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PHASE I AND PHASE II ARCHÆOLOGICAL SURVEYS AT

HURD WETLAND MITIGATION SITE

BY

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1. Description of the Project

This is a Phase I/II report of archæological survey in Duck Creek Hundred, Kent County, Delaware. The subject property is proposed for development as a wetland replacement in connection with the State Route 1 project.

The property is about a hundred acres of agricultural land, mostly poorly-drained Othello soils, south of Route 6 (Woodland Beach Road) on the head of Hawkey, or Hirons, Branch.

The Delaware Department of Transportation proposes to lower grades and erect earthen structures that will convert much of the property into wetlands.

Because this is a federal undertaking, the project is subject to Section 106 of the National Historic Preservation Act. In order to meet its obligations under the Act, the Department engaged Heite Consulting of Camden, Delaware, to conduct Phase I investigations.

Phase I fieldwork was accomplished primarily during July of 1994 by Edward Heite, assisted by Jason Brown. Phase II fieldwork began in September 1994, with the assistance of George Keeler.

Level and Style of the Field Investigation

This is a report of a Phase I survey, followed by a Phase II survey. The purpose of any Phase I survey is to identify all cultural resources that survive in the study area. It is not ordinarily the goal of a Phase I survey to assess significance.

Only complete excavation could identify all resources in any study area. A Phase I survey is a sampling exercise, designed to recover as much information as possible, within reason.

Phase I field strategies are designed to cover as much territory as possible, recovering small but meaningful samples from as many micro-environments as possible, in a cost-effective way.

The preferred Phase I strategy almost always is pedestrian survey of cultivated fields. Even if a site has not been plowed recently, it is usually cost-effective to cultivate the ground, rather than to use other, less satisfactory, methods of recovering a sample. From an archæological point of view, no sampling method can approach the efficiency of a walkover. There are only a few cases in rural Delaware where walkover surveys are not 100% effective, and these can be quickly identified. Most commonly, sites may be hidden from the pedestrian surveyor by wind or water erosion, which might include slope wash, alluvial flood plain deposits, or sand dunes. Unless these conditions exist, there is no justification to shovel-test plowed fields at the Phase I level.

Where pedestrian survey is not possible, the principal investigator must devise systems that will provide coverage, in keeping with accepted professional standards. Fortunately, there is extensive literature on the subject of survey techniques (King 1978).

The present Phase I survey employed both a pedestrian examination of plowed fields and shovel tests. The walkover survey covered all the areas where models predicted a high likelihood of finding sites. Shovel tests were employed only as far as necessary to verify assumptions about poorly-drained soils.

Evaluation is a function of Phase II survey. If a Phase I survey should produce information that can be used to determine significance, integrity, or boundaries, this information is treated as an unanticipated bonus. On rare occasions, Phase I results are so complete that a Phase II study is not required. This situation occurs at opposite ends of the spectrum: when sites are obviously not eligible, or when they are obviously eligible.

The Phase II requirement is defined as whatever is necessary to determine the significance of the identified resource, in terms of the National Register criteria. Based upon locational data generated in a Phase I survey, the Phase II project determines the extent, integrity, and significance of the resources. Methods used at the Phase II level are determined by the principal investigator in light of results from a Phase I survey.

PHYSICAL GEOGRAPHY AND ENVIRONMENT

The project area lies in the coastal plain of Delaware, near the western boundary of the coastal tide marshes. The soils belong to the Othello-Matapeake-Mattapex soil association, which is characterized by nearly level to sloping, poorly drained to well drained upland soils that have a moderately slowly permeable to moderately permeable subsoil, mainly of silty clay loam or silt loam (Soil Conservation Service 1971).

Othello soils, the dominant type in the project vicinity, are defined as a poorly drained type, which require drainage in order to be cultivated. Because it is difficult to build a septic system in this soil, it is not favored for residential development. Othello soils are uniformly grey, indicating long-term wetness.

Mattapex soils, which are also present, are moderately well drained, typically consisting of brown silt loam over coarser sandy loam layers. Where these soils occur in areas with high water tables, they respond well to such drainage techniques as ditching and tiling. In the project vicinity, most of the older farmhouses are sited on Mattapex soils or similar types.

On the east boundary of the project area is a small area mapped as Matapeake silt loam. These are deep, well-drained brown silty upland soils. They formed as a silty mantle over older sandy soils, and are regarded as well drained.

A very short distance to the east is Delaware's coastal marsh, a resource-rich area that the prevailing models (Custer 1986: 131, 156) for prehistoric base camps. These camps are expected on well-drained high ground close to salt marshes.

The vicinity is called Pumpkin Neck, or Severson Neck, which lies between Taylor Gut to the north and Hillyards Branch to the south. Hawkey, or Hirons, Branch rises at the south end of the property. It flows northeast into Quarter Gut, southwest of Woodland Beach (USGS 1966:52, 91, 99).

The site is relatively remote from Delaware's principal historic transportation arteries: Route 13 and the Delaware Rail Road lie to the west.

Route 9, a relatively new corridor, lies to the east. This highway, now reduced to "scenic" status, was created early in the twentieth century from a series of local roads that more or less connected with one another along the heads of tidal necks. It was originally paved through much of its length as a "nine-foot" road, with one lane concrete and the other lane gravelled. By paving half of each road, the Delaware highway agency was able to build twice the mileage for the same cost. Route 6, which passes along the north boundary of the property, was a nine-foot road, from Smyrna to Woodland Beach.

More convenient is water transport, provided by Duck Creek and Little Duck Creek (Leipsic River). Route 6, which forms the northern boundary of the site, was created to connect with a steamboat landing on Bombay Hook Island. During the later years of the nineteenth century and the early years of the present century, the project area was geographically well situated to enjoy the advantages of steamboat transportation.

Figure 1: Project location, from USGS Smyrna quadrangle, with prehistoric site sensitivity, as defined by Custer, superimposed. The project area is enclosed in dashed lines.

PREHISTORIC BACKGROUND

People arrived in the Delaware Valley near the end of the most recent (Wisconsin) glaciation. Glaciers entrapped so much water that the ocean lay fifty miles east of the present Sandy Hook, New Jersey. As the glaciers retreated and the ocean advanced, the project area's ecology changed. With changes in ecology and population came changes in land use, which are reflected in the cultural record.

Mammoths, musk ox, horses, caribou, and walrus provided food for dire wolf, short-faced bear, and other predators. Man was among the smaller competitors in the tundra food chain, but his skills compensated for his physical shortcomings. Nomadic people of this Paleo-Indian period

were among the most skilled makers of stone tools in the world. They would travel great distances to quarry the best flinty cobbles from which they made exquisite spearpoints, knives, and small tools.

Paleo - Indian hunting - gathering society lasted in the coastal plain until about 6,500 BC, when the Atlantic climate episode and the Archaic period of prehistory began. Northern hardwood forests had replaced the tundra, the ocean had risen, and the climate was warmer.

PREHISTORIC CHRONOLOGY
(After Custer 1986)

Dates	*Environmental Episode*	*Cultural Period*
8080 BC	Late Glacial	Paleo-Indian /Early Archaic
6540 BC	Pre-Boreal/Boreal	
	Atlantic	Middle Archaic
3110 BC	Sub-Boreal	Late Archaic
810 BC	Sub-Atlantic	Woodland I
AD 1000		Woodland II
AD 1600		Contact

Pleistocene megafauna were replaced by smaller game, which required different hunting techniques and tools. "Micro-band base camps" of this relatively arid period often are found on slight elevations above poorly-drained spots where game might have come to drink or feed. Even after the climate became wetter, people apparently continued to live on sand hills that formed near the basins.

Archaic people fashioned tools made of quartz, a material that is more available but less tractable than the flinty cryptocrystalline silicate materials that Paleo people had favored. Ground stone axes and other heavy tools appeared during this period.

By 3,000 BC, prehistoric society was decidedly different. Because people had stopped moving around so much, regional cultural differences began to appear in the artifact assemblages. Sedentary lifestyles ultimately led to horticulture, complex religious practices, and the accumulation of more, less portable, material goods. The last prehistoric period, the Woodland, is characterized by larger groups of people living together in villages, using pottery and other heavy or fragile goods that would have been difficult to move from place to place.

Woodland people tended to concentrate in more or less permanent settlements at places with abundant multiple resources, such as sites convenient to shellfish beds on the edges of salt marshes. These settlements, called "base camps," or villages, were generally occupied by one or a few extended families. They sent out hunting and gathering parties, but they seldom dispersed whole populations to live off the land in the manner of their hunter-gatherer ancestors.

These base camps were generally located, according to the accepted models, near rich and diverse resource areas, such as the edge of a marsh. While very large sites from the Woodland periods have been found in Delaware, most archæologists today believe that they were seldom occupied at any one time by more than a few households. Organized villages, with palisades and ceremonial centers for large populations, are not known to have existed here.

REGIONAL POSTCONTACT HISTORY

Wherever Europeans have settled, they have first built highly-organized towns on the frontier, projecting all the trappings and institutions of the mother country onto the raw wilderness. In the present Delaware, these highly-organized communities included fortified settlements at New Castle, Fort Christina, and several locations in Sussex County.

Pioneer farmers typically follow, after the soldiers have established an outpost of civilization. The first Dutch and Swedish settlements in the Delaware Valley conformed to the frontier model: they were compact and strictly regulated, and were supported largely by supply lines that brought necessities of life from Europe or from older colonies (Heite and Heite 1986).

Pressures from European international trade and political competition probably delayed the region's transition to the second phase of colonization, which was a less regimented period of dispersed

agricultural development on a relatively peaceful hinterland. Most of the other North American colonies moved to settle the countryside within a decade after initial settlement. The Delaware coastal settlements, in contrast, clustered around their fortified command posts for at least thirty years. Not until the fall of New Netherlands in 1664 was the Delaware Valley finally able to realize its potential as an open, self-sustaining, agricultural colony under a single European colonial power.

The major known centers of the settlement period, in chronological order, were:

1626: Dutch Fort Nassau on the Delaware River near Timber Creek at the present Gloucester, New Jersey and probably another poorly-documented outpost on Burlington Island upstream;

1629: A Dutch whaling station on a tract called Zwaanendael or Swandendael, on the lower bay, now in Delaware, and believed to be in the present vicinity of Lewes;

1638: Fort Christina, until 1643 capital of New Sweden, later the Dutch Fort Altena, now in the city of Wilmington;

1641: A colony of Englishmen from New Haven who settled at Varckens Kill, now Salem River, New Jersey;

1643: Printzhof, or New Gothenborg, on Tinicum Island, now attached to the Pennsylvania mainland, the home and administrative capital of Swedish Governor Johan Printz;

1643: Swedish Fort Elfsborg on the Delaware River near the present site of Salem, New Jersey, in the modern state of Delaware, but on the east bank of Delaware River;

1651: Dutch Fort Casimir, at the present site of New Castle, Delaware, established to counter the Swedish power;

1659: The Dutch West India Company fort at Lewes, at a known site on the present Pilottown Road in the city of Lewes, Delaware; and, finally,

1663: Cornelis Plockhoy's Dutch Mennonite settlement, also on the Swanendael territory and probably near the site of Lewes. This may have been the "Whorekill Town" known to have existed at the present Midway, and may have been associated with the "Townsend Site" excavatated by the Sussex Society

None were large: the principal fortifications probably did not measure more than 200 feet on a side. The total settled area on the Delaware between 1626 and 1664 did not exceed a few hundred acres, concentrated in seven locations. By contrast, Virginia before 1622 had dispersed into 25 particular plantations, populated by about 1,200 people cultivating extensive farms. Jamestown, the Virginia capital, has yielded archæological remains of at least 141 structures and major features, most from the seventeenth century.

Largest of the Delaware settlements was Fort Casimir and its adjacent village of New Amstel, which grew to contain 110 houses within eight years after its founding in 1651.

Land grants in the immediate area of the project begin with the Quaker influx that followed William Penn's takeover in 1682. The Dutch and early English settlers had largely ignored the area inland from Bombay Hook, probably because it was difficult to reach by ship.

Bombay Hook was an island, circumscribed by Duck Creek, which ran north-south and emptied into Delaware Bay through Little Duck Creek, now Leipsic River. The present direct route to the Bay, east of Smyrna, was not opened until the end of the eighteenth century.

Jurisdictional problems with the Maryland proprietors complicated development in lower Delaware. Maryland created an entity called Durham (or Essex) County, which pretended jurisdiction over the present Sussex. Some settlers, not sure which colony would ultimately control their homesteads, took out patents in both the Penn and the Calvert land offices. The battle was not finally settled until 1765, on the eve of the American Revolution, when a British

court decreed the present western and southern boundaries of Delaware.

During the Revolutionary War, British warships blockaded the bay and burned the wooden parts of the lighthouse on Cape Henlopen (Cullen 1956:20, 30). Farms along the bay, including some on the marshes at Bombay Hook, were attacked by marauding parties of British foragers. The Royal Navy's control of the bay was constantly challenged by small boat squadrons, which may have effectively prevented the military occupation of downstate Delaware.

During the period after the Revolution, Delaware farmland declined. Neglect, ignorance, and the disinterest of absentee landlords conspired to reduce the prosperity of Delaware agricultural areas. Early in the nineteenth century, a few educated farmers began to introduce new methods that eventually had a lasting effect on the landscape.

Agricultural societies during the nineteenth century brought innovation to agriculture throughout the state. These organizations sponsored contests for accomplishment in silk culture, fruit growing, and other areas of interest. Budded peach trees were among the innovations introduced during this period. Nurseries, orchards, and shipping facilities flourished; peach farmers rose to dominate the agriculture scene before the Civil War.

After the Civil War, Delaware agriculture turned to canning, and enjoyed a new wave of prosprity. Canneries appeared all over the state, and tomatoes became the dominant product.

When the Delaware Rail Road opened in 1856, Delaware producers gained access to national markets. Toward the coast, steamboat companies served communities that were not along the railroad. Woodland Beach, on Bombay Hook Island, was first a steamboat wharf and briefly a railroad terminus. By the end of the nineteenth century, roads had been reduced to feeder status, and the railroads and steamboats dominated long-distance travel.

MODERN TRANSPORTATION

Coleman DuPont, whose father had operated a trolley company, understood the importance of transportation in the development of lower Delaware. Although he was a member of the triumvirate that ruled Delaware's premier upstate industrial firm, DuPont was a man of broad interests.

He proposed to build, at his own expense, an intermodal transportation system that would include a four-lane divided highway, electric railway tracks, and an outer shoulder for bicycles and horse drawn vehicles. Each downstate town would be bypassed, since the highway was envisioned as a through road from Wilmington to Selbyville.

This visionary plan was reduced in the real world by politics and local opposition. Four lanes were reduced to two. The light rail system was eliminated, and bypasses were abandoned. The new road was cut through some new rights-of-way, but it always provided for a parade of potential customers to drive, and potenially to stop and to shop, as they passed through each small town.

In spite of predictions that the wide right-of-way never would be used, DuPont went ahead and purchased the full width in some areas. He eventually was appointed the first chairman of the new Delaware State Highway Commission that accepted his money to finish a scaled-down parkway, but his dream eventually was vindicated.

Completion of the north-south Parkway (Routes 13 and 113) in 1924 opened lower Delaware to highway traffic from upstate and points north. Motor commerce flourished, and settlements were no longer confined to a narrow band along rail and water corridors. People spread across the countryside in a disorderly suburban sprawl, but commerce coagulated predictably along the new corridors.

Along Route 13, a new band of businesses developed. One of the oldest of these is the Wayside Inn, in Smyrna, established on the edge of the highway soon

after it was opened. Other Smyrna businesses, including car dealerships, followed.

The new roads also encouraged agriculture, and Sussex County farms enjoyed a period of prosperity as the chicken industry developed. North-south tourist traffic dominated the Delaware coast, while the Maryland resort of Ocean City prospered primarily as the vacation outlet for Washington and Baltimore.

At the beginning of World War II, the DuPont Parkway had been enlarged to a four-lane road between Dover and Wilmington. Its last four-lane section, between Milford and Georgetown, is now under construction, 75 years behind its founder's visionary timetable.

Bypasses around towns finally were set in place after World War II. The first Dover bypass, in 1952, relieved the pressure on State Street and Governors Avenue. The new bypass skirted Dover's congestion, but it was not politically possible to restrict access. Smyna and Dover transformed their bypasses into commercial districts, which became congested bottlenecks along the parkway.

Figure 2: Soils in the project area, based on SCS, 1971

POSTWAR ECONOMIC CHANGES

Coastal Kent County was transformed during the middle years of the twentieth century by two events: potato farming and wildfowl refuges.

When the rich farmlands of Long Island disappeared under urban sprawl, potato farmers moved to Kent County, where growing conditions were similar. These newcomers, rich with money from suburban property settlements, introduced irrigation and other innovations to the broad plains of eastern Kent County.

Geese became big business with establishment of state and federal management facilities, which began during the Depression and have continued to expand to the present day.

Hunters from Pennsylvania and the northern states discovered the abundant waterfowl of the Delaware marshes; farms around the perimeter of the wildlife refuges discovered a rich market, catering to their needs.

The marshes, which Delaware farmers had labored nearly three centuries to drain, became assets to be encouraged and expanded.

West of the potato farms and goose marshes, the Route 13 corridor became clogged with sun worshipers trekking to the beaches. When they passed through Smyrna and Dover, vacationers clogged the old built-up "bypass" sections of the highway, stalling local traffic. Industries were choked by tourist traffic, and economic development of the Dover and Smyrna area was threatened.

THE FINAL BYPASS

The state's response to this growing congestion is Route 1, formerly known as the Dover Bypass or the Route 13 Relief Route. Planning and development went on for more than thirty years. Unlike its predecessors, this highway is a limited-access corridor, with few ramps into the adjacent communities. It segregates local and through traffic, allowing vacationers to whisk along to the beach while local residents go about their business.

During construction of this bypass route, several wetland areas were adversely impacted. Part of the mitigation of these impacts is the present wetland replacement project.

2. PLANNING CONSIDERATIONS

Time periods applied in Delaware preservation planning (Herman and Siders 1986) reflect only feebly the actual history of the state outside Wilmington. The state's generalized chronology is:

Exploration and frontier settlement.....1630-1730
Intensified and durable occupation.....1730-1770
Early industrialization 1770-1830
Industrialization and urbanization.....1830-1880
Urbanization and suburbanization 1880-1940

Only one area of the state, between Wilmington and Newark, actually experienced these historical periods in exactly this sequence. In spite of their limited applicability, cultural resouce investigations throughout the state are subdivided this way for the sake of uniformity.

Transportation is a dominant historical force in Delaware, but remains undefined among Delaware contexts. Transportation has not been ignored, however. It pervades other themes, but deserves consideration on its own merits. A historic context has been formulated for the archæology of agriculture and rural life in New Castle and Kent counties (De Cunzo and Garcia 1992).

Delaware's "framework of historic context elements" (Ames, Callahan, Herman and Siders 1989:21) is arranged according to a group of 18 themes, ten of which refer to occupations, such as forestry and manufacturing. The top of the list is agriculture, followed by forestry. Transportation is tenth on the list. While these categories are not supposed to be ranked in this order, the sequence may reflect the authors' viewpoint.

THEORETICAL ORIENTATION

The theoretical orientation of this study is generally cultural materialist, in keeping with the state management plans. Cultural materialsts study the effect of environment and technology on human behavior. Culture is viewed as a form of adaptation to both natural and social environments that results from the interaction among human individuals and groups.

Geographical determinism is a related, if not congruent, approach employed by historians. A geographical determinist historian looks at the landscape as an actor in the drama of history, as fully empowered as politicians, enterepreneurs, or military leaders.

This theoretical approach is explicit in the state management plan for prehistoric resources and implicit in the plan for historic resources. Those who use the cultural materialist approach tend to rely upon predictive models to structure their survey activities.

Neither the historical nor the anthropological style of expressing these similar ideas should be interpreted as diminishing or ignoring the obvious importance of studying historical individuals.

On an isolated archæological site, a few people are the subject population. Sometimes, rarely, their achievements and personalities can be

NATIONAL REGISTER CRITERIA

(National Register Bulletin 16a, *How to Complete the National Register Registration Forms*)

The quality of **significance** in American history, architecture, archeæology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess **integrity** of location, design, setting, materials, workmanship, feeling, and association, and:

☞ A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

☞ B. That are associated with the lives of persons significant in our past; or

☞ C. That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

☞ D. That have yielded, or may be likely to yield, information important in prehistory or history.

PRIORITY RANKING FOR ABOVE-GROUND RESOURCES
(State Plan, June 1989, page 79)

Agriculture
Settlement patterns and demographic change
Manufacturing
Retailing and wholesaling
Transportation and communication
Other themes

discerned, but more frequently the individual is lost among the group that created an artifact or assemblage of artifacts and features.

In very rare cases, such as the legendary Johnny Ward (Fontana *et al.* 1962), the person who created a site emerges from the archæological study as a recognizable individual. More frequently, the material remains from a site cannot be subdivided into any smaller unit than a family, a military unit, or a community.

From the earliest days of historical archæology, practitioners have struggled to resolve the apparent conflict between general and particular interpretation. Is the site a window into the life of an individual, or into the lives of the group members who lived there, or into the lives of a larger population, of whom the individual is but a sample? Is the archæologist writing a biography, a community history, or a contribution to the study of human society's larger characteristics?

While such questions have bedevilled "new" archæologists for a quarter century, more recent "post-modernist" or "post-processualist" archæologists will argue that it doesn't matter.

As the theoretical pendulum inevitably swings away from rigid formulations, it has become acceptable to concentrate on local history, local contexts, and local interpretations, without necessarily relating everything to universal considerations of political theory, natural laws, or some imposed theoretical model for defining a social structure.

PRIORITY RANKING FOR BELOW-GROUND RESOURCES
(State Plan, June 1989, page 79)

Settlement patterns and demographic change
Trapping and hunting
Mining and quarrying
Fishing and oystering
Forestry
Agriculture
Manufacturing
Other themes

NATIONAL REGISTER CRITERIA

Every cultural property should, ideally, be evaluated against all four of the National Register criteria listed on the first page of this chapter. In practice, most sites can be eliminated from consideration under most criteria. Prehistoric archæological sites are evaluated almost exclusively under Criterion D, properties that have yielded, or may be likely to yield, information important in prehistory or history.

Perhaps too hastily, historic and industrial archæological sites are also lumped into Criterion D, which sometimes seems in danger of becoming an archæological ghetto. In fact, any archæological site could be listed under any criterion.

The resource must be able to contribute to our knowledge about some research question. The ability of a site to answer a question is, of course, related to its integrity. Well-preserved sites by definition contain more information than damaged ones.

Finally, the site must be significant. To an archæologist, mere knowledge of the existence of a site is useful information. Any site can tell us something. To be significant as well as merely interesting, a site must have sufficient intellectual content that its excavation would substantially increase our knowledge about the people who have used the site.

To be eligible for the Register, therefore, an archæological property must meet all three tests of significance, integrity, and research value.

RELEVANT PLANNING CONTEXTS

In terms employed by the Comprehensive Historic Preservation Plan (Ames, Callahan, Herman and Siders 1989), and the management plan for prehistoric resources (Custer 1986), the project area lies on the line between the Coastal and Upper Peninsula geographic zones.

The obvious context is agriculture, which was defined as an archæological context by DeCunzo and Garcia (1992), which will be considered here.

PROPERTY TYPES IN THE LOCALITY

North of Route 6, on the Brown property near Taylor's Gut, a University of Delaware party identified several prehistoric sites associated with minor drainages (Grettler, Seidel, and Kraft 1994).

Small lithic scatters along the edges of shallow, ephemeral drainages (7K-A-121, 7K-A-119, and 7K-A-120) were located on shallow rises in the Mattapex silt loam soils. Since similar locations exist on the project area, these sites were considered useful precedents to consider in the present survey.

Nearby historic property types include agricultural complexes, agricultural fields, two nineteenth-century church sites, and a nine-foot road. The older agricultural complexes all occur on the islands of well-drained soil that intrude into the poorly-drained area. Only more recent habitations, such as mobile homes, occur on soils that are not well drained.

PROPERTY TYPES

Property types that might be found in the project area, based in part on a list promulgated for Delaware historic properties by Herman, Siders, Ames and Callahan 1989.

- Agriculture (crofts)
  - Products
    - Nursery / Orchard
  - Methods
    - Cultivation
      - Plowing
      - Plow Scars
    - Enclosures
      - Field Boundaries
    - Drainage and Irrigation
      - Ditches
      - Ponds
    - Fertilization
      - Manuring Spread
      - Fertilizer Residues
  - Forestry
    - Sawmills
  - Mining and Quarrying
    - Borrow Pits
    - Brick Clay Pits

ELIGIBILITY AND STATE PLAN CONTEXTS

Because of the high priority assigned to agriculture and the archæology of agriculture by the state planning documents, there is a high likelihood that well-preserved agricultural remains would be candidates for the National Register.

In order for a property to be eligible, it must possess integrity and definable boundaries as well as a quality called "significance," which can be defined only in context.

DeCunzo and Garcia suggest that temporal and physical integrity may be important factors when one seeks to determine significance on an agricultural site, especially if the site is being evaluated as representative (DeCunzo and Garcia 1992:311-317).

This concept of eligibility through "representativeness" takes on special importance when dealing with "ordinary" or "commonplace" properties. A property is "representative" if it contains all the elements of the "typical" property of that category, as defined in terms of a historic context. Integrity becomes the most important single determinant in evaluation when "representative" sites are being considered.

If a farmstead site is "typical," how can it be eligible? This issue has been debated at length (Wilson 1990) in the cultural resource management community. In any case, it can be argued that significance depends upon the context in which the site is found.

The context, for such comparative purposes, can be defined either as a site type or as a geographical unit.

DOCUMENTARY RESEARCH OBJECTIVES

Status is most easily determined through documentary research, but can be defined and clarified through archæology alone. In dealing with any agricultural toft, one is immediately confronted with status questions.

Tenant houses are different archæologically from smallholders' homes, and from slaves' quarters, even though all three classes were relatively low in the social hierarchy.

A disproportionate amount of study has been devoted to higher-status members of the dominant culture, whose sites have been pronounced "typical" by some observers. In Delaware, the "typical," or dominant, property has been characterized as a two-story, three or five bay brick or frame house with a two-story rear ell, situated in a farmstead context.

One such house, built during the nineteenth century, stands adjacent to the project area and was originally the farmhouse to this tract. Another, the Allee House, stands a short distance away on Dutch Neck, preserved as an historic site and open for tourists. These were not "typical" of the

majority of Delawareans' houses at any time in the state's history.

Instead, the "typical" site, or the one most "representative" of a particular population segment may prove to be a lower-status property. In order to identify lower-status individuals, particularly those who did not hold land by regular freehold, it is often necessary to go beyond a mere descent of title. They may turn up in court, in the poor records, or as tenants mentioned in guardian accounts.

Probes into Orphans Court, property tax assessments, manumissions, and other personal records often are necessary in order to flesh out sites of lower-status individuals who existed on the perimeter of landowning society. It is not unusual in such situations to conduct extensive genealogical studies or other investigations not commonly part of an archæological project.

FIELDWORK OBJECTIVES AND CONTROLS

"Compliance" archæology is the dominant employment environment for archæologists in America today, mostly as a result of Section 106 of the National Historic Preservation Act. This law and its assocaited regulations have established a national system of controls and standards in which most archæologists must work.

Some of the standards have nothing to do with archæology. Most are concerned with the regulatory aspects of the end product, inevitably a report or a determination of eligibility.

When the archæological profession turned from "pure" scholarship to regulatory activities, a traditional system of control was lost. Before the advent of regulatory archæology, quality was controlled by peer-reviewed journals and by academic committees, grant agency committees, and other bodies staffed by similarly-qualified scholars.

These traditional controls no longer obtain in the growing field of regulatory archæology. They have been replaced by a structure of regulation that imperfectly fulfills similar functions. Principal among these new controls are the state and federal manuals and guidelines.

The only purpose for setting forth standards and guidelines is to ensure a minimum level of quality control among diverse practitioners. Sometimes the act of controlling practice becomes more significant than the original objective.

There are two divergent approaches to controlling reliability in archæological site surveys: qualitative controls and quantitative controls. Both approaches seek to deal with the third mandate of the Secretary of the Interior's standards for identification: "Identification activities include explicit procedures for record-keeping and information distribution."

In its archæological guidelines, the Park Service states some of the constraints that must be considered in devising a field regimen:

> "Logistics in the field, including the deployment of personnel and materials and the execution of sampling strategies, should consider the site signifciance, anticipated location of most important data, cost effectiveness, potential time limitations and possible adverse environmental conditions." (Federal Register vol. 48, no. 190, 9/29/83, page 44736)

The purpose of control, at the state level, is to ensure that the survey activity is undertaken within these constraints. Control takes the form of a state survey manual, or a contract document, that prescribes procedures from either the quantitative or the qualitative point of view.

Quantitative controls seek to ensure quality by prescribing numeric dimensions of the testing activity, while qualitative controls seek to ensure the desired result through measuring the quality of completed work against defined outcomes. In such an environment, research is not so much designed, as it is engineered.

QUANTITATIVE PROCEDURAL CONTROLS

In the quantitative approach, a certain number of test units are prescribed in a specific space. For example, a linear survey

might be required to include one shovel test pit every fifty meters. Such arbitrary numerical controls are predicated on the theory that enough holes will produce at least a valid sample of the cultural materials, and that results can be improved by increasing the number of holes dug in a given area.

Such number-defined research designs are useful under two conditions, neither of which exist on this site. The first justification for such an approach is to force results from less-skilled or less diligent field workers who may be unable or unwilling to seek out areas where sites might be expected. The second reason for deploying arbitrary arrays of tests is to develop the predictive models that will make such gridded, nonexclusive, testing obsolete (King 1984:87).

Some state preservation agencies have chosen to depend upon the quantitative method of seeking to ensure quality work. However, no method of quantitative control has ever ensured quality. As quantitative controls have failed, new controls of the same type have been added, creating in some jurisdictions an environment of rigid quantitative control with no qualitative results whatever.

An extreme case, in the author's experience, occurred in another state, where the two fieldworkers were followed across a site by two state-employed inspectors with clipboards, who counted the number of test pits. Another state office declared that a shovel test pit was to be 50 centimeters square and no less than a meter deep, regardless of environment, site probability, or any other conditions.

QUALITATIVE CONTROLS

The qualitative approach to control, inherent in all aspects of the federal standards, relies on the presumed ability of a professional to creatively employ accumulated insights to adapt a research design for specific conditions of a particular site.

This approach begins with assurances that appropriately qualified individuals will be in control at all times, and that those individuals are capable of adapting and revising accepted techniques as necessary.

Conversely, the federal standard assumes that the state preservation staff will be qualified to interpret and understand the work of fully-qualified professionals. Without mutual professional respect on both sides of the process, the qualitative approach cannot succeed.

When the qualitative method of quality control is employed, one manages by objectives, and not by prescribing methodologies. Methods might be abandoned or modified in the middle of a project, without adverse effect, if the objective of the research design is kept constantly in mind.

The federal guidelines follow this approach, requiring that each report conclude with evaluations of the methodology and the results.

THIS FIRM'S APPROACH

The archæological industry has evolved along the two different lines as well. Some cultural-resource firms design their projects along quantitative models, employing large staffs to dig many holes. Their proposals typically involve large nonexclusive surveys and neatly spaced holes.

The opposite organizational approach is to employ models, to shift or refine priorities in the field, and thereby to reduce the number of unproductive test holes. Such organizations employ relatively larger numbers of skilled personnel, and smaller crews on site.

The second approach to quality control was employed at Bloomsbury, where a small crew is responsible directly to an on-site professional who is intimately familiar with the local archæological and physical environment. The research design was created with attention to existing models, and to the need for bias control that involves investigating at least some of the places where no resources were expected.

A key aspect of the firm's approach is reliance on advance preparation. Site history, environmental background, and other studies, typically are completed before the

firs fieldwork is undertaken. Because there is no operational barrier between the skilled and unskilled personnel, there is no separate report-writing phase, and much of the report is written before fieldwork begins.

HYPOTHESES, OBJECTIVES, AND PREDICTIVE MODELS

Site surveys can be classified between two extremes: the purely intuitive and the purely formulaic. Neither approach is entirely satisfactory.

Intuitive surveyors will depend entirely upon their knowledge of a locality, finding sites in places where they "know" to look. Because they have found sites in specific settings, they seek to repeat their success by going to similar settings. This is the essence of model-driven surveying.

But there is an important caveat: Unless the assumptions have been rigorously and independently tested, model-based surveys run the risk of missing large numbers of sites (King 1978:34).

This risk was demonstrated recently in lower Delaware, when surveys associated with the Route 1 Project discovered many Woodland-period sites in the wooded fringes of fields adjacent to waterways. This entire category of sites had been missed by fieldworkers who had diligently followed the accepted routine of investigating the nearby plowed fields. Non-exclusive surveys discovered the sites because this technique forced investigators to go into previously neglected places where no sites had been reported.

The non-exclusive survey also is less than satisfactory. A non-exclusive survey covers every part of the study area in a uniform way. Typically, this means laying out a grid and uncritically digging test holes at each grid intersection.

The purpose of such blanket survey is not to find sites, but to provide data for building a model. Non-exclusive surveys provide data equally for presence and for absence of resources, and constitute a tool for creating predictive models. Once a sufficient database has been accumulated in this manner, models can be developed and the non-exclusive survey can be abandoned or modified (King 1978:37).

Non-exclusive surveys typically involve hundreds of shovel test pits, which King (1978:52) describes as "a slow, expensive, frustrating, and often marginally effective way to locate archeological sites."

Delaware has fortunately transcended the stage of needing massive non-exclusive blanket tests. Well-tested predictive models shorten the task of field identification. Fortunately for the weary fieldworker and the budget-conscious sponsor, there is unlikely to be any further need to locate sites by digging huge grids of shovel test pits in Delaware.

Any research design should include some examinations outside the highest-probability areas, if only to confirm one's presumption that nothing is there. If a site should be found outside the area of high expectations, it does not necessarily disprove the model. Instead, studies of such anomalous locations merely contribute to our understanding of the model.

At the Hurd property, the predictions from different sources were not entirely congruent. Custer's probability survey (Figure 1) suggested a high likelihood of sites existing on the high ground at the northwest end of the property, while the area nearest to Hawkey Branch was assigned a low probability.

On the other hand, the soil map shows Mattapex and Matapeake soils near the branch, on slight rises flanking a now-ditched natural drain (Figure 2) at the south end of the property. Soil types have been used successfully in broad-area studies to predict site locations (Lukezic 1990). Just across the road, similar soil types on similar low elevations yielded abundant prehistoric and historic remains.

The applicable settlement model for the area at the head of Hawkey Branch, during prehistoric times could be summarized in terms of drainage and resources. Prehistoric people favored well-drained sites on slight elevations. Moisture-retaining soils, such as Othello, were not favored. Slight

elevations seemed always to be favored over low places or level ground. And sites tend to be found on the edge of some resource-rich area, such as a marsh, a stream valley, or a small source of fresh water.

HISTORIC SETTLEMENT PATTERNS

During the historic period, the settlement pattern is less distinct. The project site is inland from the coastal farmsteads that were located during the colonial period farther to the east. Early farmhouses were located closer to navigable water. As the road network developed, houses were built facing east-west roads that ran along the spines of the necks. The Hurd property was owned for a century by people who lived in a house, still standing, that faces a road on the northeast corner of the property. There was therefore a low probability of finding a nineteenth-century site or an eighteenth-century landowner's house.

Poor soil, isolated from the mainstream locations, frequently was occupied by marginal people. Poor tenants, minority squatters, manumitted slaves, and even runaways, made a living in the wilderness. These people are poorly documented, and their discovery always adds to our understanding of society.

Any domestic site on the property, from any period, would therefore be interesting and possibly significant.

FIELD AND ANALYTICAL TECHNIQUES

In their work on the Brown property across Route 6, the UDCAR group identified prehistoric sites by sinking lines of test pits in a fallow field on slight rises in the Mattapex silty loam. This seems a reasonable approach, considering the large body of inhospitable Othello soil that covers most of the area.

Instead of sinking test pits, the present researchers used cultivated swaths that effectively provided 50% coverage, including the Othello soils. Walkover survey provides a view of areas outside the places where the models suggest sites should occur, without the effort of sinking tests that are certain to be sterile.

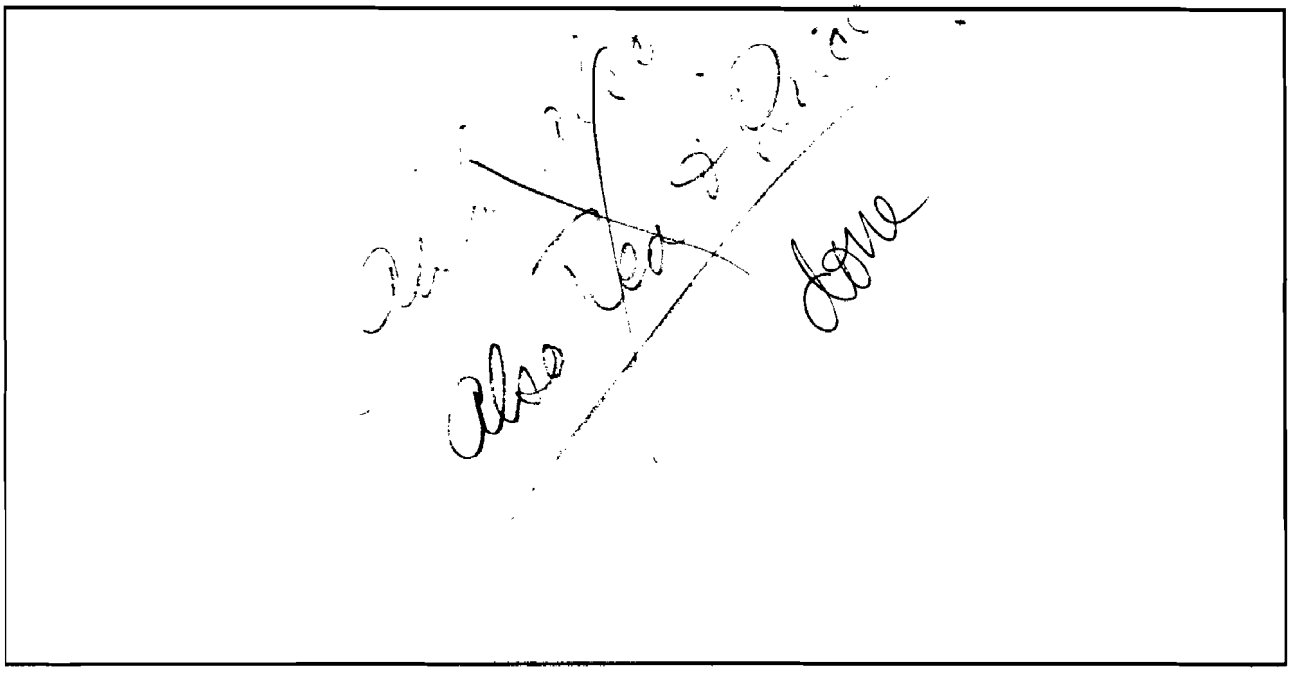


Figure 4: Detail of Beers *Atlas*, 1868. Arrow indicates project area

Mr. Hurd returned to the property to cultivate the site with a disk harrow on June 20. The machine cut a path 21 feet wide, opening the soil for inspection. A 50% sample was ensured by skipping every second swath across the field.

Where machine cultivation was impossible, shovel test pits were employed. These test pits were deployed along random lines across the wooded areas. Each pit was two shovel widths square, or roughly a half meter on a side. Generally the tests were sunk to natural subsoil, and the soil was sifted through quarter-inch hardware cloth.

Lines of shovel test pits are useful for mapping known sites or assessing relative artifact densities of areas within a study area. For this purpose, they are second-best choices after cultivation.

Shovel tests were restricted to wooded areas and to the place proposed for a basin near Route 6. The area south of the house was fieldwalked.

Once an artifact concentration or feature was identified by shovel testing or fieldwalking, it was to be verified by digging a larger test. A test square provides a larger sample with which to interpret a site, and affords an opportunity to look at subsurface features. Favored sizes for such verification tests are meter squares and five-foot squares.

EXPECTED PROPERTY TYPES

On the well-drained elevations to the south, small prehistoric procurement sites were expected. Deeply buried sites were not expected, since the soils formed on deposits that were here before humans arrived on the scene.

Rectangular forested patches along the west boundary needed explanation. Such formations typically indicate the presence of a house site, cemetery, or other activity area that cannot be cultivated. Sometimes, on the other hand, they simply indicate a place that is too wet to plow. In any case, they represent a culturally-defined choice, and therefore need to be explained.

For more than a century the project area was owned by relatives of the Allee family, who lived in elegant brick houses near the mouth of Hawkey Branch, along Dutch Neck Road.

The project area was decidedly outside the mainstream of Allee holdings, and could be expected to support only marginal populations. Any habitation from the Allee ownership period would potentially contribute to our understanding of this important family's farming practices and their relationship to poorer rural groups, including some of their own relatives.

This category of historic site, the socially peripheral agriculture-related occupation, is a poorly understood property type potentially eligible under Criterion D. While a large proportion of the population lived on such properties, they are poorly represented in the documentary record and in the standing structures listed in the cultural resource inventory.

If a site of this sort should possess even minimal archæological integrity, it might be eligible because of its rarity, especially if it is tightly dated (De Cunzo and Catts 1990:194).

CEMETERY SENSITIVITY

From the earliest days of settlement, rural Delawareans have buried their dead in both private and public cemeteries. Farm burial plots probably were the earliest interment sites, followed by churchyards.

Until 1774, the only public, nonsectarian cemeteries in Delaware were potter's fields. At that time, John and Philemon Dickinson created a cemetery in western Duck Creek Hundred, where no person could be excluded on account of sect. Large non-sectarian cemeteries would not apper in most areas until the middle of the nineteenth century.

Establishment of a neighborhood churchyard probably signals the end of new farm burial grounds in a particular locality, but established family plots continue to be used long after larger cemeteries are opened.

Plate 1: View of the project area from the air

3. History of the Property

The subject property is part of the Bloomsbury tract, surveyed in 1683 for William Williams. During the next 55 years, the records are silent about the land's use.

After 1738, the property belonged to Samuel Exell (or Axell), who for a while also owned land at the mouth of Hirons Branch. He obtained a new warrant and had it resurveyed obtaining a fresh title thereby.

Exell died without a will in 1753, owning little more than the 300 acres of Bloomsbury, most of which remained forested.

His movable estate was valued at £47/18/10, but Presley Raymond, his brother-in-law and administrator, had to disburse £17/5/3 more than the total to settle his debts. It would be sixteen years before his estate could finally be settled, since there were very young children, at least one of whom was less than five years old.

Exell left two sons and two daughters as well as a widow. The eldest son died unmarried, without issue, before achieving his majority, so that the three surviving children shared in the estate, with a lifetime dower set aside for the widow. No other properties were listed in the estate settlement, which means that the estate probably owned no other land at the time.

Prudence Macey (or Massey), daughter of Samuel Exell, petitioned the court for allocation of her third in November 1770. She and her husband pointed out that all three surviving children had attained legal age. When the division was completed May 7, 1771, Prudence received the middle third.

In order to allocate the farm, a survey was prepared and submitted to Orphans Court (Figure 6). The outline of cleared land is well defined on the map, but no house is indicated. Since the smallest acreage went to son Samuel, it is possible that the family home was on the eastern third, outside the current DelDOT property boundaries. As eldest surviving son, he would have been entitled to a double share, which means that his small acreage contained some element of greater value, in addition to the fact that it contained most of the cleared land.

When the division was completed May 7, 1771, the western third, which contains archæological site 7K-B-23, went to daughter Mary, the widow of David Griffen. Bloomsbury's acreage had shrunk to 202 acres, thanks to encroachments from other surveys on the north. The present northern boundary of the property, along the roads, is the northern boundary of the tract as it existed in 1771.

Sarah Exell and her three surviving children filed a petition in Common Pleas (Chancery) at its August term 1771. They noted that the 300-acre tract's boundaries were old and obscure, and asked that the Court order a resurvey, which was granted August 15. Since all four petitioners signed with their marks, there may have been some confusion with the legal system. Unless the documents are misdated, there would have been no need to resurvey the property at this date, since the division map had already been approved.

The owner of western third of Bloomsbury, Mary, was already a widow. She soon remarried Patrick Conner. The Conners and widow Exel conveyed their interests in 1772 to James McMullen, a Smyrna merchant. He died in 1784, and in 1801 his daughter sold the western third to Francis Denney.

John Macey died in 1796, and Prudence apparently soon after. The Maceys had at least three children: Mary Hart, John, and Jonathan. At some point, Mary had sold her interest in the share to her uncle Patrick Conner, who asked the Orphans Court to send commissioners to make a division of the Macey third.

After the litigation ended, the Macey tract was sold by the sheriff in 1799 to satisfy creditors of John and Jonathan Macey. The purchaser was Francis Denney, who already

owned the western third. In the 1803 assessment book, this property appears to be in the tenure of Thomas Thompson. Samuel Exell, the younger, died in 1783, leaving an estate valued at only £14/2/9 (box).

His will, proved August 20, 1783, left his movable estate and money to his niece Mary McFarlane. His real estate was left to his "cousin and only friend John Allee," who was actually the husband of his cousin's wife's sister.

John Allee died in 1787, leaving three minor sons in the care of his brother-in-law James Raymond, who eventually married the widow after his first wife, her sister, died.

Samuel Axell's former property was occupied by Patrick Conner, who tilled 35 acres. The Allee estate valuation of 1791 described the house as "a logged dwelling house about eighteen feet square," into which the three commissioners ordered a brick chimney to be built. There was also an unfinished log kitchen.

Patrick Conner had a role in all three parts. He and his wife sold the western third to an absentee landowner. He attempted to buy a share in the middle third, and he occupied the eastern third as Allee's tenant after his brother-in-law died. Nothing indicates that he lived elegantly. Even though they were related by marriage and blood to some of the wealthiest families in the neck, Sarah Raymond Axell's posterity remained poor and illiterate.

Abraham Allee was an heir to the eastern third of Bloomsbury when he married Susannah Denney, daughter of the owner of the western and center thirds.

When his father-in-law died, Abraham Allee was in a position to obtain control of the whole Bloomsbury tract, which was not exactly a profit center. Fortunately for the young couple, their combined inheritances included more profitable properties. Francis Denney owned nine plantations in Kent and New Castle counties to be divided among his five children, with each son to receive a share worth £100 more than each daughter's share.

Unfortunately for future researchers, his estate division was not entered in the court books. A survey of an adjacent property dated 1821 describes the property as "An ancient tract of land called Bloomsbury formerly of Samuel Exels heirs, now belongs to Abraham Allee in right of his wife Susannah, one of the daughters of Francis Denney, deceased, allotted and assigned under and by virtue of Orphans Court."

Abraham Allee lived elsewhere on the neck, in a brick house. The 1852-1853 assessment shows him owning a tract of 170 acres, 145 improved, with a log house, and another tract of 120 acres, 90 improved, with a log house. Neither exactly corresponds with the Axel property. When he died in 1858, he left the tract to his daughter Sallie and his sons James and Jonathan. The property was inexplicably identified as "60 acres" on Pumpkin Neck adjoining Alexander Peterson, Daniel Cummins, John M. Voshell, and others. these were adjoiners of the whole tract, whose properties would not have adjoined any one of the third parts. The daughter and sons had the property resurveyed, and found that it contained 220 acres, 18 more than the 1771 survey had called for, but apparently short five acres on the north that had slipped away.

All the goods and chattels

An inventory of all the goods and chattels of Samuel Axel Dec^{d} of Duck Creek Hundred in the County of Kent in the Delaware State as appraised by us the subscribers the 5th of December 1783 –

To his wearing apparel	£1/5/0
To 1 Bed bedstead and furniture	4/0/0
To 1 Chest and some old stuff therein 7/6	7/6
To 1 small box 3/9 pewter 16/	19/9
To some old ware with meal sifter 3/6	3/6
To 1 small table 6 2 iron pots 22/6	1/3/0
To 1 small pewter basin 2/ some old things 2/	4/0
To 1 bay mare £6	6/0/0
	£14/2/9

Source: Kent County Inventories, Delaware Archives

Yet the five acres were missing. A triangular parcel at the north end of the western third of Bloomsbury belonged to the heirs of John B. Savin, Sarah's father-in-law.

The 1859 Byles map of Kent County (below) shows a house in the name of "J. Allee" in the location now occupied by the farmhouse that formerly belonged to this property.

Sarah Savin, James D. Allee, and Jonathan Allee conveyed the 202 acres to Presley Ford in 1861. He apparently occupied the now-extant house; in his 1869 will, Ford referred to the Allee Farm "where I now reside," which he left to his sons Presley and William.

From this evidence, it appears that the present house was built during the Allee tenure, between 1824 and 1859, possibly as late as 1858. The house is oriented toward the road, which was laid out in 1824 (Scharf 1888:1096).

Farmsteads on the property before 1824, and probably before 1861, would have been built near the clear, arable, land along Hirons Branch. A very old transportation artery, Dutch Neck Road, is only a short distance to the south, across Hirons Branch and Allee family land.

William and Presley Ford divided the farm in 1892, creating the division line that is now the eastern boundary of the DelDOT property. William took the west part, with the farmhouse. He already owned the five acre triangle in the northwest corner, purchased from James Hoffecker in 1877. To this day, the deed describes the property in terms of the 1877 Hoffecker parcel and the 1892 division.

The Fords stayed on the farm until 1934, when the sheriff sold it. After several transfers, a five-acre lot adjacent to the house was divided from the farm in 1963.

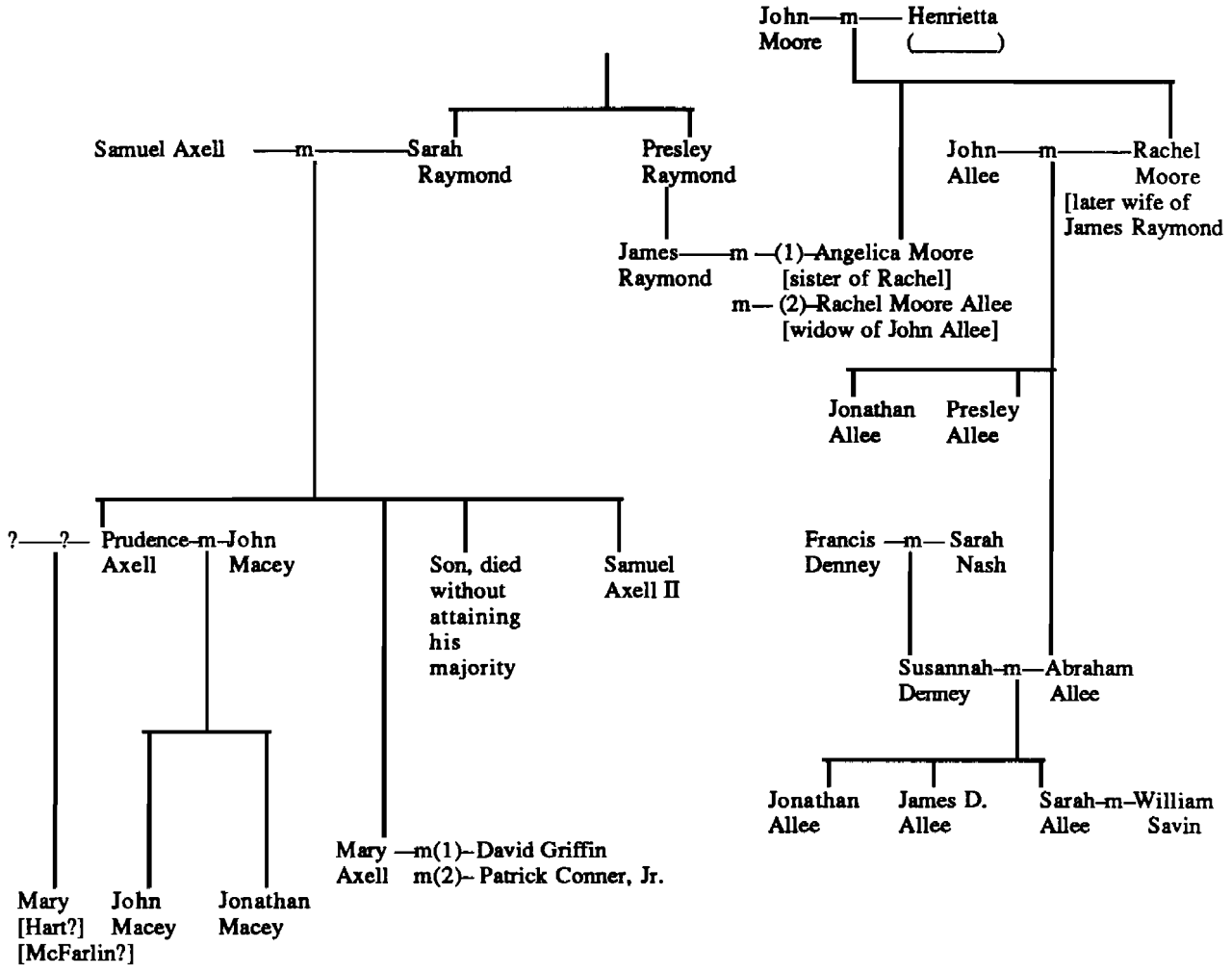
The historical background research left several unanswered questions that can be resolved only by archæological reconnaissance.

Any archæological survey of the present DelDOT property will be historically incomplete because half the Axell property lies to the east, on private land. The eighteen-foot log house of Samuel Axell the younger stood on that property. Much of the cleared ground belonging to the Macey third also lies to the east, although some Macey ground is in the present tract.

The project area does contain the entire western third of the Axell survey, briefly owned by the Conners. Some of the middle third also is on the property, including at least one well-drained site overlooking Hirons Branch.

Figure 8: Detail of the 1859 Byles map of Kent County

Figure 9: Genealogical chart of Bloomsbury owners, 1733-1858



4. PHASE I FIELDWORK NARRATIVE

Phase I fieldwork began with cultivating part of the field on June 20, 1994. The former owner, Mr. Carl Hurd, traversed the lower half of the property with a disk harrow. A 50% coverage was attained by alternating cultivated and fallow strips. Since the harrowing needed to follow the cultivation furrows, each field was disked in a different direction.

After a bone-dry week, strong rains finally came, allowing surface collection to begin June 30.

The 50% surface collection was restricted to the southern half of the property, where earthmoving impact will be severe. The swaths were walked by two people, under excellent visibility conditions.

The only artifact concentrations were found on the two previously-identified ridges of brown, well-drained, Mattapeake and Matapex soil (ER 1a, 11). The only artifacts found outside these soil zones was a thin scattering of more recent materials west of the existing Ford farmhouse (ER 1b).

The two well-drained hummocks are today separated by a twentieth-century ditch that roughly describes a former drain that is obvious from the ærial photographs and soil maps. The ditch was created before 1937, since it appears in the ærial photograph of that date (Plate 2, page 24).

West of the ditch, discovery of a sizable concentration of eighteenth-century artifacts prompted us to sink two five-foot-square test pits. These test squares were located at the apparent center of the artifact concentration. It soon became obvious that a site of some importance was present. The two test units were thirty feet apart.

The pits yielded late-eighteenth-century materials, including high-status materials. This was the highest point of well-drained soil in the western (Conner) third of the 1771 division.

The only feature found in these tests was a shallow flat-bottomed depression about eighteen inches by a foot, containing brown soil flecked heavily with charcoal and brick chips. This depression was apparent at the bottom of the plowzone, and intruded into a feature that appeared to be a plow scar. These features, which appeared at the bottom of both test squares, were linear brown soil marks with clods of yellow soil, running north-south.

East of the ditch, where a modest scattering of artifacts had been found, a test pit was sunk three feet square into the plowzone of the well-drained soil. No artifacts were recovered.

Woodlands in three areas impeded surface survey. These woods all were mapped as Othello soil, which is wet and inhospitable to human settlement. However, certain activities can take place in such environments, and can leave archæological remains.

Activities in such areas include timbering, such as sawmill sites, or brickmaking. Trash disposal is also common in poorly-drained woodlands such as this.

In order to understand the cultural history of the woodlands, and to determine their origins, three lines of shovel test pits were opened.

The first line of shovel test pits was dug through a rectangular clump of woods on the northwest border of the property. This small woodlot had recently been cut over. It appears on the 1937 ærial photograph in roughly its present shape. A line of shovel test pits diagonally across the lot (ER 2–10) yielded two pieces of barbed wire, a broken pebble, and a piece of non-returnable beer bottle. Since the barbed wire was found near the perimeters, it could indicate that the lot was once fenced, as for an animal pen. The soil was uniformly grey silty, and wet. No other man-made evidence was found.

An electric transmission line cuts through the older and larger woodlot, near the middle of the west property boundary. This woodlot shows on the 1937 ærial photo,

before the power line was constructed. Test pits (ER 15-20) were opened at twenty-meter intervals between the east edge and the property fence, a distance of 118 meters. The first tests were shovelled, but a hand auger was soon put to use. In all cases, the grey clay was overlain by a thin layer of leaf mold. No artifacts were found in the test pits, and no features were observed in the woods.

Since the property boundary is 311 years old, it is likely to contain very old features. In places the boundary is marked by a ditch, and in places by a fence. The hedgerow appears to be from different periods.

Along the line, 68 meters from the end of the first traverse line, was a corner stone and a square wooden post, marking one of the property corners established by the 1821 division of the adjacent Barren Hope tract (Kent County Warrants and Surveys A2#39). The rough fieldstone marker showed signs of having been recently recovered by a surveyor. The adjoining fence corner is hung from a post that appears to be a beam from a framed building.

The corner marker stood in the newer woodlot, which appeared as a fallow field on the 1937 ærial photograph. In its northeast corner is a rectangular pond, which was not there in 1937. This pond is interpreted as an attempt to drain the site. A deer-hunter's stand along the property line testifies to the game-attractive nature of this terrain, which offers considerable browse and drinking water for wildlife. These conditions probably have attracted hunters since the early Holocene, since prehistoric hunting stands frequently are found immediately adjacent to modern deer stands.

A line of auger tests was opened from the vicinity of the corner marker out to the edge of the smaller woodlot, 68 meters away.(ER 21-24) at twenty-meter intervals. Again, no artifacts were found and the soil was a uniform gray color with a thin forest mold covering.

The only remaining pre-ordained testing was a pair of shovel test pits to be opened in the vicinity of the kidney-shaped pond proposed for the northern perimeter of the property. This is an area of low probability, since it naturally has standing water on an unproductive clay soil. Nothing cultural was found in these tests (ER 172, 173).

AREAS WITHOUT RESOURCES

The poorly-drained parts of the property, mapped primarily as Othello soils, yielded no evidence of cultural resources, historic or prehistoric. The wooded areas proved to have been left fallow because they were not capable of supporting crops.

DESCRIPTION OF RESOURCES

While the hummocks duplicate the soil conditions and elevations found at the prehistoric sites across the road, no such finds were evident. The prehistoric component of the site collection consisted mostly of fire-cracked rocks and one unfinished point.

This difference could be explained by one factor that is missing from this site: Hawkey Branch is an insignificant stream compared to Taylors Gut, which drains the property across the road. The prehistoric population could have been attracted to more abundant resources nearby, and left Hawkey Branch alone.

The site on the southwest corner of the property, 7K B 23, appeared to be an eighteenth-century occupation site, warranting further investigation. A few nineteenth-century artifacts found west of the existing farmhouse (ER 1b) appear to be associated with that occupation.

The Phase I survey recovered a few artifacts east of the ditch in the southeast side of the property, but no site was defined, in spite of a test pit (ER 14) that was sunk near the apparent center of the finds.

5. Phase I Evaluation and Conclusions

Phase I investigations showed only two prospectively eligible sites on the property, located near the east and west boundaries, at high, well-drained, elevations overlooking the valley at the head of Hawkey [Hirons] Branch. These two sites were found exactly where the models predicted they should be.

For convenience, the two artifact concentrations were identified as a possible east site and a well-defined west site (7K-B-23). The putative east site appeared from the Phase I walkover to be a vaguely-defined scatter of artifacts across the well-drained knob at the summit of the field.

The west site was clearly defined, both spatially and artifactually. All the dateable materials belonged to the period just before or during the Revolutionary War, and most appeared to be concentrated in a space as small as fifty feet across.

Assessment of Phase I Methods

The 50% cultivation method proved to be an effective way to identify a site, but its utility does not extend to defining site boundaries. A follow-up, with full cultivation of the identified area, can cure this inadequacy at the Phase II level.

On the eastern site, boundaries were not easily perceived during the first survey. The artifact concentration that signalled the location of the western site was more compact, and therefore more easily found; it extended into two of the cultivated swaths, which were separated by a single uncultivated swath about twenty feet wide.

Shovel test pits at fixed grid intervals of fifty feet [or smaller] could easily have missed the west site altogether. Gridded shovel test pits are a traditional method that has been challenged as inefficient and wasteful. Recent research has demonstrated that almost any arrangement of regular test pits is better than tests at the square corners on a regular grid. Other arrangements, notably staggered grids and hexagons, have been shown to provide a better likelihood of recovering site data (Kintigh 1988). Even more efficient is the suite of sampling techniques used in this Phase I study, which limits detailed examination to areas indicated by environmental models.

Accuracy and Biases of Sources

The historical sources are adequate for identification, but some documents are sorely missed. For example, the Francis Denney estate division would have been invaluable in providing a location for tenant houses of the period.

Certain key documents were missing or flawed; the Francis Denney estate records would have been invaluable, and house locations on the Axell estate map would have helped immeasurably.

In general, source material is adequate. The documentary history of the site is not as well fleshed out as the adjacent Allee home farms, or the mansion farms of the other wealthy landowners.

Since a document is witness only to itself, every document must be assessed in terms of the conditions under which it was created. The absence of the Francis Denney estate records, and the curious conditions of Abraham Allee's will, must be explained in order to understand the unreported circumstances surrounding the estate.

Utility of Soil Type Models

Every testing procedure is, in practice, a test of existing assumptions and data-gathering for future models that cannot now be imagined. While local practitioners are becoming comfortable with the existing soil type model, new data must be added to the database for use by future model-builders.

The soil-type model performed well, even though considerable survey was conducted outside the areas where sites were predicted. Across the road, the earlier UDCAR survey had been constrained by

schedule to work almost exclusively in areas where the same model predicted sites might be found (Grettler, Seidel and Kraft 1994: 17-25).

The UDCAR party found six archæological sites, of which five were prehistoric. Site 7K-A-22, their historic site, was found to be congruent with a small ridge of Matapeake soil. The prehistoric sites were identified by sinking a single line of test pits designed to cross several slight ridges of Matapex and Matapeake soils. These ridges were separated by Othello soils in broad, ephemeral drainages.

Exactly the same soil situation existed at the Hurd property, where similar results were obtained. A total lack of resources on the Othello woodlots was not surprising, but poorly-drained soils must not be ignored altogether.

UTILITY OF PREDICTIVE MAPS

During the course of historical research, a series of historical maps was created, designed to determine the number of sites expected, and the identity of any remains discovered. These maps, reproduced in the historical research section of this report, proved indispensible. It was possible, using the maps, to postulate the possible location of a toft on the middle division of the Exell property in an area that is in the current tract.

The soil map was, of course, the most useful predictive map. The predictive maps created by the University of Delaware Center for Archæological Research (Figure 1) proved to be far off the mark. Both sites were found in the moderate probability area, and the high-probability area contained nothing of cultural interest.

UTILITY OF SHOVEL TESTING

With 20/20 hindsight, it is possible to state that we spent entirely too much effort on shovel test pits in the wooded areas with hydric soil, even though they were included in the area mapped with a high probability (Figure 1). As one observer remarked, "you don't find trees around here unless the ground is too wet to plow." In view of these and other results from similar traverses, there is no justification for constructing long lines of repeated test units across uninhabitable soil types.

In such wooded, boggy, clay soils, it should be sufficient to explore by digging random, unsifted, test holes to determine if the parcel includes pottery or brick manufacturing sites, or if the soil has been mistakenly mapped. The accumulated evidence certainly does not justify continuing the unproductive ritual of shovel testing, sifting, and recording such loci. The model has been proposed, tested, and proven; it should now be used to reduce the number of test pits.

ELIGIBILITY ASSESSMENT

The western locus clearly is eligible for the National Register, on the basis of the artifacts collected from the Phase I survey. Phase I evidence was insufficient to assess the eastern locus.

Obvious eligibility of the western site derives from its excellent spatial and temporal integrity. The site was first identified by the presence of a large number of high-status ceramic artifacts, concentrated in a tight concentration on the location where models suggested a site should be expected.

The eastern site, while holding enough promise to warrant further investigation, was not so obvious or so well circumscribed. The concentration was not tight, and the artifacts did not appear from the surface survey to be so homogenous.

PHASE II CONSIDERATIONS

The primary objective of any Phase II study is to determine if the property is eligible for the National Register of Historic Places. This involves answering three questions. First, the site's significance must be determined. Then, its integrity must be assessed, relative to similar sites. Finally, its boundaries must be determined. The first question frequently can be answered at the Phase I level, which was the case in this instance. Answers to the other questions require fieldwork.

In the table that follows, the "standard" evaluation and analysis options are described in the light of this site's conditions. Three of the techniques are at the core of the Phase II research design.

PHASE II TECHNIQUES CONSIDERED

Many alternative survey techniques are available to test for the presence of known or suspected resources. The commonest techniques are test squares, shovel test pits, and walkover.

Intra-site spatial definition

Test squares are preferred where a site's location is precisely known, and one seeks to identify subsurface features and to collect a useful artifact sample for analysis.

Shovel test pits can be arrayed across a known site to define limits and activity areas. They can also be used to test a relatively small project area in the vicinity of a known resource, to determine if the known resource extends into a construction site.

Walkover survey of a plowed field provides a sample of all areas. Very small sites that would be missed by interval testing, or sites containing few artifacts, can best be found by walkover.

Walkover survey can take two forms: tightly controlled or loosely controlled. When one is merely trying to find sites in a field where none are known to exist, the typical walkover is loosely controlled, dividing the survey area into broad swaths or areas. This technique avoids undue costly controls, while allowing a surveyor to develop an impressionistic idea of the resource picture. More tightly controlled surface surveys involve small grids and, in rare cases, piece plotting. The purpose of these surveys is to create a map, distinguishing activity areas from one another.

No survey method will identify all the resources, but it is possible to reduce the danger of missing resources to an acceptable level. It is therefore the responsibility of the archæologist to recommed a survey method that will detect the largest possible number of sites.

A tightly-controlled strategy, employing both artifact and soil chemical surveys, can produce a precise map of the resources on a site. In order to be useful, the survey must divide the site into many cells, at close intervals. A spreadsheet or mapping program can be used to convert such gridded data into intelligible graphics.

Shovel test pit strategies

Shovel test pitting, marginally useful in Phase I surveys, may be useful in Phase II work. In a Phase II project, lines of shovel test pits may be employed to define the margins of a large site, or to determine where concentrations exist.

However, shovel test pits are second-best, after cultivation and walkover, which was chosen.

Test squares

A screened test square has two purposes at the Phase II level: to provide a large sample and to afford a view of the subsoil. Minimum size, generally, is a meter square or five feet square. In many historic sites, with few features,a ten-foot square might be employed in order to define activity areas.

If one wishes to determine the existence of subsurface integrity, it is frequently necessary to open many tests on a typical site. Five-foot test squares were used during the Phase I survey, and were incorporated into the Phase II survey.

Phytoliths

Phytoliths are among the most durable, and most common, of plant fossils. Many plants deposit siliceous or calcareous bodies, which are shaped by the plant structures into which they are deposited. Phytolith analysis has become so sophisticated that it is possible now to distinguish not only the species, but the variety, of the plant that created it.

Because opal phytoliths are so durable, they may be recovered from sites where other evidence has been lost. To be useful, phytoliths must potentially answer questions that relate to the research design.

Because sample preparation is expensive and difficult, the decision to employ phytolith analysis should be restricted to contexts in which new knowledge could be obtained, in keeping with well-defined research objectives.

The most useful phytolith research has been employed in reconstructing prehistoric agriculture and environment from stratified deposits. Phytoliths are everywhere; they have been recovered from tooth enamel and from coprolites. But a useful phytolith sample must be derived from a clearly-defined context, which is relatively rare in the open field (Piperno 1988).

Pollen

Pollen analysis has been used recently on European-American sites to chronicle changes in ground cover and land use. Pollen tends to migrate down a soil profile at a fixed rate, until it finally disintegrates. The rate of migration must be established anew at each site, and even in different parts of the same site. Because the method requires considerable preparation, a clear research need must be established in advance.

Like phytoliths, pollen can reveal when a property was cleared, and what crops were grown at different times. However, this data is readily available from other sources, and there is no need to verify the information.

Soil Chemistry

One of the most profitable techniques for delineating intra-site activity areas, soil chemical surveys are an essential part of the archæologist's toolkit. The most attractive feature of this technique is its simplicity. Archæological soil samples are processed routinely by agricultural soil laboratories, and are used in the same format as agricultural samples.

Every human activity leaves a chemical residue in the soil, which is almost impossible to erase. Over the years, new land uses might superimpose new chemical residues, but the earlier stains are indelible.

While almost every site today is surveyed chemically, this technique is most important on low-status historic sites, where structural features might be ephemeral or nonexistent. On this site in particular, the use of soil chemistry was projected to be the most profitable line of research.

TECHNIQUES RECOMMENDED

Phase I sampling revealed that all cultural remains, from all periods, were concentrated on the summits of two gentle rises of well-drained soil, exactly where the models suggested they would be found.

In spite of the high status of the ceramics on the sites, historical evidence indicated that the site was owned (and probably occupied) during the eighteenth century by people who were very poor. Because bricks and nails were almost absent from the surface collection, a log house was the most likely shelter type to be expected.

In view of the apparent fragility of low-status sites, a Phase II survey was designed to extract maximum data from an expected minimal body of evidence.

Tightly-controlled surface collection and soil chemistry were the first line of attack. Both are "proxy" measures, in that they seek to describe the effect of a site's presence, rather than visible features on the site itself.

A ten-foot grid was selected, not only because it is the traditional grid size for historic sites, but because most historic-period structures or features are likely to be bigger than ten feet across. The smallest dwelling house mentioned in the local records is fourteen feet square.

It was important to use proxy measures to restrict the sample size for a more practical reason. Because log buildings are expected, certain site characteristics must be planned into the test strategy.

Log buildings leave few visibletraces below grade. Because they often stand on piers, no footers should be expected. Sometimes the only feature from a log house will be the reddened outline of burned subsoil where the chimney stood, and possibly a root cellar or animal burrows under the floor.

TABLE OF RESEARCH OPTIONS
ARCHÆOLOGICAL TECHNIQUES
THAT MAY BE CONSIDERED AT THE PHASE II LEVEL.

Technique or method	*Research objective*	*Limitations and constraints*	*Applicability to this project*
Phytolith analysis	Identify wild or cultivated plant material in sealed and dated cultural deposits[1] Such data can aid in analysing diet, ground cover, and agricultural history	Requires a protected environment, such as dental calculus or sealed clay soil matrix. Otherwise, the phytoliths disperse into the surrounding soil. The technique is seldom useful unless there is a context that can be dated.	There are few questions about the cultivated species on this site that could be answered most efficiently by phytolith analysis.
Blood residue	Determine the species that produced blood found on edged tools or weapons[2] This data can provide information about the diet of prehistoric people.	Blood residues seldom survive in sandy soils or in other situations where leaching occurs. False positives are also a problem, requiring the use of multiple specimens and control samples.[3]	Well-drained soil is unlikely to preserve blood residues intact on edges of prehistoric stone implements.
Pollen and related floral analysis	Define plant materials in the site's environment at some time in the past, in order to trace changes in historic climate and land use.[4]	Pollen grains deteriorate in the ground over time.[5] The context must be carefully defined when pollen or other plant material is recovered from cores.[6] Since pollens migrate downward in the soil of an open site, interpretation requires great skill. and considerable overhead.	The technique is most useful on prehistoric sites, but has been used effectively on some Euroamerican sites, where boggy deposits are present.

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Technique or method	*Research objective*	*Limitations and constraints*	*Applicability to this project*
Radiocarbon dating	Uses the known decay rate of certain carbon isotopes to date organic remains. Charcoal, shell, artifacts, or tissues can be dated, with varying degrees of reliability. Such dateable materials are then used to date associated diagnostic artifacts.[7]	Requires relatively large quantities of carbon to be recovered by methods that ensure purity; dates are often challenged when they are based on few or small samples. Unreliable for relatively recent sites because of wide margin for error.	Because the site is mostly postcontact, other dating techniques are more precise.
Flotation	Separates organic materials from the soil matrix, by using various devices that separate the heavy fractions from the buoyant ones.[8]	This labor-intensive technique should be considered only after it has been determined that organic materials are present, and that they can provide unique information. Sampling methods are critical to the quality of laboratory results.[9]	Of little use in the plowzone, the method may be used to isolate seeds in features with charred organic material. It may be desirable to analyse a sample from the seventeenth-century boundary ditch adjacent to the site.
Geomorphology and pedology	Allows the reconstuction of past landscapes and definition of natural layers through a study of forces that have caused soils to be deposited during the period of human occupation on a site.	Often suffers lacunæ for periods when soil was removed by natural processes, such as wind and water erosion.	Human abuse of the ecosystem through time can be interpreted through sediments. It may be worthwhile to look at the history of Hawkey Branch since agricultural runoff began.

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Technique or method	*Research objective*	*Limitations and constraints*	*Applicability to this project*
Mean ceramic date	Calculates the mean date of a deposit by comparing the bracket dates for each ceramic type found in the deposit.[10] Later refinements, notably the work of Turnbaugh and Turnbaugh, have allowed researchers to distinguish activity periods within otherwise undifferentiated collections.	The method does not distinguish among long-lasting ceramic types, and excludes large quantities of ill-documented vernacular wares.	Will be useful in pinpointing dates of features in areas of the site where large numbers of well-dated ceramic types are present.
Miller ceramic index	Formal analysis of nineteenth-century ceramics can be used to describe expenditure patterns on sites and to establish economic scaling of a site.[11]	Becomes clouded when the economic level of a site's occupants changes.	Most useful when there are large numbers of different nineteenth-century ceramics that can build a statistically valid database.
Clay pipe stem analysis	Because clay pipe stem bores became narrower through time, it is possible to date a site or deposit by measuring the bores of pipe stems found.[12]	The method becomes accurate only when the number of pipes is very large, and when the pipes are all English.	In Delaware, there seldom are enough pipe fragments for application of the Binford method, but a useful Harrington bar graph can be derived from as few as a dozen specimens.
Soil chemistry	Can define intrasite activity areas by measuring chemical residues left in the ground by human activities.[13]	Agricultural chemicals and industrial residues may mask archæological remains. Only the sample from the bottom of the A horizon may be considered informative.	The method is especially useful for defining intrasite relationships where relatively few subsurface features are expected, as here.

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Technique or method	*Research objective*	*Limitations and constraints*	*Applicability to this project*
Primary historical research	Primary background research must be sufficient to explain events that may have shaped the site, and to identify the origin of all landscape elements.	A document is a witness only to itself, and must be accepted only within the context that caused it to be created.[14] Documentary interpretation may be rendered worthless if misapplied. Some site occupants are not documented, and may be missed if their archæological remains are not sought.	The site is well documented, and primary history has been completed. It may be possible to flesh out the lives of the occupants even more. In particular, it will be important to find peripheral records of the poor owners.
Water screening	Facilitates separation of small artifacts from matrices, including such difficult surrounding materials as clay and organic matter, by passing water through a sample on a fine mesh screen.[15]	Extremely labor-intensive method of reducing the matrix must be used selectively, even though the results may be much more satisfactory than dry recovery methods.	Fills of privies and other organic-rich features should always be sampled by water-screening.
Archeomagnetic dating	Determine the date of a fire by measuring the magnetic north and compass needle dip as reflected in the alignment of iron molecules in the burned soil. Recent studies have shown that it may be possible to distinguish between human-caused and natural fires[16]	Requires a considerable local body of knowledge regarding the history of magnetic phenomena, but can be extremely precise when the data is available for the local area.	There is enough information on compass deviation in central Delaware to allow rough dating if a hearth is encountered.
Harris matrix stratigraphic analysis	Identify and create a seriation for deposits through the use of a structural system.[17] The matrix is most useful on large complex sites with many cultural deposits.[18]	Harris matrix analysis is most effective at sorting many superpositions, in order to create a table in which each deposit is placed in its relative chronological order.	The Harris matrix is often useful, even on sites with few superpositions, when one needs help working out the logical sequence of features and events.

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Technique or method	*Research objective*	*Limitations and constraints*	*Applicability to this project*
Trace elements in human skeletal material	Barium, calcium, and strontium residues in human bone may be used to infer the individual's food preference between terrestrial and marine sources.[19] Such analyses could be useful in coastal sites to define the geographic limits of dependence upon seafood.	Dietary sources of trace elements may vary in different parts of the world. A local database is necessary for interpretation of chemicals in bone.	This method has limited applicability, but should be kept in mind if human remains are recovered.
Dendrochronology	If wood is preserved, it may be possible to determine the date it was felled by comparing tree rings in the specimen with a master table that includes other trees from the region, preferably of the same species.[20] Some useful work has been done with fragmentary specimens on sites where several contemporary or near-contemporary pieces of wood are present.[21]	Requires good wood preservation, a proven local table of tree-ring thicknesses, and, ideally, the outermost layer of the log. The method is most useful in arid areas, where rainfall fluctuations over broad areas will produce relatively uniform patterns.	It is unlikely that such good wood preservation would be encountered on this site. Submerged wooden structures, or the preserved timbers of standing structures, are the most likely places to find specimens for this sort of analysis.

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Technique or method	*Research objective*	*Limitations and constraints*	*Applicability to this project*
Subsurface transect surveys at fixed intervals along a fixed grid	Nonexclusive transect surveys, employing subsurface tests at fixed intervals, often are used to characterize a study area's general characteristics.	Such surveys are useful only in areas where the archæological environment is imperfectly understood. This method "is a slow, expensive, frustrating, and often marginally effective way to locate archeological sites. Small phenomena can still escape notice."[22] Recent studies suggest that tests at regular intervals on a foursquare grid are probably are the least effective method of finding cultural resources.[23]	Fixed interval testing is not indicated in most Delaware sites, where effective models exist, allowing more profitable selective sampling systems.
Controlled nonexclusive walkover survey after cultivation	The preferred method for identifying site locations, and activity areas within located sites, the 100% walkover is the most cost-effective survey.[24] Intrasite geography can be defined by using very small survey grid intervals.[25]	Æolian and alluvial deposits sometimes mask buried sites, even with 100% visibility.	A 50% cultivation walkover was used in the Phase I survey to locate resources, and 100% walkover is the selected method for defining the site at the Phase II level.
Sampling survey	Predictive sampling surveys attempt to cover large areas with relatively smaller levels of effort by selecting certain units for investigation on the basis of pre-established criteria. Stratified sampling and other systems are constructed in order to reduce bias.	Sampling surveys are effective when formulating models, or to fine-tune a model for application in a large area. A well-designed sampling survey can produce reliable results if the method of selection is reliable.	Shovel-test transects were used to test low-likelihood areas at the Phase I level on this site, but would be inappropriate in areas where sites are expected.

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PHASE II STRATEGY

Capabilities of the soils, shown in the county soil map (below) limit the possibilities of discovering previous land uses. Some uses, notably cemeteries and kitchen gardens, are likely to be found only on the two well-drained patches where artifacts were discovered. The Othello soils would not have been fit to cultivate before drainage systems were installed.

After its Othello soils were drained, the farm became capable of supporting agriculture; before that time, the tract had little to recommend it. The ditches that crisscross the property today are therefore a significant historical feature. But these drainage ditches are modern; some were built by the most recent private owner, while the others can be documented only back to 1937. A modern, machine-made ditch divides the property and drains the wet uplands.

To visualize the setting before the first drainage ditches were cut, one must imagine isolated hillocks of habitable land, surrounded by hardwood wetland forests that were impassable for vehicles much of the time.

Occupants of the property would most probably have lived close to the branch, where the better natural drainage exists. Since the present Route 6 and Hawkey Branch roads did not exist until the middle of the nineteenth century, the earliest settlers probably used Dutch Neck Road, which lies across the branch, to communicate with "the Cross Roads," now Smyrna, or the landing at the mouth of Quarter Field Creek on the old Duck Creek.

Because of these considerations, Phase II investigations were confined to the southern part of the property, were artifacts had been found. The Phase II proposal was divided into six stepx:

1. Immediately before fieldwork begins, cultivate the well-drained soils on both sides of the drainage ditch, south of the power line right-of-way. This is a total of about 10 acres.
2. Stake a ten-foot grid over the apparent site west of the drainage ditch.
3. Surface collect artifacts within the grid on the western part, segregating artifacts by ten-foot unit.
4. Collect soil samples from the grid area in the western part, for chemical analysis.
5. Surface collect the plowed area east of the ditch, attempting to define any artifact concentrations there. Conduct test excavations as warranted.
6. At the completion of surface collection, hand-excavate test squares in the plowzone of the previously-identified artifact concentration area.

ARTIFACT-DRIVEN TESTS

Phase I investigation had included two five-foot test units in the apparent center of the artifact concentration, labelled 12 and 13 in the excavation register. These two test squares formed the basis for a grid to be established over the entire western site area.

A controlled surface collection, catalogued by ten-foot square, was to be the first step. Any patterns found in this survey were to be used in formulating the test pattern.

CHEMISTRY-DRIVEN TESTS

Using results of soil chemical analysis, additional test squares were to be positioned over places where high quantities of significant elements were found. The combination of artifact concentrations and chemical markers, it was felt, would reliably indicate the activity areas on the site.

THE EASTERN FIELD

Across the ditch, a different strategy was necessary. Since no artifact concentration had been identified, plowing and surface collection would be used to identify any concentrations. Subsurface testing in the most likely places would then be employed.

SOIL CHARACTERISTICS AND CAPABILITIES

(Based upon Soil Conservation Service Kent County survey 1971)

	OTHELLO (Ot)	MATAPEAKE (MeB)	MATTAPEX (Mt)
ELEMENTS OF WILDLIFE HABITAT:			
Grain and seed crops	poor	fair	fair
Grasses and legumes	fair	good	good
Wild herbaceous upland plants	fair	good	good
Hardwood woodland plants	good	good	good
Coniferous woodland plants	fair	poor	poor
Wetland food and cover plants	good	not suited	poor
Shallow water developments	good	not suited	poor
LIMITATIONS FOR COMMUNITY DEVELOPMENT:			
Roads in open areas	Severe: high water table	Slight	Moderate: moderately high water table
Cemeteries	Severe: high water table	Slight	Moderate: moderately high water table, moderately slow permeability
Home gardens	Severe: poor natural drainage	Moderate: 2 to 5 percent slope	Moderate: impeded natural drainage

6. Phase II Fieldwork Narrative and Phase III Research Design

Phase II fieldwork began September 12, when Mr. Hurd returned to disk the eastern and western sites. Because of the heavy weed cover, it was necessary to disk twice. Cultivation created an open site, punctuated by an unplowed space around the two original test pits, where camp headquarters was established. The grid was staked, and chemical sampling began.

Rain finally came over the night of September 17–18, and the site was available for detailed surface collection.

A ten-foot grid was laid over the original two test units in the western part of the property. Grid axes were numbered from west to east, and lettered from north to south. Each ten-foot square was identified by the coordinates of its northwest (upper left) corner (Figure 12). The beginning point of the grid was sited outside the property so that there would never be any negative unit numbers.

Each unit was identified in the records in terms of its ten-foot grid coordinate location. When five-foot squares were opened they were described as quadrants of the parent square.

In order to establish the internal geography of the site, it was necessary to plot artifacts, soil drainage, and chemical residues. These site attiributes were plotted on the grid for mapping purposes.

Artifacts were flagged as noted during the various operations on the field. The array of yellow crop flags on the site allowed the investigators to visualize site limits for visitors. When the artifacts were harvested, the flags were left in place, unless they happened to be in the way. The "core" of the site, which was not cultivated, could not be surface collected, either.

Surface finds were mapped by ten-foot unit, and entered in the excavation register. The only distinction on the map was between units where a single artifact was recovered, and units where multiple artifacts were recovered.The resulting pattern (Figure 13) repeated the impressionistic findings of the original surface survey, and provided dimensions for the observed site. Multiple-artifact units clustered around the initial tests, with an outer ring of single-artifact squares.

This surface collection would later be used to identify artifact concentrations that might have meaning for the interpretation of activity areas.

Soil drainage, an important factor in site definition, was assessed by a straightforward approach. After heavy rains had saturated the soils, the investigators walked across the site, while setting stakes and flagging artifacts. There was a remarkable difference, sometimes obvious in one or two paces, between well-drained and poorly-drained soils. By noting the grid coordinates at which the workers' footprints suddenly became deeper, it was possible to map the ridge of well-drained soil. It should be noted that the well-drained soil is not exactly congruent with the highest (20-foot contour) part of the site. This discontinuity was attributed to the vagaries of automated ærial contour mapping. Since the shape and dimensions of the well-drained soils were identical to the highest ground as represented on the map, the author resolved to distrust the received topography until a more accurate field verified topography was possible.

Soil chemicals were sampled at ten-foot intervals, at the base of the plowzone. A standard agricultural analysis was made by the soil laboratory at the University of Delaware College of Agriculture. The resulting maps would be used to interpret findings at the Phase III level. For the moment, however, suspicious "peaks" were used to spot selected test units.

Phase II test units, each five feet square, were positioned to provide maximum coverage of the various parts of the site. Topsoil from each five-foot test square was shovelled and then sifted through a quarter-inch hardware cloth screen.

Plate 3: Ærial view of the site, after cultivation. The uncultivated area in center occupies the site core. In foreground is the drainage ditch that currently divides the property; the seventeenth-century property boundary is the hedgerow in the background.

Two outlying units were situated at places with high peaks of calcium and phosphate, both of which proved to be virtually devoid of artifacts. Tests near potash concentrations, on the other hand, proved to be close to features and heavy artifact concentrations (Figure 14).

Starting from the north, an array of test pits was opened across the site along diagonal lines. The pits were 25 feet apart along the grid, but only about 14 feet apart on the diagonal, providing a smaller interval between tests than would have been possible if the usual gridded test pattern had been employed. In fact, it can be shown that almost any systematic arrangement of staggered test squares is better than the traditional checkerboard pattern of tests on the corners of grid intersections (Kintigh 1988). The 14-foot interval was considered satisfactory, since any house is likely to have a footprint larger than this length on at least one side.

The Kent County Archeological Society chapter of the Archeological Society of Delaware visited the site on a sunny November Saturday and opened three test squares in the southern part of the artifact concentration. Two of these units contained features. A third feature had already been identified nearby close to the original two test squares and near the two highest potash peaks. The presence of these features helped confirm the original conclusion that the site center lay in the vicinity originally identified during the first tests.

Only one of the three features was immediately uncovered. It proved to be a shaft, probably a well. The overall feature was about seven or eight feet in diameter. This was filled with clods of yellow soil, trash, and brick chips, surrounding a uniform-colored brown central area. This brown area was interpreted as a robbed out well-shaft, for it became narrower and better defined as one went deeper.

At about two feet below grade, the central core became a well-defined shaft about two or three feet in diameter. A ring of brick chips in the surrounding fill was interpreted as spalled bricks from a robbed-out well lining.

The other two features were also filled with cloddy backfill material with trash inclusions. They were opened only in the isolated test squares where they were found, which means that their description was deferred for Phase III analysis.

Discovery of these features fulfilled a Phase II objective of demonstrating that subsurface features exist on the site. Identification of one of these features as a well was sufficient evidence to conclude that the primary domestic part of the homelot would be found in the vicinity of grid locations 1100 to 1170 east and K through N south, an area roughly centered on the original two test squares.

Across the ditch in the eastern field, the procedures were more like Phase I than Phase II. The field was plowed and the artifacts were flagged, but no grid was imposed on the field. A test square was located near the eastern property line, near several flagged artifacts (ER 169), but no features or artifact concentration could be identified.

A second test proved to be more productive and more puzzling. It, too, was sited near a cluster of flagged artifacts. The five-foot square revealed a deep disturbance, which proved to be an apparent ditch. There were some historic artifacts in the topsoil, but the ditch fill contained only fire-cracked rocks.

Another test was sited to the north, along a line parallel to the sides of the original test. This trench was ten feet by two and a half feet, with the express purpose of identifying the ditchline. As it turned out, the ditch lay exactly in the center of this test, and was five feet wide. Again, the only artifacts were fire-cracked rocks from the ditch fill. The rocks from the second test could be refitted into the original two parent rock fragments, indicating that they were burned in a fire very near the ditch.

Examination of the profile in these two tests revealed that the ditch had been re-dug several times,with a final profile that was much shallower than the original.

The location and bearing of this ditch was suspiciously close to the location of the 1771 property line between the western and central portions of the Axell estate. When surveyors from Century Engineering visited the site, they measured its location and superimposed the location on a copy of the base map. Sure enough, the ditch was on the boundary location, even though it was not intentionally sited for the archæological test.

Subsequently the investigators visited other boundaries of the property and found that the present ditch along the south boundary is five feet wide, and that part of the seventeenth-century boundary on the west also is marked today by a ditch five feet wide.

PHASE II ACCOMPLISHMENTS

The Phase II investigation had attained its stated objectives of locating buried features and delineating the apparent site boundaries. In fact, three boundaries were identified for further study.

First of these was the boundary of the house site itself. This proved to be the core area, later defined as surrounding the well. This area, which could be expected to contain the most revealing and the most delicate remains, was identified for hand-excavation.

The second was the boundary of the probable eighteenth-century homelot. Since most household activities normally take place on well-drained soil, the homelot probably could be identified as the well-drained soil plus surrounding soil that would serve as animal pens or other ancillary purposes. The homelot area, where features will be sparse and mostly architectural in nature, can most profitably be dug by machine.

Third of the boundaries was the eighteenth-century property line between the western and center thirds of the Exell property division. This unexpected find raised a series of related questions. If it should prove to be the 1771 boundary ditch, it is a valuable piece of evidence with which to interpret other such features elsewhere. Boundary ditches therefore enter the picture as a proper area of archæological research.

PHASE III OBJECTIVES

Within the inner boundary, the house, well, privy, and kitchen can reasonably be expected. These features define the domestic area, and should be dug by hand.

The main reason for hand-digging is to allow detailed observation of features that might be visible in the subsoil, and to recover a uniform sample of artifacts from the topsoil.

If, as we suspect, the house was a log affair with relatively crude appendages, evidence could be quite scanty, and shallow enough to be vulnerable to even the most careful Gradall operator.

Outside the core, homelot features should include trash pits, post holes and post molds. These are fairly straightforward features, deep and clear by comparison. They can safely be laid bare by mechanical diggers.

The apparent boundary ditch presents a series of other questions. Because it was a property boundary for only a short time, this ditch is unique. Most boundaries, like the western line of the present property, have been constantly renewed, and their original configurations have been obscured. This boundary was a property line for only a half century, from the time the Exell estate was divided until Abraham Allee reconsolidated the property. It needs to be placed in its context, which includes the seventeenth-century boundary to the west and the still-open boundary ditch to the south.

PHASE III RESEARCH ASSUMPTIONS

This site is unique in certain ways. The documents indicate that it was owned and presumably occupied by some of the county's poorest citizens. Architectural-group artifacts on the surface confirm this assumption, since there were few brick fragments and even fewer nails.

Plate 4: Ærial view of the entire property, soon after cultivation for Phase II work. The 1771 dividing line between the western and center shares of the property is shown as a dashed line across the center of this photo.

Yet the ceramic assemblage was typical of what would be expected from a family related to some of the wealthiest people in Duck Creek Hundred. Ceramics included Chinese porcelain, creamware, pearlware, and white saltglaze stoneware.

Documents indicate that both seemingly contradictory conditions are true.

Because the farm clearly was unable to support expensive tastes evident from the ceramics, the site's inhabitants clearly must have had some source of nonfarm income, or at least income that was not dependent upon the richness of this particular farm. It is therefore imperative that occupational clues be followed.

A major objective of Phase III research will be to identify the social, economic, and occupational position of the site's inhabitants on hierarchical systems, other than genealogy (Figure 9).

Figure 15: Location and profile of the ditch uncovered in the east field

DESCENT OF TITLE

CARL HURD PROPERTY DC 11.00 01 20.00000

CARL WAYNE HURD AND NANCY M. HURD

TO

DELAWARE DEPARTMENT OF TRANSPORTATION

21 March 1991

Deed Book R49, page 241

Two contiguous parcels:

1. On the south side of the road from Carrollton Church to Leipsic (now Route 6) and also on the west side of the road from Route 6 to Leipsic, bounded on the east by land formerly of Presley Ford but more recently of Walter II and Rebecca Baker; on the south and southwest by land formerly of Alexander Peterson's heirs but more recently now or formerly of Harvey and Laura Wilson; also bounded on the south and southwest by land formerly of Jesse Vane and others but more recently now or formerly of Carlton Blendt. Metes and bounds are according to the deed of Presley Ford, Jr., to William H. Ford, 27 February 1892, Deed Book I-7, page 380.

2. A small portion of about five acres in the extreme northwest part of the property. Metes and bounds are according to the deed of James H. Hoffecker, Jr., to William H. Ford, Deed Book W-5, page 407.

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HARRY BENSEN, LILLY MARIE BENSEN, EDGAR W. BENSEN, AND MYRA BENSEN

TO

CARL HURD

17 Feb. 1978

Deed Book H32, page 340

Same property as the above deed.

ROBERT AND MADOLEEN M. WEBER

TO

HARRY BENSEN AND LILY MARIE BENSEN
AND
EDGAR W. BENSEN AND MYRA P. BENSEN

5 October 1963

Deed Book I23, page 198

Describes 114 acres, excepting and reserving 5.026 acres of land on the south side of Road 323, bounded on the north by the county road, on the east by Jackson's land, and on the south and west by the farm.

The description of the reserved tract begins at the center of Road 323, a corner for Jackson, and then follows Jackson's line.

South 1°5' East 445 feet to a point in the line of Jackson.

South 86°30' West 422 feet to a pipe.

Due North 605 feet to a point in Road 323.

Thence with the road South 72° East 434.48 feet to the point of beginning.

-

WESLEY REEVES AND CELESTE REEVES

TO

ROBERT G. WEBER
AND MADLOEEN WEBER

20 April 1956

Deed Book D21, page 511

Mentions a dwelling house, stable, barns, poultry houses, cribs, and other outbuildings.

WILLIAM H. FISHER, SINGLE MAN

TO

WESLEY REEVES AND CELESTE REEVES

26 March 1946

Deed Book M17, page 215

-

CHARLES J. JARRELL AND ROSE JARRELL

TO

WILLIAM H. FISHER

6 August 1944

Deed Book S16, page 93

Improvements include a dwelling house, cow stable, cribs, granary, and poultry house. Buildings are reserved until September 1.

114 acres conveyed to William H. Ford by two deeds of Presley Ford, Jr. and James H. Hoffecker, Jr.

-

KENT COUNTY MUTUAL INSURANCE COMPANY

TO

CHARLES J. JARRELL AND ROSE JARRELL

6 August 1944

Deed Book S16, page 90

-

ROBERT A. SAULSBURY, SHERIFF

TO

KENT COUNTY MUTUAL INSURANCE COMPANY

7 May 1934

Deed Book M14, page 458

Recites writ #16, April 1934 term of Kent County Superior Court.

HARRY W. FORD AND SUSAN FORD

TO

DELAWARE STATE HIGHWAY DEPARTMENT

1 July 1929

Deed Book R13, page 241

Conveys a right-of-way for a nine-foot road.

-

CLARENCE FORD AND ETHEL FORD,
LOUIS RAWLEY AND LILLIE RAWLEY,
LEWIS FORD AND NORA FORD,
MYRTLE FORD, SINGLE PERSON,
AND
WILLIAM R. FORD AND ELIZABETH FORD

TO

HARRY W. FORD

7 January 1917

Deed Book B11, page 396

Priscilla Ford died intestate, leaving the property to her six children, who conveyed it to their brother Harry.

-

ARLEY B. MAGEE AND KETURAH MAGEE

TO

PRISCILLA FORD,
WIDOW OF WILLIAM FORD

10 May 1909

Deed Book O9, page 372

-

PRISCILLA FORD AND CLARENCE FORD,
EXECUTORS OF WILLIAM H. FORD

TO

ARLEY B. MAGEE

20 May 1909

Deed Book O9, page 369

The farm where Ford resided at the time of his decease.

WILL OF WILLIAM H. FORD

Will Book F2, page 95

-

PARCEL 1, THE MAIN TRACT:

PRESLEY FORD AND ELIZABETH HIS WIFE

TO

WILLIAM H. FORD

27 Feb. 1892

Deed Book I7, page 380

Division of the tract Bloomsbury between Presley and William Ford. The next recorded deed is a conveyance from William to Presley for the other half of the tract.

Begin at a stone by the south side of the road from Carrollton Church to Leipsic and agreed as the place of beginning for the division line between two farms.

South 6°13' East 160.32 perches to a stake and a stone 62 perches from the original beginning of the whole tract and in line of land of the heirs of Alexander Peterson.

South 85°33' West 62 perches with the line of the Peterson heirs to a stone, original beginning point of the whole tract where formerly stood a large white oak.

North 19°42' West 226 perches to a stone in the line of Jesse S. Vane and a corner to land lately of James H. Hoffecker.

North 70°18' East 47 perches with this tract to a stake in Matthew Ford's field.

South 69°27' East 24 perches to a stake near the door of Henry Rees' house.

South 22°27' East 52.5 perches to a stone.

Thence with the public road South 74°48' East 35.16 perches to a stone at the place of beginning.

109 acres, 3 roods, 27 square perches, part of Bloomsbury conveyed to Presley Ford, deceased, by deed 14 March 1861, and recorded in Deed Book S4, page 108.

WILL OF PRESLEY FORD

21 August 1869

Will Book T1, page 510

Leaves the "Allee Farm on which I now reside" to his sons Presley and William. Refers to an older estate of Solomon Ford.

-

SARAH SAVIN, JAMES D. ALLEE, JONATHAN ALLEE, AND WIFE

TO

PRESLEY FORD

14 March 1861

Deed Book S4, page 108

Begin at a stone near a white oak, corner of A. Peterson and in the line of James Tomlinson, Negro.

North 20°15' West 226.8 perches to a stone in the line of Jesse Vane.

North 69°45' East 48.6 perches.

South 70° East 24.2 perches

South 23° East 42.5 perches.

North 65°30' East 96.5 perches to a stone corner for John M. Voshell (Hillyard's Adventure) and in the line of Isaac Sutton.

South 14° East 66.8 perches to a stone in the road, a corner of Daniel Cummins.

South 5°30' West 124 perches to Hirons Branch.

With the branch, 67.6 perches.

South 85° West 86 perches to the beginning.

220 acres

-

WILL OF ABRAHAM ALLEE

Dated 16 May 1858

Proved 14 June 1858

Will Book S1, page 468

To his daughter Sallie and his sons James and Jonathan, leaves land on Pumpkin Neck adjoining Alexander Peterson, Daniel Cummins, John M. Voshell, and others, containing 60 acres.

-

ASSESSMENT OF ABRAHAM ALLEE'S PROPERTY

1852-1853

Kent County Assessments, Delaware Archives

The assessment shows Abraham Allee owning, among others, one farm of 170 acres, with a log house, which may be the project area.

-

ASSIGNMENT OF BLOOMSBURY TO ABRAHAM ALLEE AND WIFE

6 March 1821

Kent County Archives Warrants and Surveys A2 #39

Undated plot prepared in connection with transfer of 27 acres, part of Barren Hope, from Abraham Allee and wife to Jacob Raymond, "Copied through courtesy of Mr. Herbert Keene from an original owned by William Henshaw, January 1969." Note on the adjacent tract states, "An ancient tract of land called Bloomsbury formerly of Samuel Exels heirs, now belongs to Abraham Allee in right of his wife Susannah, one of the daughters of Francis Denney, deceased, allotted and assigned under and by virtue of Orphans Court."

-

WILL OF FRANCIS DENNEY

Made 7 September 1810

Proved 1 June 1812

Archives Wills A-13, page 207-211

Will Book O1, page 264

Gives his wife a third share of real estate for life in lieu of dower, but a third of personal property outright. States that he has five children and nine plantations and asks the Orphans Court to appoint commissioners to divide the property. Each son's share was to be £100 greater than each daughter's share. The division is mentioned in other documents, but is not among the Orphans Court record books.

-

EASTERN THIRD OF AXELL ESTATE:

ASSESSMENT OF JOHN ALLEE'S ESTATE

1815

Kent County Assessments, Delaware Archives

John Allee's Heirs are credited with 83 acres, all cleared, called the Axle land at $12 an acre.

-

ASSESSMENT OF JOHN ALLEE'S ESTATE

c. 1803-1804

"unofficial" Duck Creek Hundred assessment book, Delaware Archives

The estate of John Allee was credited with 55 acres, 30 improved and 23 unimproved, occupied by Patrick Conner, who was the second husband of Mary Axell. This appears to be the third of Bloomsbury that was assigned to her brother, Samuel (II). The "official" reassessment book for the same time lists 80 acres in the tenure of Patrick Conner. The total John Allee estate was 553½ acres.

-

VALUATION OF JOHN ALLEE ESTATE

Order 30 November 1787

Orphans Court Book D, page 150

Returned 10 February 1791

Case file of John Allee 1787

Orphans Court Book E, page 320

The Orphans Court named James Raymond guardian of Abraham Allee, Presley Allee, and Jonathan Allee, sons of John Allee, who were under the age of fourteen. Raymond then asked for a valuation, which was ordered; the commissioners were to be Silas Snow, Thomas Tilton, and Francis Denney.

John Denney's property included a plantation of 190 acres with a brick house; a tract called Pasture Point with 127 acres and a log dwelling; a woodland tract of 80 acres in Barren Hope, and a parcel of salt marsh.

Also, the commissioners described tract occupied by Patrick Conner, 55 acres, 35 arable, with "a logged dwelling house about eighteen feet square, in which we order a new brick chimney to be put. There is also the logs of a Kitching raised which we order to be covered and finished."

-

ESTATE OF JOHN ALLEE [JUNIOR]

27 February 1787

Will Book M-1, page 132

Letters of Administration were granted to Rachel Allee and James Raymond.

-

WILL OF SAMUEL AXELL THE YOUNGER

Made 11 July 1783

Proved 20 August 1783

Probate files, Delaware Archives

Will Book L-1, page 276

Left his movable estate to his niece Mary McFarlin and his real estate to his "cousin and only friend, John Allee:"

-

CENTER THIRD OF AXELL ESTATE:

SARAH DENNEY, WIDOW

TO

WILLIAM DENNEY
FRANCIS DENNEY
JAMES DENNEY
MARY WILDS AND HUSBAND
SUSANNAH ALLEE AND HUSBAND

16 November 1812

Deed Book O-2, page 21

Francis Denney's widow notes that the estate has been settled, and that the five children had received their farms. She releases her claim to a dower right in return for an annual rent.

-

ESTATE OF FRANCIS DENNEY

Kent County Orphans Court Case File

A petition on behalf of William Denney, the son, filed in Orphans Court 15 February 1813, states that the estate has been divided agreeable to the will. Sarah, the widow, files the petition for a valuation of 130 acres allotted to ~~him~~ William

-

ASSESSMENT OF FRANCIS DENNEY'S LAND

c. 1803-1804

"unofficial" Duck Creek Hundred assessment book, Delaware Archives

Francis Denney is credited with 75 acres, bought of John Macey and brother. In the "official" reassessment book for the same cycle, Denney is credited with one 75-acre plantation in the tenure of Thomas Thompson, which probably is the same tract.

-

HENRY MOLLESTON, SHERIFF

TO

FRANCIS DENNEY

17 May 1799

Deed Book F2, page 187

Writ issued by Common Pleas August 9, 1798, against property of John Macey and Jonathan Macey, "late of Kent County," to satisfy James Gallaher, assignee of John Cole. Describes 60 acres adjoining Francis M. Gardner, heirs of John Allee, and others. Writ of venditione exponas dated December 7, 1798. Francis Denney was the highest bidder. John and Jonathan are sons of John and Prudence Macey, deceased.

-

ESTATE OF PRUDENCE MACEY

December 6, 1796

Orphans Court Book E, page 216

Patrick Conner, who had purchased from Mary Hart, one of the children of Prudence Macey, petitioned the court to appoint five freeholders to divide the real estate among her heirs and legal representatives. The court named James Raymond, Timothy Cummins, William Denney, Edward Joy, and Jacob Stout.

-

ESTATE OF JOHN MASSY [MACEY]

13 July 1796

Will Book N1, page 149

Probate file, Delaware Archives

Letters of administration were granted to John Massy, eldest son. The administrator's account mentions a rent from Patrick Conner in 1797. The distribution account, dated February 1806, shows a balance of £31/7/12 paid to sons John and Jonathan

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TAX ASSESSMENT OF JOHN MACEY

1792 Assessment list, published by Delaware Genealogical Society

John Macey was shown in the 1782 assessment with an assessment of 1, but John, junior, was assessed at the rate of 6.

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TAX ASSESSMENT OF JOHN MASSEY

Kent County 1770 levy list

John Massey was shown in the 1770 levy with "08" assessment, the lowest rate in the county.

-

WESTERN THIRD OF AXELL ESTATE:

MARTHA MCMULLEN

TO

FRANCIS DENNEY

25 December 1801

Deed Book G-2, page 123

Recites that James McMullen left certain parcels under conditions that his children would execute certain conveyances among themselves. Martha, his daughter, has obtained title to the western third of Bloomsbury.

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WILL OF JAMES MCMULLEN

22 May 1782

Probated 12 November 1784

Archives Wills A33, page 1

Will Book M, pages 30-32

-

PATRICK CONNER, JR.,
AND MARY HIS WIFE
AND
SARAH AXELL

TO

JAMES MCMULLEN

12 May 1772

Deed Book T-1, page 249

Recites that Samuel Axell died intestate, leaving 202 acres, part of a larger tract called Bloomsbury on the north of Hirons Branch, a widow and four children. The oldest son died in his minority. Surviving children are Samuel; Prudence, wife of John Massey; and Mary, wife of Patrick Conner, Jr. Surviving children are now of age.

John Massey and Prudence his wife petitioned Orphans Court November 29, 1770 for a division of the land. The division was completed May 7, 1771. Mary Conner was then Mary Griffin, widow of David; this is her portion of the division.

This instrument conveys the widow's dower third and the Conner third to McMullen, a store keeper of "The Cross Roads,"

-

ORIGINAL BLOOMSBURY TRACT:

DIVISION OF THE ESTATE
OF
SAMUEL AXELL

31 May 1771

Loose Orphans Court plots,
Delaware Archives

Orphans Court Book B, pages 131, 148

John Macey and Prudence Macey petitioned Orphans Court November 29, 1770, for division of her father's estate. A dower was set aside. The eldest son had died after the father, leaving no heirs. The three surviving children each received a parcel. The lower part of the dower is described as containing "rough wood land" and "cleared tillable ground." The upper part of the dower is all wood land.

-

PETITION FOR RESURVEY OF BLOOMSBURY

Granted August 15, 1771

Kent County Chancery Case A#2 1771

Sarah Axell (widow), Samuel Axell, Prudence Massey and Mary Griffin petitioned for a resurvey of the Bloomsbury tract, alleged to be 300 acres. All signed with marks.

-

ESTATE OF DAVID GRIFFIN

Letters of Administration 23 April 1770

Administrative account 26 July 1772

Will Book L-1, page 76

Loose probate files, Delaware Archives

William Cook, principal creditor of David Griffin, was granted letters of administration on his estate. The inventory, valued at £11/7/2, was filed with Orphans Court two years later.

-

TAX ASSESSMENT OF DAVID GRIFFIN

1868 Levy List, Duck Creek Hundred

David Griffin was shown with "08" assessment, the lowest rate in the hundred, probably indicating no land holding.

-

ESTATE SETTLEMENT OF SAMUEL EXELL

28 August 1754

Loose Probate Records,
Delaware Archives

An account presented 28 August 1754 showed that the administrator had disbursed more than the inventoried value of the estate.

4 April 1753

Will Book K-1, page 65

Letters of administration were granted to Priestly Raymond, administrator of Samuel Exel, the widow Sarah having refused her right to administer. Raymond is Sarah's brother.

-

PROPRIETARY WARRANT

TO

SAMUEL EXELL (AXELL)

4 December 1741

Kent County Archives
Warrants and Surveys
E1 #12

Recites that Samuel Exell has requested a resurvey of a 300-acre tract now in his possession called Bloomsbury on a branch of Duck Creek first surveyed in 1683 under a warrant from the Kent County court to William Williams. Axell is mentioned as the owner of Bloomsbury in a survey for Abraham Allee of adjacent land.

-

WARRANT TO SAMUEL EXELL

4 December 1741

Kent County Warrant Book A, page 66

The proprietor issued a warrant permitting Samuel Exell to resurvey Bloomsbury according to the original boundaries. The same day Exell received a warrant to survey 100 acres of marsh at the mouth of Hirons Branch, which would not become part of his estate.

-

THOMAS WILLIAMS

TO

SAMUEL EXELL

11 November 1738

Deed Book M-1, page 47

James Morris, under a power of attorney from Thomas Williams, conveys Bloomsbury to Samuel Exell. William Williams, the patentee, had died in 1735, and his son was selling the land.

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SURVEY

FOR

WILLIAM WILLIAMS

4th 7th mo. 1683

Kent County Archives Warrants and Surveys
W5 #27

A tract 320 by 150 perches on a branch of Duck Creek, surveyed by Richard Mitchell.

-

PARCEL 2, SMALL TRIANGLE:

JAMES H. HOFFECKER

TO

WILLIAM H. FORD

28 May 1877

Deed Book W5, page 407

Begin at a stake in low ground in the woods, a corner of Abraham Allee and Elizabeth Morris.

North 68°30' East 45.6 perches to a stake at the edge of the woods, a corner of Abraham Allee.

North 70°30' West 61.3 perches to a stake by the edge of the woods, a corner of Elizabeth Morris.

South 21°39' East 39.5 perches to the place of beginning.

5 acres, 83 square perches.

-

JAMES H. HOFFECKER AND SARAH HIS WIFE, FORMERLY SARAH SAVIN;

WILLIAM P. ROBINSON AND RACHEL HIS WIFE, FORMERLY RACHEL SAVIN;

JAMES H. PRATT AND SARAH HIS WIFE, FORMERLY THE WIDOW OF JOSEPH SAVIN;

AND JOHN W. SAVIN OF CHICAGO

TO

JAMES H. HOFFECKER, JR., OF WILMINGTON

31 January 1877

Deed Book W5, page 389

John B. Savin by his will devised to his wife Betsey Savin life rights in one-third of his land, which was on her decease to go to his four younger children, Sarah, Rachel, Joseph, and John.

At the September 1857 term of Kent County Court of Chancery, tracts labelled C (the mansion house) and I (this property) were set apart for the widow. The rest of the property could not be divided.

On 20 November, 1856, Jonathan Brown and Betsy Brown, his wife, formerly Betsy Savin, conveyed to Hoffecker all her estate, the purpose of the deed being to extinguish the life estate of Betsy.

Joseph Savin died and left a widow, Sarah.

DIVISION OF THE ESTATE
OF
JOHN B. SAVIN

Kent Chancery Partition Docket C, page 119

Triangular parcel of woodland, 5 acres 86 square perches, labelled "I" on the plot.

WILL OF JOHN B. SAVIN

Dated 3 March 1833

Proved 23 January 1838

Kent County Will Book R1, page 97

Widow, Betsey, would receive her life interest in one-third of real estate. Required that his youngest four children would receive his real estate. Two thirds of his personal estate would be divided among his four older children.