

INTRODUCTION

The purpose of this report is to describe the results of final data recovery excavations at Site 7K-C-360 and the Dover Downs site (7K-C-365A and 7K-C-365B), which are located within the State Route 1 Relief Corridor project area in Dover, Kent County, Delaware (Figure 1; Plate 1). The State Route 1 is a new 50 mile limited access highway that will run from I-95 south to Dover Air Force Base. The Dover Downs site and Site 7K-C-360 were identified and investigated during earlier Phase I/II surveys of the State Route 1 Relief Corridor project area (Bachman, Grettler, and Custer 1988; Riley et al. 1993). Data recovery excavations were undertaken by the University of Delaware Center for Archaeological Research (UDCAR) for the Delaware Department of Transportation (DELDOT) and the Federal Highway Administration (FHWA) under Section 106 of the National Historic Preservation Act to mitigate the effects of the proposed State Route 1 Relief Corridor construction on significant cultural resources as defined by the National Register of Historic Places (36CFR60).

SITE SETTING AND ENVIRONMENT

Site 7K-C-360 and the Dover Downs site (7K-C-365A/B) are located within the Mid-Drainage Zone of the Low Coastal Plain Physiographic Province (Figures 2 and 3). The Low Coastal Plain is underlain by the sand deposits of the Columbia Formation (Jordan 1964:40), and reworking of these sediments has produced a relatively flat and featureless landscape. Elevation differences range up to 30 feet (10 meters), and these small differences are moderated by long gradual slopes. These differences are, nonetheless, sufficient to cause differential distribution of plant and animal species. The Mid-Drainage Zone is a strip of land located between the Delaware Shore and the Mid-Peninsular Drainage Divide and includes the central sections of all the Coastal Plain tributaries of the Delaware River (Figure 4). The modern tidal limit along the drainages marks the center of the zone, and the major drainages and their tributaries are fresh throughout the inland half of the zone. Some tidal marshes and poorly-drained areas are found on isolated headlands between major drainages and their tributaries. The combination of brackish and freshwater resources makes this zone one of the most intensively occupied areas in prehistoric times in Delaware (Custer 1984a; Custer and De Santis 1986).

Site 7K-C-360 is located on a well-drained sandy knoll in a wooded area on the north side of Dyke Branch approximately one mile (1.61 km) southeast of the Leipsic River and east of Cheswold in northeastern Kent County, Delaware. The terrain in the nearby vicinity of the site contains intermittent sandy rises interspersed with lower, poorly-drained areas. The knoll on which the site lies measures approximately 350 feet by 200 feet (105m x 60m) and is aligned in a north-south direction. The site, which measures 98 feet by 131 feet (30m x 40m) in dimension, is situated on the northern half of the knoll. To the east and west, the knoll drops off steeply to seasonally inundated low swampy areas.

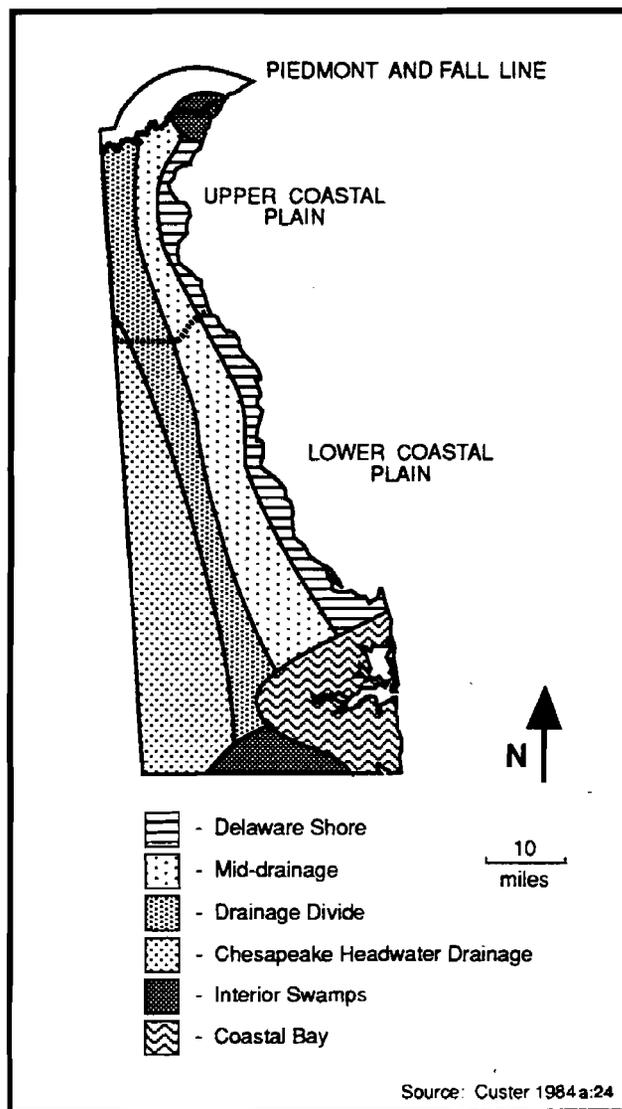
The USDA soil survey of Kent County, Delaware (Matthews and Ireland 1971, Sheet 13) shows that the site is situated in a large expanse of Fallsington series loam, which is characterized as poorly drained soil on uplands. Native vegetation consists of oak, birch, swamp maple, holly, and other wetland hardwoods (Matthews and Ireland 1971:12). Most of the wet woods surrounding the site, which form the headwaters of Dyke Branch, are underlain by this soil type.

The soil survey, however, was not discriminating to the point where it could discern small rises like those at the Dover Downs site and Site 7K-C-360, which appear to have soils similar to the Sassafras series found in nearby agricultural fields. Sassafras soils are well-drained sand and sandy clay loams on uplands which support mixed deciduous forests (Matthews and Ireland 1971:23).

Results of geomorphological investigations at 7K-C-360 and Dover Downs site, Hill A confirm that these sites have been situated in the midst of freshwater wetlands throughout the Holocene and have experienced at least three distinct depositional events during the Holocene, most likely due to aeolian

FIGURE 2

Delaware Physiographic Zones



processes and slope wash. These Holocene deposits overlie sands and gravels of the Pleistocene Columbia Formation. Pollen samples retrieved from cores taken at Site 7K-C-360 show that the late Pleistocene environment surrounding the wetlands consisted of a pine-spruce forest. Non-arboreal species, including sedges, grasses, composites, fresh water plants, and mosses, were also present. A more detailed discussion of these results is included in Appendix III.

The Dover Downs site, Hill A is located on a knoll that lies adjacent to Muddy Branch, an easterly flowing tributary of Green Creek and Simon's River, which empty into Delaware Bay approximately 10 miles (16 km) downstream from the site. The knoll measures approximately 164 feet by 328 feet (50m x 100m) and rises from 21 feet (6.3m) to a maximum height of 29.1 feet (8.8m) above sea level over a distance of 200 feet (60m). This degree of elevation change is quite pronounced and is rarely found in central Kent County, Delaware. The long axis of the rise is oriented roughly northeast-southwest and Muddy Branch meanders to within 100 feet (30m) of the base of the knoll. Muddy Branch is only about four to six feet (1.5m-2.0m) wide at this point and originates in swamps no more than two kilometers north of the site. The stream surface lies at an elevation of 19 feet (5.8m) above sea level, so the elevation difference between the stream and knoll crest is 10 feet (3m). The Dover Downs site, Hill B (7K-C-365B) lies about 200 feet (61m) southwest of Hill A and is also situated atop a knoll which rises to a height of approximately 27 feet (8.2m) above sea level.

The USDA soil survey of Kent County (Matthews and Ireland 1971, Sheet 13) shows that these sites are situated in a large expanse of Othello series silt loam, which is characterized as a poorly drained soil on uplands. Native vegetation consists of gum, holly, swamp maple, many species of oak, and other wetland hardwoods (Matthews and Ireland 1971:17). Most of the wet woods surrounding the sites, which form the headwaters of Muddy Branch, are underlain by this soil type.

During the times of prehistoric occupation of the sites, the knolls on which these sites were situated were probably "oases" of well drained habitable land surrounded by uninhabitable poorly drained freshwater wetlands. Little is known of the environmental history of such interior wetlands, but it is likely that wetter-adapted oaks, maple, and gum characterized the tree cover over the past 12,000 years even though local climates changed dramatically during this time period. Given the relatively constant poor drainage conditions in the poorly drained woodlands, it is likely that the sites' well drained knolls always represented convenient habitation locales from which the rich resources of the poorly drained woodlands could be exploited.

FIGURE 3

Schematic Plan View and Profile of Site 7K-C-360, Dover Downs Site Hill A (7K-C-365A) and Hill B (7K-C-365B)

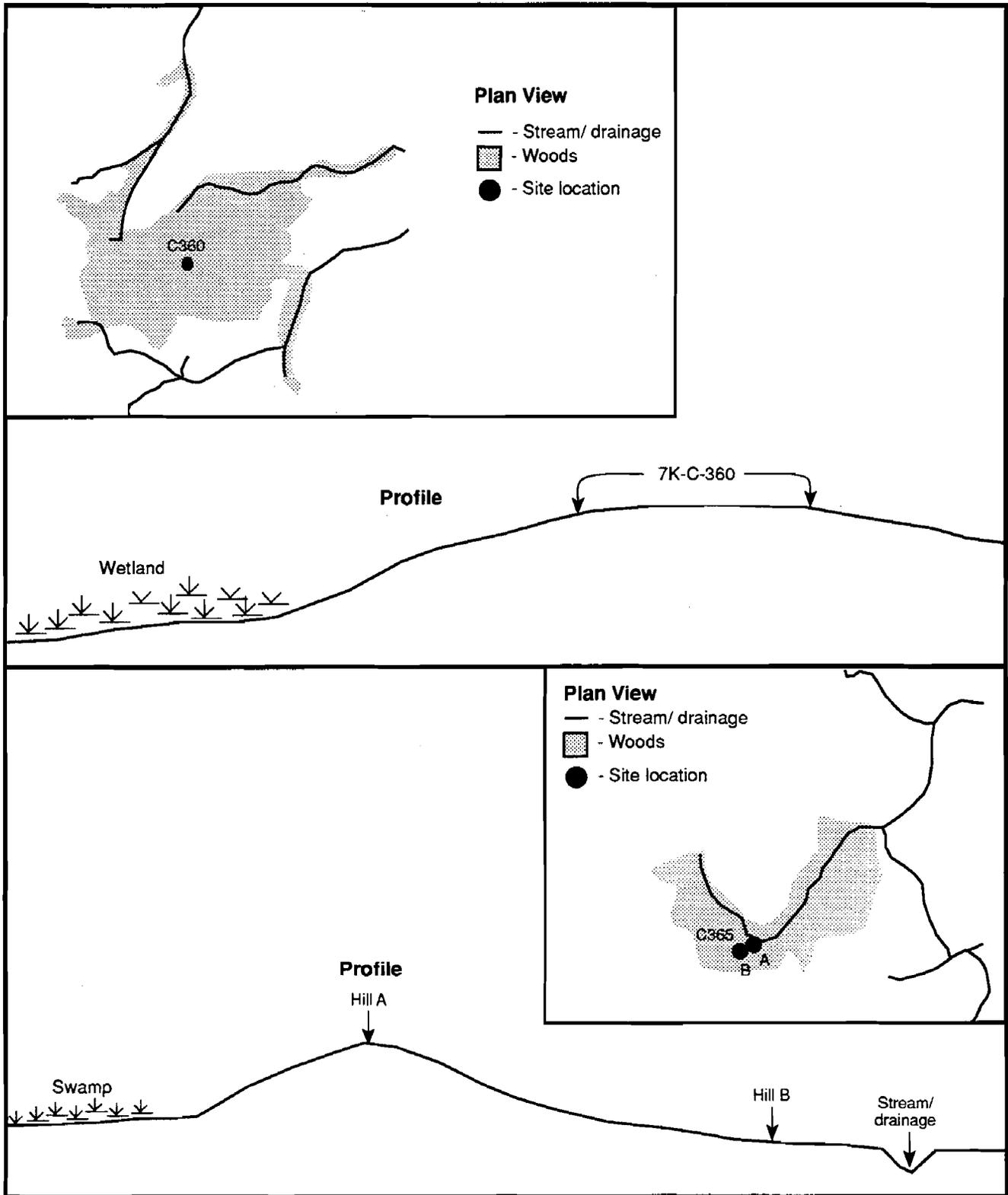
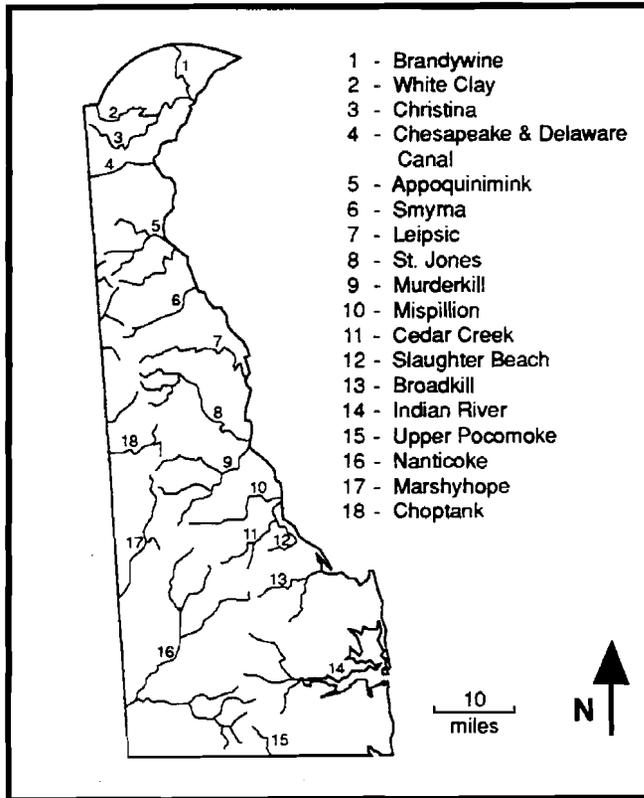


FIGURE 4

Delaware Drainages



REGIONAL PREHISTORY

This summary of the regional prehistory is abstracted from the work of Custer (1984a, 1989). The prehistoric archaeological record of the Delaware Coastal Plain can be divided into four large blocks of time: The Paleo-Indian Period (c.a. 12,000 B.C. - 6500 B.C.); the Archaic Period (6500 B.C. - 3000 B.C.); the Woodland I Period (3000 B.C. - A.D. 1000); and the Woodland II Period (A.D. 1000 - A.D. 1650). A fifth time period, the Contact Period, from A.D. 1650 to A.D. 1750, marks the final phase of occupation by Native American groups of Delaware in anything resembling their pre-European Contact form. Each of these periods is described below (Figure 5).

Paleo-Indian Period (12,000 B.C. - 6500 B.C.)

The Paleo-Indian Period encompasses both the final retreat of Pleistocene glacial conditions from eastern North America and the subsequent establishment of more modern Holocene environments. The distinctive feature of the Paleo-Indian Period is an adaptation to the cold, and alternately wet and dry, conditions at the end of the Pleistocene and the beginning of the

Holocene. Paleo-Indians relied on a hunting and gathering adaptation in which animal food resources comprised a major portion of the diet. Hunted animals may have included now-extinct megafauna and moose. A mosaic of deciduous, boreal, and grassland environments would have provided a large number of productive habitats for these game animals in central Delaware and watering areas would have been particularly good hunting settings.

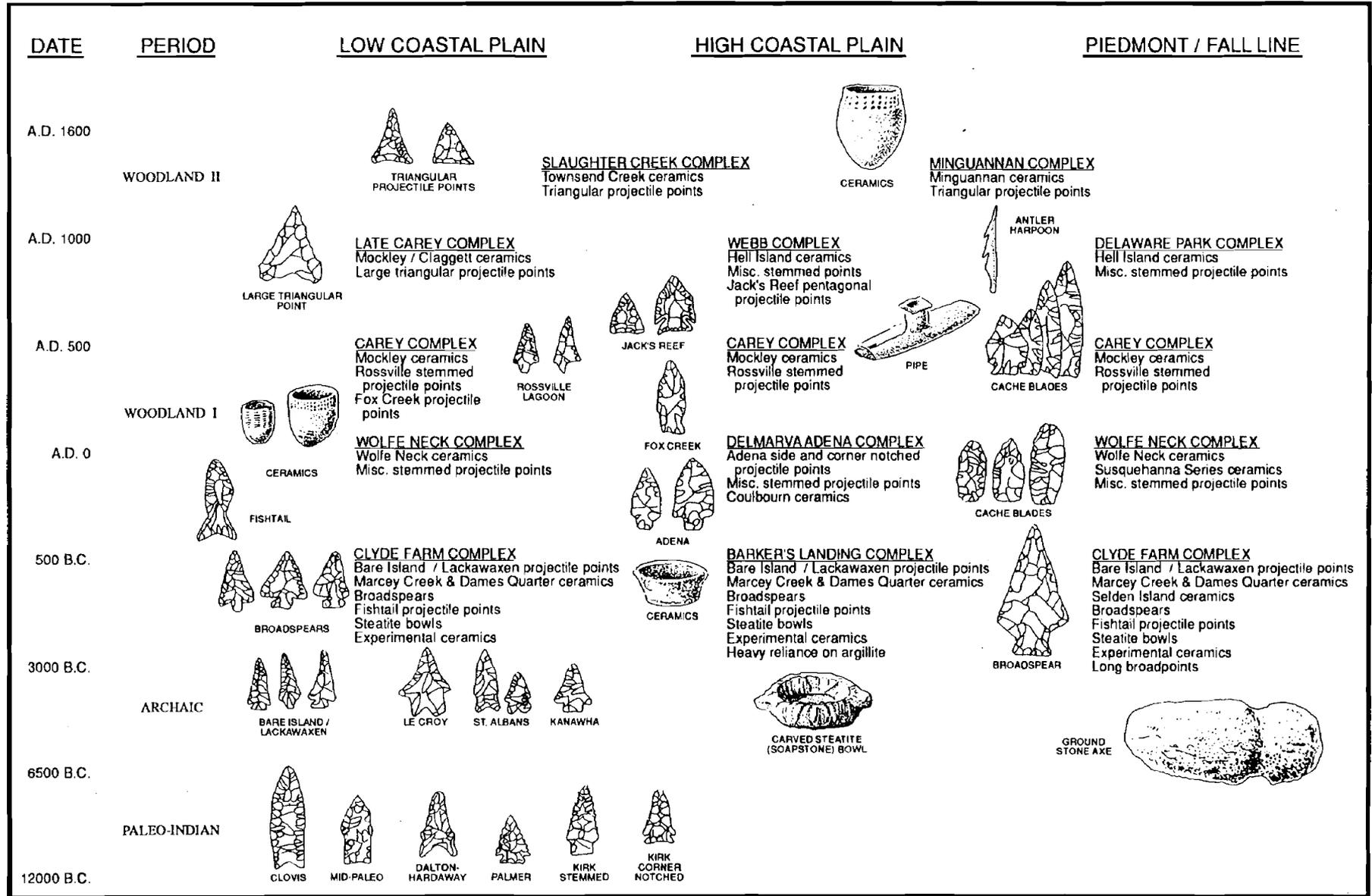
Tool kits of Paleo-Indian groups were oriented toward the procurement and processing of hunted animal resources. A preference for high quality lithic materials is apparent in the flaked stone tool kits and careful resharpening and maintenance of tools was common. A mobile lifestyle in which groups focussed on game-attractive environments is hypothesized with a social organization consisting of single and multiple family bands. Throughout the 5,500 year time span of the period, this basic adaptation remains essentially uniform, although some adjustments occur with the appearance of Holocene conditions in the latter part of the Paleo-Indian Period.

Numerous Paleo-Indian point finds are noted for central Delaware, although all are surface find spots which shed little light on Paleo-Indian lifeways on the Delmarva. These finds are usually made on well-drained knolls adjacent to poorly-drained areas. The Hughes Paleo-Indian Complex (sites 7K-E-10, 7K-E-24, and 7K-E-33), to the southwest of the project area, produced several varieties of fluted and notched points from well-drained sites adjacent to a number of different types of swampy settings (Custer 1984a:58). Also in central Delaware, it is hypothesized that bay/basin features may have attracted Paleo-Indian sites (Custer, Cavallo and Stewart 1983), although no clear associations have been demonstrated.

Archaic Period (6500 B.C. - 3000 B.C.)

The Archaic Period is characterized by an adaptation to the fully-emerged Holocene environments of Delaware. Mesic forests of oak and hemlock were predominant, while the

FIGURE 5 Cultural Complexes of Delaware



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accompanying reduction of grasslands in the face of warm and wet conditions caused the extinction of many of the grazing animals hunted during Paleo-Indian times, although browsing species such as deer flourished. Sea level rise is also associated with the beginning of the Holocene in Central Delaware; its major effect would have been to raise the local water table, thereby creating a number of large interior swamps. Adaptations shifted from the hunting focus of the Paleo-Indian Period to a generalized foraging pattern in which plant food resources played a more prominent role. Swamp settings, such as at Churchman's Marsh in northern Delaware, supported large base camps, as indicated by remains at the Clyde Farm site. A number of small procurement sites in favorable hunting and gathering locales are known from central and southern Delaware.

With the addition of plant processing tools such as grinding stones, mortars, and pestles, Archaic tool kits were more generalized than those of Paleo-Indian groups. A mobile lifestyle was still common, with a wide range of resources and environmental settings utilized on a seasonal basis. A shifting band level of organization which saw the waxing and waning of group size in response to seasonal resource availability is evident.

Woodland I Period (3000 B.C. - A.D. 1000)

The Woodland I Period coincides with dramatic local climatic and environmental shifts that seem to be part of larger scale changes occurring throughout the Middle Atlantic region at this time. Pronounced warm and dry conditions set in, lasting from 3000 B.C. to 1000 B.C. Mesic forests were replaced by xeric forests of oak and hickory, and grasslands again became common. Some interior streams dried up, but the overall effect of these changes was an alteration of the environment, not a degradation. Continued sea level rise at a reduced rate made many areas of the Delaware River and Bay shore the locations of large brackish water marshes which were especially high in productivity.

These changes in environment and resource distributions brought about a radical shift in adaptations for prehistoric groups. Important areas for settlements include the major river floodplains and estuarine swamp/marsh areas. Large base camps are evident at several settings in Central Delaware, such as at the Barker's Landing, Coverdale, Hell Island, and Robbins Farm sites. These sites seem to have been occupied by larger groups than Archaic base camp sites and may have been the loci of year-round habitations. The overall tendency in this Period is toward a more sedentary lifestyle.

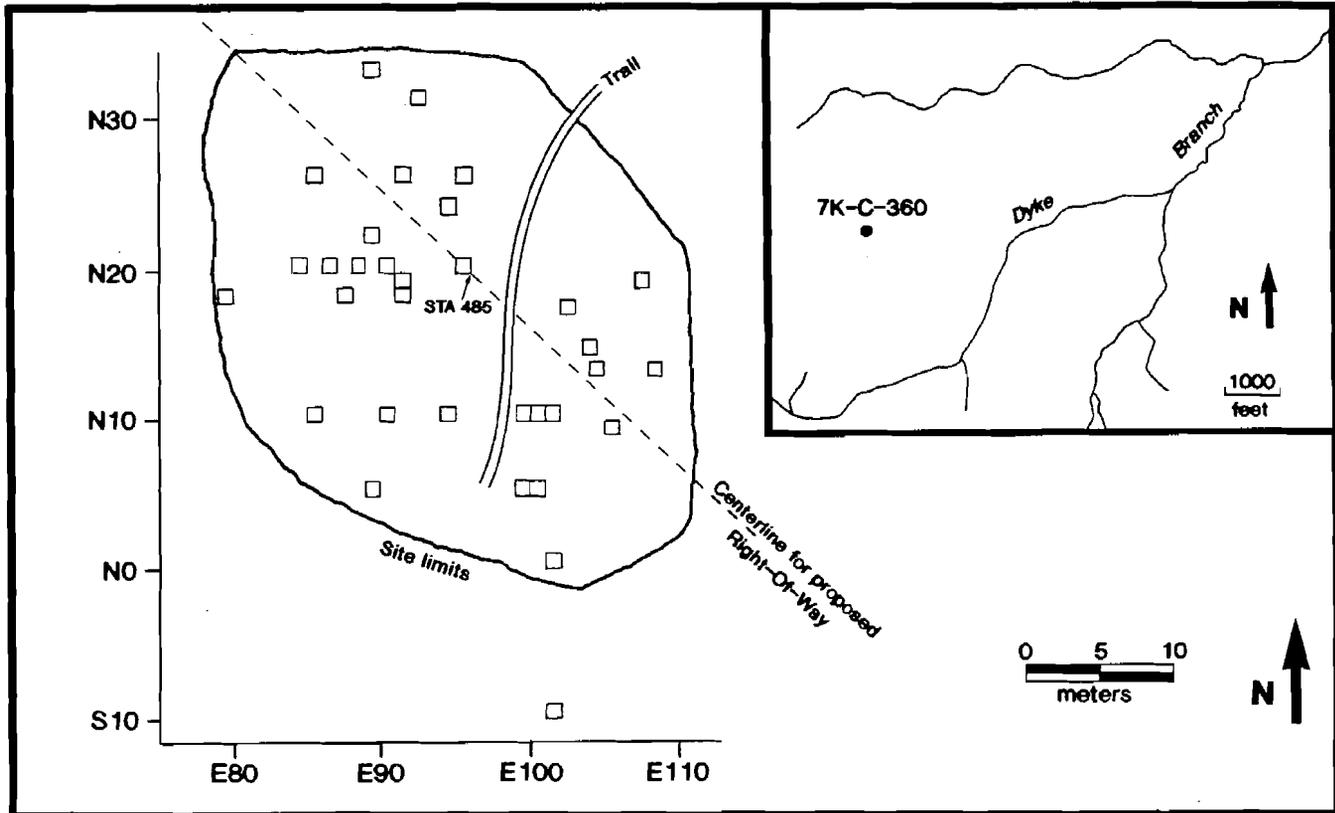
Woodland I tool kits show some minor variations as well as some major additions from previous Archaic tool kits. Plant processing tools become increasingly common, indicating intensive harvesting of wild plant foods that may have approached the efficiency of agriculture by the end of the Woodland I Period. Chipped stone tool assemblages changed little from the preceding Archaic Period, save for the introduction of broad-blade, knife-like processing tools. The addition of stone, and then ceramic, vessels is also seen. These items enabled more efficient cooking of certain foods and may also have functioned as storage containers for surplus plant foods. Storage pits and house features are also known for Northern Delaware during this period from sites such as Clyde Farm and Delaware Park.

Social organizations also seem to have undergone radical changes during this period. With the onset of relatively sedentary lifestyles and intensified plant harvesting which might have yielded occasional surpluses, incipient ranked societies may have developed. Potential indicators of this include extensive trade and exchange in lithic materials used for tools as well as non-utilitarian artifacts, and caching of special artifact forms.

Woodland II Period (A.D. 1000 - A.D. 1650)

In many areas of the Middle Atlantic, the Woodland II Period is marked by the appearance of agricultural food production systems; however, in the Coastal Plain of Delaware, no such shift in subsistence strategies is apparent (Custer and Cunningham 1986:24). Woodland I settlements, especially the large base camps, continued in many instances to be occupied during the Woodland II Period, with very few changes in basic lifestyles and overall artifact assemblages indicated (Stewart,

FIGURE 6 Phase II Test Excavations at Site 7K-C-360



Hummer and Custer 1986). Intensive plant utilization and hunting remained the basic subsistence activities up to European Contact. Similarly, no major changes are seen in social organization for the Period in central Delaware.

Contact Period (A.D. 1650 - A.D. 1750)

The Contact Period begins with the arrival of the first substantial number of Europeans in Delaware. The period remains enigmatic for Delaware due to the paucity of known archaeological sites that clearly date to this time. Site 7NC-E-42 in northern New Castle County is the only Contact component yet investigated in the State (Custer and Watson 1985). Its small size, impoverished assemblage of European goods, and the persistence of aboriginal lithic technology indicated at the site contrasts with the much larger Contact manifestations known from neighboring southeastern Pennsylvania and elsewhere. These findings support the belief that Native American groups in Delaware interacted little with European groups at this time, and were under virtual domination of the Susquehannock Indians of southern Lancaster County, Pennsylvania. The Contact Period ends with the virtual extinction of Native American lifeways throughout the Middle Atlantic region, save for a few remnant groups.

PREVIOUS RESEARCH

The data recovery excavations at the Dover Downs sites and Site 7K-C-360 were the continuation of earlier studies at all three sites, and this earlier research is described below. All three sites (7K-C-360, 7K-C-365A and 7K-C-365B) and were identified by University of Delaware Center

for Archaeological Research (UDCAR) personnel during a Phase I survey of the Early Action Segment of the proposed State Route 1 Relief Corridor (Bachman, Grettler, and Custer 1988) between May, 1987 and March, 1988. The field work was conducted in two phases, the first phase of which began in 1987 and the second in 1990.

The first phase at 7K-C-360 consisted of a pedestrian survey and a series of shovel test pits (Bachman, Grettler, and Custer 1988). Additional work in 1990 included the excavation of 33 1m x 1m test units (Riley et al. 1993) (Figure 6). Artifacts recovered during these initial tests included one contracting stem point and two bifurcate base points, flake tools, utilized flakes, cores, debitage, and numerous fire-cracked rocks. The presence of projectile points and tools and the absence of other bifaces, ceramics, and pit features suggested that the site was small and may have been either a procurement site or a small, transient camp. Based on the types of projectile points recovered, Archaic and Woodland I occupations were indicated.

Since these artifacts were recovered from undisturbed subsoil contexts, the possibility of recovering additional artifacts from intact contexts, as well as features and living surfaces, was thought to be good. On the basis of this potential for additional buried *in situ* artifacts, the site was determined to be eligible for listing on the National Register of Historic Places, and data recovery excavations were the recommended mitigation alternative.

An earlier planning survey conducted by UDCAR in 1985 for the proposed project identified several scatters of prehistoric artifacts in the nearby vicinity of Site 7K-C-360 (Custer, Bachman, and Grettler 1986). Artifacts recovered from these surface collections included a few diagnostic artifacts dating to the Woodland I and Woodland II periods, numerous fire-cracked rocks, and a few non-diagnostic bifaces as well as cores, flake tools, utilized flakes, and debitage. No further work has since been conducted on these sites that would clarify their roles in the Woodland I and II settlement systems, but these limited data suggest that both large and small base camps as well as procurement sites are present in the area surrounding Site 7K-C-360.

Phase I testing at Dover Downs, Hill A (7K-C-365A) consisted of a pedestrian survey of the crest of the knoll and the excavation of three 3' x 3' test units (Bachman, Grettler, and Custer 1988). Additional work in 1990 included the excavation of seventeen 5' x 5' test units, two 2.5' x 5' test units, and thirty-two 2.5' x 2.5' test units (Riley et al. 1993) (Figure 7). Artifacts recovered during these initial tests included 18 diagnostic bifaces spanning the Paleo-Indian through Woodland I periods, Wolfe Neck ceramics, which date to the Woodland I period, Killens ware and Minguannan ceramics, which date to the Woodland II period, several non-diagnostic bifaces, cores, flake tools, a double-sided mortar, fire-cracked rocks, carbonized wood and nut hull fragments, and hundreds of unretouched waste flakes. In addition, several prehistoric pit features were located, and a sample of these was fully excavated.

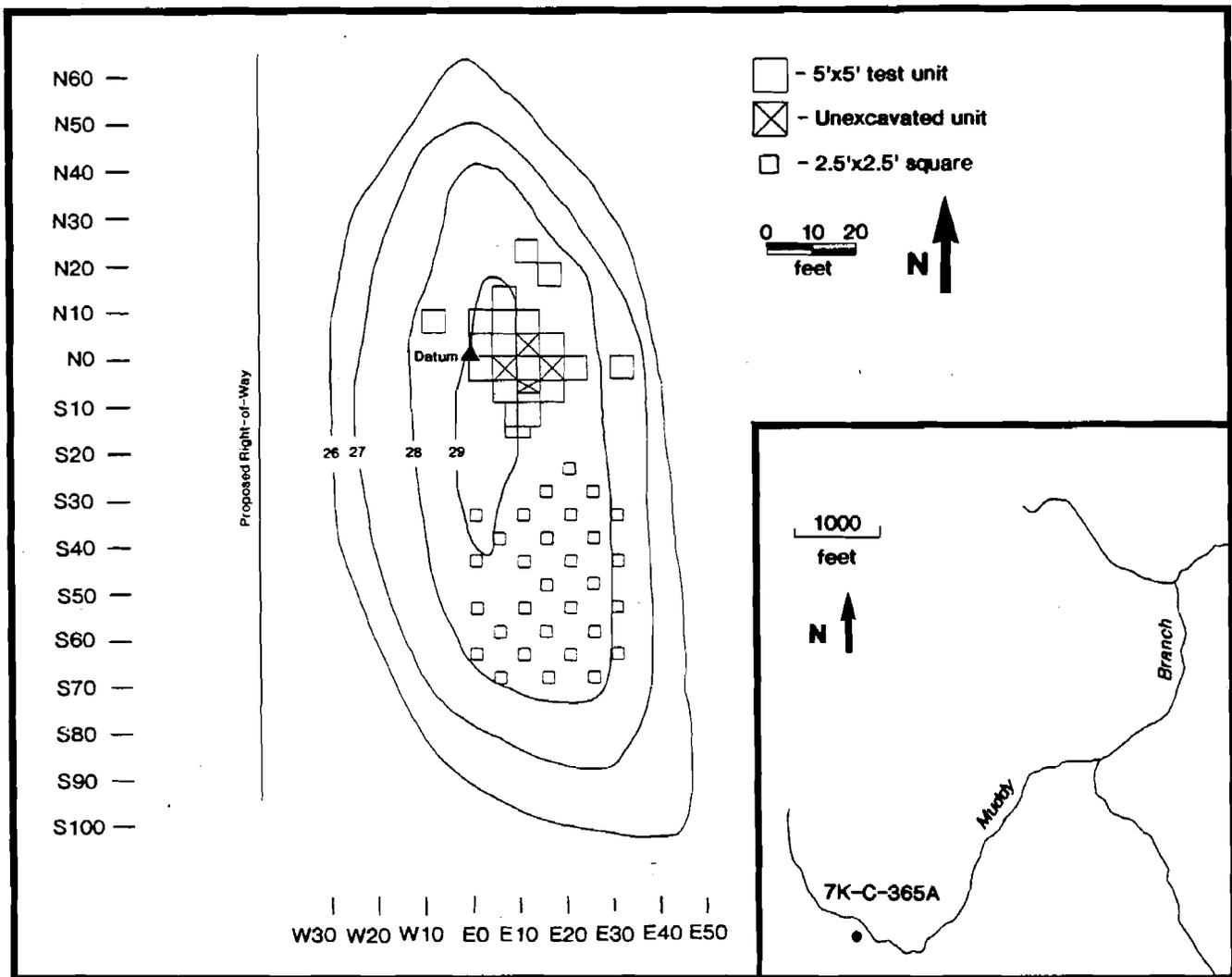
Flotation analysis of samples from features and non-feature contexts from throughout the site indicated that organic preservation was good and wood charcoal was present. A combination of point types, radiocarbon dates and/or ceramics indicated that all four major periods of Delaware prehistory were represented in good stratigraphic context.

On the basis of these data, the site was determined to be eligible for the National Register of Historic Places. Furthermore, because of great potential for the site to yield additional significant information on Delaware prehistory, data recovery excavations were the recommended mitigation alternative.

Phase I testing at Dover Downs, Hill B (7K-C-365B) consisted of a pedestrian survey and the excavation of two 3' x 3' test units (Bachman, Grettler, and Custer 1988). This testing located a large quartzite chipping area in addition to other prehistoric artifacts, including waste flakes of other materials, fire-cracked rocks, and one biface distal fragment. Phase I testing at this site also located numerous eighteenth century ceramics, indicating a sizable historic occupation (Bachman, Grettler, and

FIGURE 7

Phase II Test Excavations at the Dover Downs Site, Hill A (7K-C-365A)



Custer 1988; Grettler et al. 1991). On the basis of the presence of both prehistoric and historic artifacts from intact contexts and the proximity of the site to a known National Register eligible site (7K-C-365A) within the right-of-way, a Phase II excavation was undertaken.

Prior to the 1987 UDCAR survey, there were no recorded prehistoric sites in the immediate vicinity of the Dover Downs sites. However, numerous multi-component sites in the Dyke Branch and Muddy Branch drainages had been surface collected by Dover residents Andrew Leitzinger and Christopher Chapman about 2-5 km (1.5-3 miles) downstream from the Dover Downs and 7K-C-360 sites. Over 7,000 artifacts were collected from 21 sites in these drainages. A catalog of the sites and artifacts in the Leitzinger/Chapman collection is noted in Custer, Bachman, and Grettler (1986:Appendix II). The artifacts collected from these sites are representative of various cultural complexes from the Late Paleo-Indian Period (Kirk and Palmer corner-notched points) through the Archaic, Woodland I, and Woodland II periods. Macro-band base camps are widely represented in the collected sites, and micro-band base camps and procurement sites are also present. Non-local lithic materials, such as argillite and rhyolite, are a significant minority present in the collection, indicating either direct long range procurement or participation in exchange networks. The locations of the sites

represented in the Leitzinger/Chapman collection are similar to those at 7K-C-360 and Dover Downs in terms of topographic settings and distance from water, although the Dover Downs sites are located on much more pronounced rises.

RESEARCH DESIGN AND RESEARCH METHODS

Particular research questions and methods for Site 7K-C-360 and Dover Downs were pursued in line with the predictive models and generalized prehistoric research issues developed for the State Route 1 Corridor archaeological sites in Kent County which are discussed in Custer, Bachman, and Grettler (1986:172-178), Custer, Bachman, and Grettler (1987:30-42) and Custer, Jehle, Klatka, and Eveleigh (1984). The basic research goal, which was the focus of data recovery excavations at both the Dover Downs site and Site 7K-C-360, was the determination of the sites' roles in the local settlement system through time. Previous excavations at 7K-C-360 indicated occupations spanning the Archaic and Woodland I periods (6500 B.C. - A.D. 1000). Prior excavations at Dover Downs, Hill A indicated that the site's occupation spanned nearly 9,000 years, covering all four periods of Delaware prehistory. Prior excavations at Dover Downs, Hill B, on the other hand, indicated a more limited span of occupation at that site covering the Woodland I and Woodland II periods (3000 B.C. - A.D. 1650). Data from the sites' excavations indicate that the major occupations at all three sites date to the Woodland I period (3000 B.C. - A.D. 1000). Present models of Coastal Plain prehistoric settlement patterns during this period (Custer 1984a:132, 1989:188-190) stress an adaptation focused on large habitation sites in major riverine and coastal settings. Periodic short-term forays would then have been made to surrounding areas to procure certain types of resources. These forays presumably produced numerous small, scattered archaeological sites in interior areas away from the major drainages. Because these sites seem to be intermediate in size and are located in the midst of an interior freshwater wetland, they do not fit with the existing models. Therefore, the excavation of these sites in order to produce data that can be used to expand and refine existing settlement models was a primary goal of the present research.

Based on the Phase I/II research, all three sites appeared to be either small transient camps (similar to base camps, except smaller) that were inhabited by small social groups, or procurement sites. They were thought to be identical in function and seasonal occupation to other larger Coastal Plain base camps, only smaller in size. It has also been suggested that such camps were occupied during different seasons than the larger base camps, and represent alternate locations for smaller segments of social units within a seasonably varied fusion-fission settlement system (Figure 8). Another possibility is that these smaller base camp settings were occupied by small groups engaged in specialized resource procurement activities. Such sites may have been used as "staging/processing" locations. This type of site would have been used as a base from which procurement forays commenced and in which initial processing of resources may have also taken place (Figure 9). Such a configuration is known from the Hawthorn site in the Churchman's Marsh area of northern Delaware (Custer and Bachman 1984). In addition to clarification of the roles of these sites in the local settlement system, then, a further goal of data recovery excavations was the establishment of a body of descriptive data on these sites that could be compared to data from other sites in the region.

Because the major goal of the research at Dover Downs and 7K-C-360 was to understand the sites' roles in the regional settlement system through time, it was important to learn during what time periods the sites were occupied and what kinds of activities took place at the sites through time. Because these sites were relatively small and their functions specialized, the variety of tool types would likely have been more limited than those at larger base camps. Therefore, determination of the range of activities represented at the sites was an additional goal of the data recovery excavations.

Because Phase I and II research at 7K-C-360 and Dover Downs indicated that the sites contained multiple components, a further focus of research in Phase III investigations was to identify separate temporal occupations and attempt to reconstruct prehistoric lifeways through time. Therefore, the prerequisite of establishing vertical integrity was a priority of the present research.

FIGURE 8
Micro-Band Settlement Model

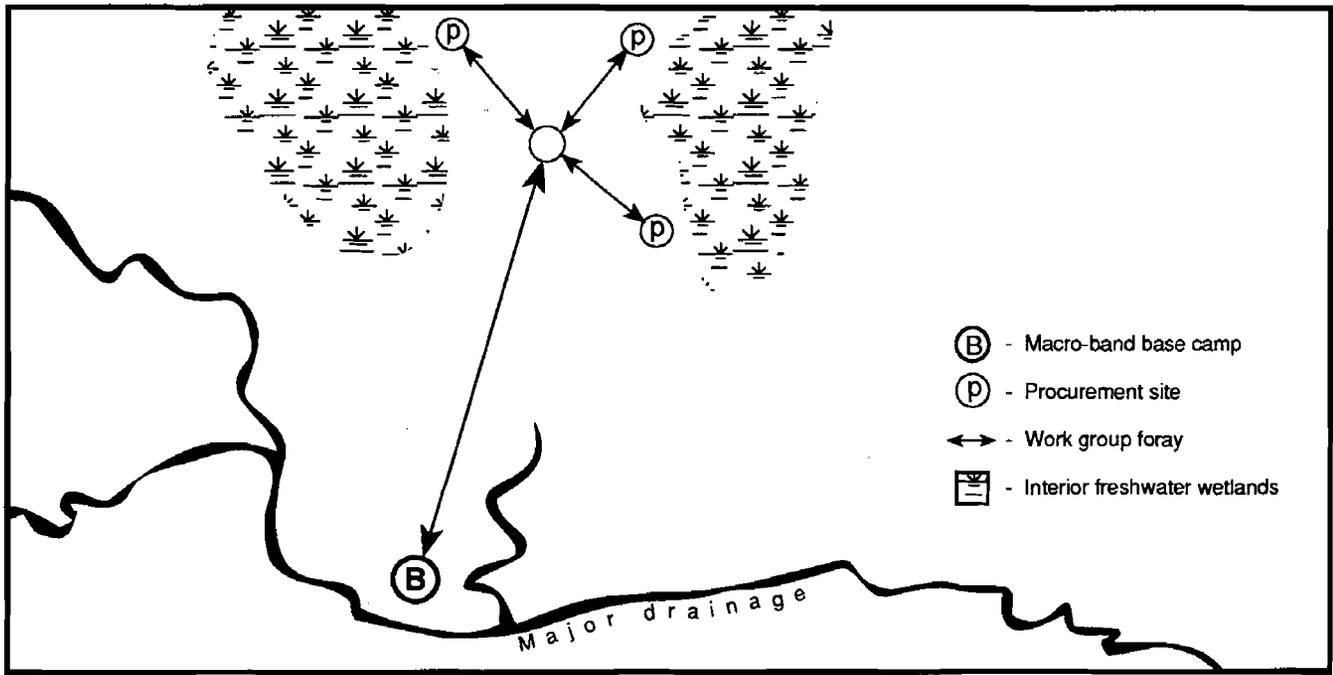
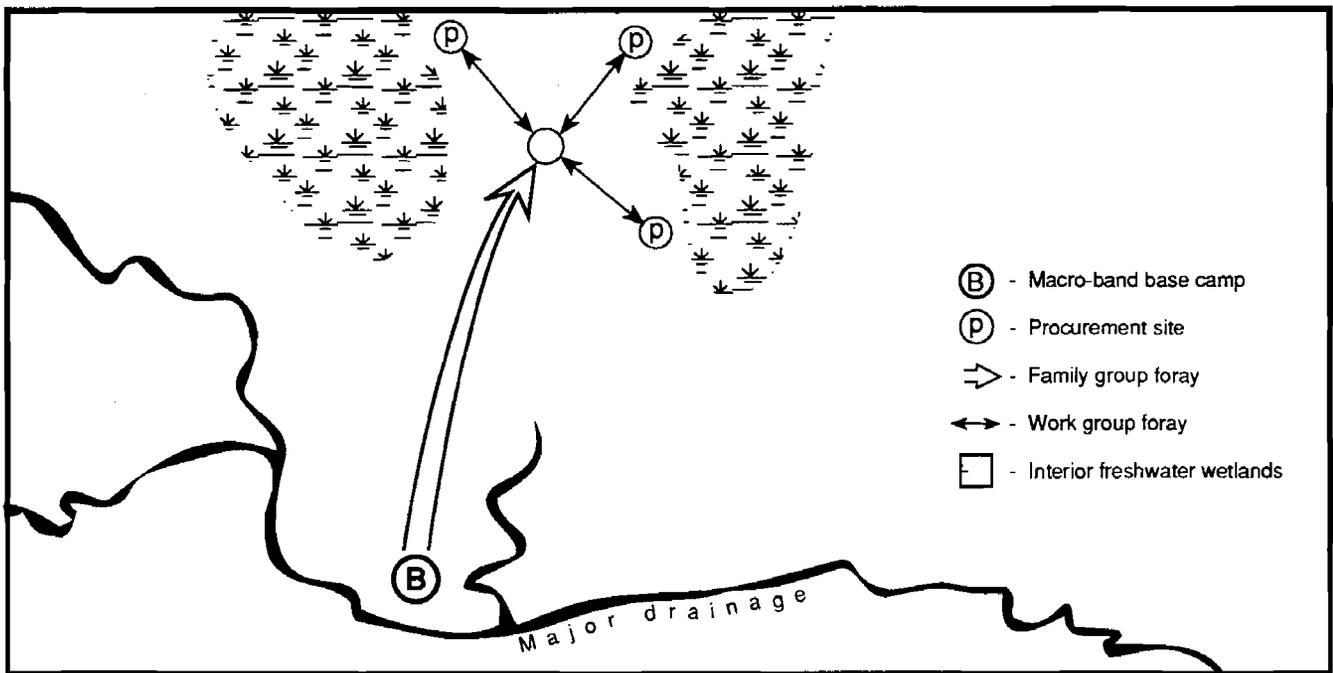


FIGURE 9
Procurement/Staging Settlement Model



Phase II soil profiles from 7K-C-360 and Dover Downs showed that 7K-C-360 contained a relatively thick accumulation of Holocene deposits whereas the Dover Downs site contained only a thin accumulation. Because these sites were situated in similar environmental settings and were occupied contemporaneously for similar purposes, another goal of Phase III research was to study the sites' geomorphology to better understand site formation processes and to reconstruct local paleoenvironments. Vibracore and hand-augered core samples were taken by geologists from the University of Delaware from areas surrounding both 7K-C-360 and Dover Downs Hill A. A report of the results was prepared and is included in the appendix section of this report.

Finally, the location of the sites at some distance from primary sources of lithic raw materials posed questions regarding the organization of lithic technology at the sites. Previous research indicated that quartzite chipping areas were present at both the Dover Downs site, Hill B and Site 7K-C-360. A final goal of the present research is the determination of the means of securing lithic raw materials in such a setting, the processes of converting these materials into usable tools, the practices associated with maintenance and discard of these tools, and the implication of these practices in terms of regional settlement patterns and adaptations. Low power magnification (40X) was used to analyze use-wear patterns and determine tool functions, and flake attribute analyses were conducted to determine whether the lithic technology of the sites' occupants was biface or core-based.

Phase I/II testing at 7K-C-360 included 33 one meter square test units excavated along and across the linear knoll on which the site was located (Figure 6). During these investigations, three features (including two hearths and a quartzite reduction area) were identified, and two sections of higher artifact densities were delineated. The northern section falls from Grid North 15 to North 34, and east from Grid East 82 to East 96 (Figure 10). The southern section runs from North 15 south to North 0, and east from East 97 to East 101 (Figure 10). These two areas were selected as the focus of Phase III Data Recovery excavations.

Using the grid established during Phase II excavations, a series of one-meter square test units were first excavated systematically at approximately two-meter intervals across both the northern and southern sections. These excavations, combined with information from Phase I and II testing, were used to establish a clearer picture of artifact distribution across the site and to identify the areas of highest artifact density within each section. A third goal was the identification of additional features. No new features were found, but four areas of high artifact concentrations were located, three in the northern section, and one in the southern section (Figure 10). Three of these areas correspond to the locations of the features found during Phase I/II research: a possible hearth around N5E99, a quartzite chipping feature around N10E100, and a second possible hearth area around N20E90. The four sub-areas were then subjected to contiguous one-meter square unit block excavations. A total of 109 new one-meter square units were excavated during Phase III research.

Each one meter square unit was subdivided into four 50 cm square blocks, labeled by their compass coordinates. These blocks were the minimum provenience unit. All excavated soils were screened through 1/4-inch mesh screen. The depth of excavation levels initially started at 10 cm. It quickly became apparent that the horizontal distribution of artifacts did not vary greatly with depth, and that the vertical position of artifacts had been disturbed. The 10 cm level depth was therefore retained, with the assumption that thinner excavation levels were not necessary. Attempts were made to excavate the 10 cm arbitrary levels within natural soil horizons, and this was possible with some soils. As will be discussed in detail in the Site Stratigraphy section, it was extremely difficult to differentiate between the two soil horizons which contained the large majority of artifacts at the site (Horizons III and IV); these soils were excavated in arbitrary levels. Excavation of each test unit was continued until culturally sterile soil was encountered. Soil profiles were recorded for all contiguous block excavations and isolated units.

A soil sample and one "non-cultural" rock were recovered from each level in each unit to be used as a background control for blood analysis following methods described by Custer, Ilgenfritz, and Doms (1988). Three flotation samples were also retained for analysis, two from the northern section,

FIGURE 11
 Location of Flotation and Column Soil Samples,
 Site 7K-C-360

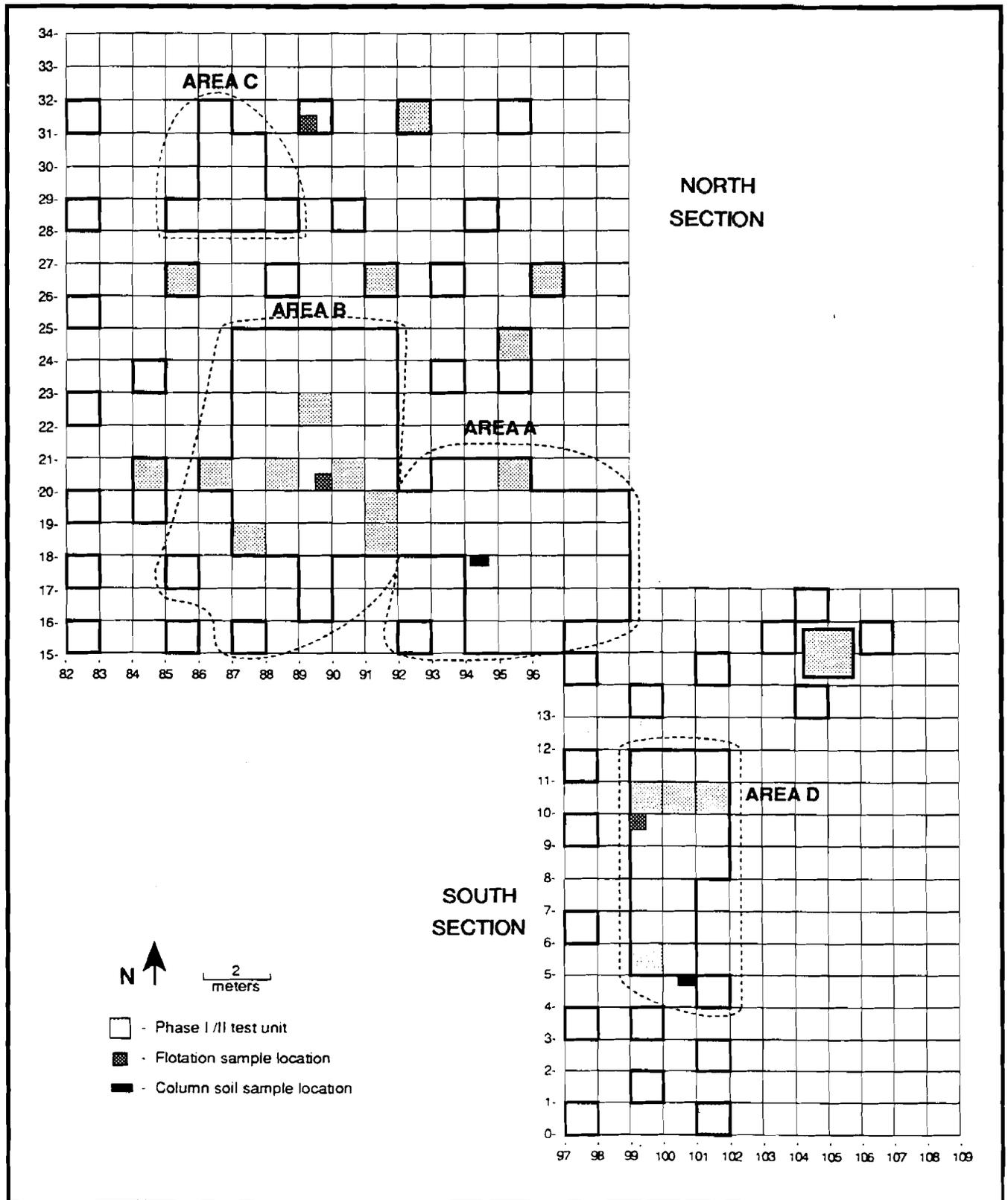
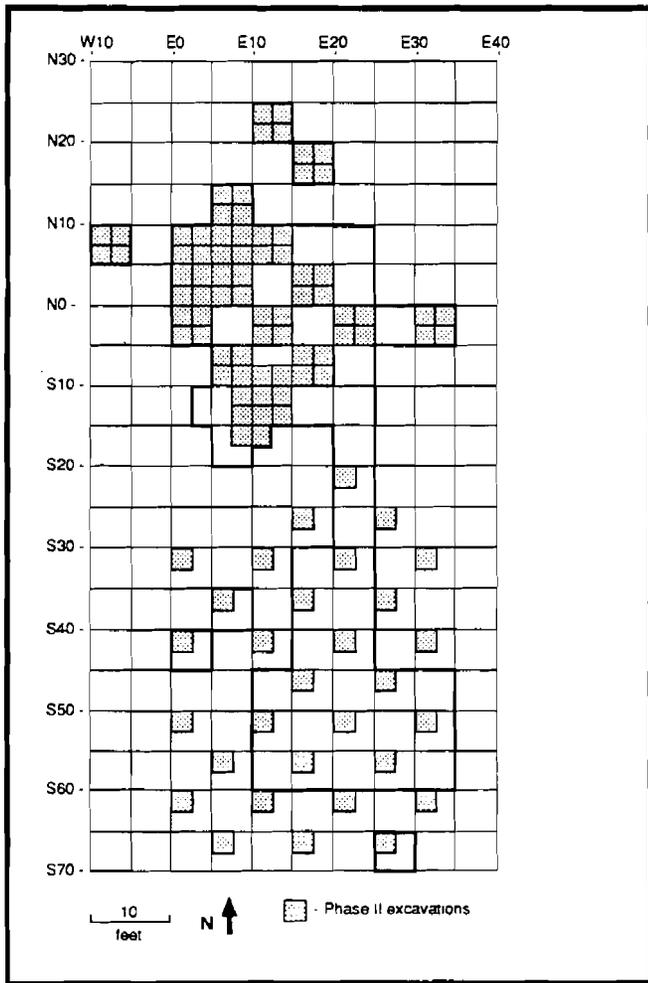


FIGURE 12

Location of Phase II Excavations,
Dover Downs Site, Hill A (7K-C-365A)



and one from the southern. Each sample consisted of one-half of a 10 cm level (i.e., 5 cm) from each excavated level of a 50 cm square block, resulting in a 2.5 liter sample from each excavated level. A standard column soil sample was taken from each section of the site as well. Figure 11 shows the location of both flotation and column soil samples.

All soil and "non-cultural" rock samples were tested for false-positive blood residue reaction using protocols established at the University of Delaware Center for Archaeological Research (Custer, Ilgenfritz, and Doms 1988). In areas with no contamination, all tools and a sample of flakes were tested for blood residues. After this process, all artifacts were washed and labeled according to standards established at the Island Field Museum.

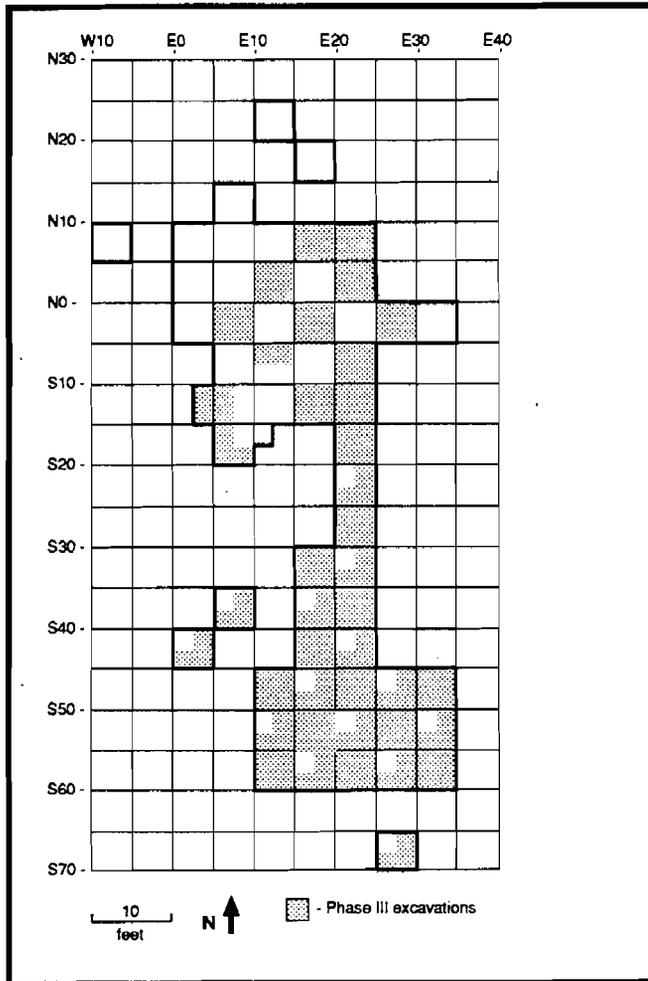
Phase I/II testing at 7K-C-365A involved the excavation of 650 square feet of the site, including a series of 5-foot square excavation units in the northern half of the knoll, from grid S20 to N25, and 30 2.5-foot square test units in the southern half, from grid S20 to S70 (Figure 12). During these tests, a large number of prehistoric artifacts from apparently undisturbed contexts were recovered, and 17 potential prehistoric soil pit features were identified. Three of these features were excavated during Phase II testing. Phase III data recovery excavations focused on the areas tested in Phase I/II work, incorporating and expanding on the earlier test units.

Using the grid established during Phase II excavations, 12 additional 5-foot square units were dug in the northern section of the site, as were five 2.5-foot square blocks, for a total excavation area of 331.25 square feet. In the southern half of the site, 12 of the original 30 2.5-foot square tests were expanded into 5-foot square units, and 10 additional 5-foot square units were excavated. This resulted in a total of 475 square feet excavated in the south, for a total of 806.25 square feet for all Phase III excavations at 7K-C-365A (Figure 13).

A 5-foot square was the basic excavation unit, and each was divided into four 2.5-foot squares, labeled by their compass coordinates. These squares were the minimum provenience unit. For 5-foot square units, excavation methods were as follows: The square was divided into four 2.5-foot square blocks, and the humus was removed separately from each as one level. One 2.5-foot block was selected, and that block was excavated in 0.25-foot arbitrary levels until sterile subsoil was encountered. The vertical distribution of artifacts was carefully recorded, and the walls and floor of the square were checked for features and/or natural disturbances. Based on this information, a determination was made as to the depth of excavation levels for the remaining three 2.5-foot squares. If the unit appeared to be stratified, 0.125-foot levels were used; if the unit was un-stratified or disturbed, 0.25-foot levels were retained. If a potential feature was encountered, it was excavated and screened separately. Potential features identified during Phase II testing were also investigated.

FIGURE 13

Location of Phase III Excavations,
Dover Downs Site, Hill A (7K-C-365A)



As was true at 7K-C-360, soil and rock samples were recovered from each level in each unit to be used as a background control for blood residue analysis. Two areas of flotation samples were retained for analysis, one sample from the north half of the site, and one from the south half. Each sample consists of one 0.25-foot level from each excavated 2.5-foot square, resulting in approximately one 11-quart sample from each excavated level. A standard column soil sample was taken from three areas of the site as well. Figure 14 shows the location of both flotation and column soil samples.

Phase I testing at 7K-C-365B consisted of a pedestrian survey and two 3' X 3' test units placed on the east side and the west side of the crest of the rise on which the site was situated (Figure 15). During these investigations, a quartzite reduction area was identified in Test Unit 13-E.

In order to determine the extent of this concentration and locate any related features and artifact densities, as well as their cultural affiliation, a grid of 5' X 5' test squares was set up across the crest of the rise. In the southern portion of the site, 2.5' X 2.5' test units were used because the artifact density decreased in that direction. Shovel test pits were excavated on a 10-foot grid and were placed northwest of the core area exposed by the test units to determine the limits of the site. A total of 39 shovel test pits, 14 2.5' X 2.5' test units, and 54 5' X 5' test units were excavated in Phase II (Figure 15).

A soil sample and one unmodified pebble were taken from each 0.25' level of each 5' X 5' test unit to be used as background controls for blood residue analysis. In addition, a 16 percent flotation sample was taken from each 0.25' level of the 10' X 10' square grid. The sample was consistently taken from the southwest quadrant of a 5' X 5' test unit in each 10' X 10' square test grid.

The Dover Downs site, Hill B possessed sufficient integrity to establish its eligibility for the National Register of Historic Places. However, the excavations which were required to generate the information needed for a determination of National Register eligibility, and to develop a suitable data recovery plan, were sufficiently extensive to constitute data recovery and no further work at the site was recommended.

EXCAVATION RESULTS AND INTERPRETATIONS - SITE 7K-C-360

SITE STRATIGRAPHY

The following section will discuss the soil types and soil formation processes observed at 7K-C-360, and will consider the relationship of the soil types to the vertical distribution of artifacts at the site.