courthouse, registry of deeds, etc. Register of Deeds New Castle County Courthouse

street & number City-County Building

city, town Wilmington — state Delaware

6. Representation in Existing Surveys

title William P. Barse 1984 Phase I & II Archeological Investigations of the Rt. 141 Corridor, New Castle County, DE. Delaware Department of Transportation Archeology Series 33. Dover, DE. — has this property been determined eligible? ___ yes X no

date March 1983 — ___ federal X state ___ county ___ local

depository for survey records Del. Department of Transportation

city, town Dover — state DE

7. Description

Condition		Check one	Check one
___ excellent	___ deteriorated	_X_ unaltered	_X_ original site
_X_ good	___ ruins	___ altered	___ moved date ca. 1843
___ fair	_X_ unexposed		

Describe the present and original (if known) physical appearance

The H. Grant tenancy site was identified as the result of a reconnaissance survey, and additional data was gathered during an intensive survey of this location. This assessment was carried out for the Delaware Department of Transportation to fulfill their obligations under Section 106 of the National Historic Preservation Act to evaluate the effects of the proposed improvements to Delaware Route 141 on significant or potentially significant cultural resources, as defined by the National Register of Historic Places (36 CFR 1202). The site is located just to the north of the Lancaster Pike (Delaware Route 48) on the east side of Little Mill Creek and west of Route 141.

The significant component of the site is a nineteenth century occupation which appears to be a tenancy associated with the larger plantation complex identified on maps and in deed research as belonging to W. Tatnall, Henry Grant, John Peoples, and others. A prehistoric component, consisting of a chipping scatter is also present, but is not regarded as significant.

The site is located adjacnt to an intermittent spring run which forms the northern boundary of the site, at the edge of the rather steep-sided valley of Little Mill Creek. The boundaries of the site were determined by the limits of artifact scatter observed in the test units on the east and west, and by the limits of construction disturbance for the present alignment of Lancaster Pike on the south.

It is not entirely clear where the exact position of the 19th century alignment of the Lancaster Pike is, but it is presumed to be beneath the present paved alignment (or destroyed by the construction of the present alignment). Other than highway improvements, the land use of the surrounding area is in substantially the same condition as during the site occupation: agriculture. The site is presently in pasture, and the thickness of the root mat suggests that it has been so for some time. However, a plow zone is present throughout the site, suggesting that the site area was cultivated after it ceased to function as a domestic residence.

Eleven 50 cm. shovel tests were distributed across the site area during reconnaissance survey to identify the limits of the artifact scatter and to evaluate the likelihood for sub-plow-zone features. Some of the latter, including a segment of structure foundation, (Square F) were identified in the placement of five foot by five foot test squares during the site testing program. A number of post-molds were identified suggesting the presence of support features and spatial distribution data. The variety of functional classes included in the artifact inventory support the attribution of this site as a residential site, and the integrity of the sub-plow-zone features suggests that significant data are present. The fact that the site has been plowed represents only a minor limitation in the data base, since the ability of plowed historic sites to retain spatial patterning of artifact distributions is clearly established by field research.

8. Significance

Period	Areas of Significance—Check and justify below			
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion
___ 1400–1499	___ archeology-historic	___ conservation	___ law	___ science
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture
___ 1600–1699	___ architecture	___ education	___ military	___ social/ humanitarian
___ 1700–1799	___ art	___ engineering	___ music	___ theater
_X_ 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	___ transportation
_X_ 1900–	___ communications	___ industry	___ politics/government	___ other (specify)
		___ invention		

Specific dates **Builder/Architect**

Statement of Significance (in one paragraph)

The H. Grant Tenancy Site (7NC-B-6) is significant because it is likely to contribute data important in the understanding of the history of this area and the surrounding region. Test excavations revealed that artifact distribution data are present in the plow zone, and that remains of structures and other facilities are present undisturbed below the plow zone. This will allow the characterization of spatial patterning for this common but uninvestigated site type. The following discussion provides a context within which to evaluate the research values of the site.

Delaware was settled by the Dutch in 1630, with the establishment of a whaling station near Lewes. This was soon destroyed by the Indians. The Swedes settled in the vicinity of Wilmington with the establishment of Fort Christina in 1638. This was captured by the Dutch in 1651. Settlement was characterized by scattered farmsteads along the major drainages, the Delaware River, White Clay Creek and Christina Creek (Weslager 1961).

The English obtained control of Delaware in 1664, which was followed by the granting or proprietary rights to Willian Penn in 1682. This placed Delaware under control of Philadelphia, both economically and politically. Although subsistence farming continued, commercial centers were beginning to be established to channel goods to Philadelphia. Such centers were Christina, Stanton and Ogletown. Throughout the 18th century, the increasing population stimulated the development of new towns and the development of more effective communication networks. This was especially apparent after the development of the towns of Baltimore and Annapolis.

The 19th century saw the development of canals and railroads to accommodate the commercial trade between these towns. The Philadelphia, Wilmington, and Baltimore Railroad was begun in 1839. However, the road system of Delaware lagged considerably behind the railroads as a means of transportation. Settlement in the 19th century was characterized by the large plantations and associated small tenant farms, as well as with the urban areas associated with the commercial towns.

A gradual change in the role of the farm occurred from the 18th through to the 19th centuries. During the 18th century, farming was primarily oriented to the production of goods for subsistence, a pattern that changed gradually to one involving production of goods for consumption on the growing national market. This change ties in with the growing industrial and urban centers in the Philadelphia-Wilmington-Baltimore corridor that was under way in the early 19th century noted above. While this scenario is known on a large scale, how the changing economic framework of the area affected the local household in terms of the organization of material culture is unknown, and accessible only archeologically. One would expect to witness a changing access to goods and the development of differing patterns of consumption based on economic status, as well as a growing diversity in patterns of land usage. Questions concerning what percentage of the population remained on a subsustence level as opposed to those engaged in production for market consumption are unknown, and would be most accessible through archeological investigations.

Deed research revealed that this location was consistently part of a sizeable plantation, and map research indicates that the principal residence of the owners is in the

location presently occupied by the owner, facing Centre Road (Rt. 141). A structure does appear at the tenancy site on one of the several maps that cover the area and show dwellings, the Eckel Map of 1860. The variety and distribution of the artifacts, as well as the subsurface features, suggest that this site was a domestic site, and since the principal residence on the property is already accounted for, a tenancy is implied.

A number of specific research questions can be addressed using the data present at 7NC-B-6:

1. Does the spatial organization of the structures and other facilities conform to a "typical" plan, as identified by other research (Heite 1984).

2. Does the realized plan resemble that common to owner-occupant sites, which can be documented to some degree from extant structures at such sites, or does it reflect a plan peculiar to the tenant situation, and retrievable largely from archaeological data? (The plan at this site can be identified as conforming or variant; comparison to other research at other tenant sites will be needed to confirm a specific pattern, i.e. Thomas 1983).

3. To what degree does the artifact assemblage express the lower economic status of a tenant, in comparison to owner-occupied sites? Are those patterns in the artifact assemblages, specifically in the distribution of cost-sensitive decorative attributes on whiteware, peculiar to tenants and distinguishable from other socio-economic groups?

Data developed at the H. Grant tenancy can establish base-line evaluations of patterns for this type of site to be compared with future research at other tenant houses and owner occupied site. Current research by DelDOT in downtown Wilmington can be used for comparisons between rural tenants and urban dwellers. In summary, testing has demonstrated that data are present in usable contexts at the H. Grant Tenancy Site to address a number of pertinent research questions current in historical archaeology.

9. Major Bibliographical References

Heite, Louise B. 1984 Archaeological Investigations at the Mudstone Branch Site, Saulsbury Road, Dover, Kent County, Delaware. Delaware Department of Transportation, Division of Highways, Location and Environmental Studies Office, Dover.
South, Stanley 1977 Method and Theory in Historical Archaeology. Academic Press, New York.
Thomas, Ronald A. 1983 Archaeological Data Recovery at an Eighteenth Century Farmstead in Lewes, Sussex County, Delaware. Mid-Atlantic Archaeological Research, Inc., Newark, Delaware
Weslager, C.A. 1961 Dutch Explorers, Traders and Settlers in the Delaware Valley. Philadelphi
Eckel, Henry 1860 Map of Wilmington and Brandywine RR

10. Geographical Data

Acreage of nominated property approximately 1/3 acre

Quadrangle name Wilmington North, Del.-PA **Quadrangle scale** 1:24,000

UTM References

	Zone	Easting	Northing
A	18	448040	4401210
B			
C			
D			
E			
F			
G			
H			

Verbal boundary description and justification The boundaries and corners of the site are shown on the attached drawing. The UTM position of corner A was measured from the center of the highway bridge across Little Mill Creek on the Wilmington North Quadrangle Sheet (see attached map) and is accurate to plus or minus twenty meters. The UTM coordinates for the remaining corners were then measured on the DelDOT plan at a scale of one inch (~~continued~~ on attachment)

List all states and counties for properties overlapping state or county boundaries

state	code	county	code
state	code	county	code

11. Form Prepared By

name/title William P. Barse

organization Thunderbird Archeological Associates **date** 2/23/84

street & number Rte. 1, Box 1375 **telephone** 703-635-3860

city or town Front Royal **state** VA 22630

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

___ national ___ state ___ local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature

title **date**

For NPS use only

I hereby certify that this property is included in the National Register

date

Keeper of the National Register

Attest: **date**

Chief of Registration

GPO 894-795

equals twenty-five feet, but are really only as accurate as corner A. The attached drawing also shows grid points for the Delaware State Plane Coordinate System, from the DelDOT plan. The southern boundary ("A" to "E") of the site follows the northern right-of-way margin of the present alignment of the Lancaster Pike. It is expected that there would be road construction disturbance to the south of that line. The eastern boundary of the site ("E" to "D") marks the position where artifacts had fallen to near zero in the test pits. From corner "D", through "C", to "B", the northern boundary of the site follows the lowest points in the drainage swale, which forms a logical natural boundary. It is possible that some remains associated with the site might be located north of this boundary, but artifacts were falling off in this direction, and anything north of the swale would be outside the impact zone, as presently defined. The western boundary of the site ("B" to "A") is at a break point in the slope. From this line to the west, the ground slopes rather steeply toward the channel of Little Mill Creek, and it is projected that this area would not have been occupied.