

II. BACKGROUND AND PREVIOUS RESEARCH

A. PREVIOUS ARCHAEOLOGICAL STUDIES

The Whitby Branch Site was first discovered during a Phase I survey of a planned stormwater management pond along the SR 1 corridor (Bedell et al. 1996). This initial field survey was carried out in September 1995, with a total of 25 flakes and one hammerstone recovered from 11 shovel tests at the site location. Prehistoric artifacts were found in shovel tests within an area measuring 33x9 meters (approximately 300 square meters). The broad distribution of artifacts, the generally intact nature of the soils, and the advantageous site location at the confluence of a stream and a wetland suggested that the site might contain much more cultural material and the undisturbed remains of a campsite. An additional investigation of the site (Phase II) was therefore undertaken.

Phase II testing of the Whitby Branch Site occurred in November 1995, and consisted of the excavation of sixteen 1x1-meter excavation units (Bedell et al. 1996). Horizontal provenience controls were established by extending a grid across the site, which gave each excavation unit a discrete northing and easting location. Excavation unit placement was initially determined using the Phase I shovel test data, with the entire upland landform eventually tested at approximately 6- to 8-meter intervals.

More than 608 prehistoric artifacts were recovered from the site during Phase II investigations, including culturally diagnostic lithic and ceramic implements, general tools, and fire-cracked rock. All material appeared to be associated with the Woodland I period. A bifacially flaked tool made of jasper was identified as a Jack's Reef Corner Notched projectile point, which is datable to circa AD 600 to 900 and is an indicator of a late Woodland I occupation (Custer 1994, 1996a). The crushed-quartz-tempered ceramic fragment was identified as Wolfe Neck ware, datable to circa 700 to 400 BC (Custer and Silber 1995). This ware type is comparable to Vinette I ware found elsewhere in the Middle Atlantic region and New York State (Ritchie 1980).

The lithic assemblage resulting from the Phase II investigation contained a broad range of artifact types and raw materials. The assemblage was composed largely of quartz and quartzite, with lesser quantities of chert and jasper, followed by rhyolite, argillite, and miscellaneous metasedimentary rock. With the exception of rhyolite and argillite, these raw materials are widely available in Pleistocene-age cobble deposits throughout the Coastal Plain. Some of the jasper raw material may have been transported from the eastern Pennsylvanian jasper quarries.

Included in the site assemblage were nine cores, two unifaces, 10 bifaces, a three-quarter-grooved axe, and one hammerstone. The bifacial and unifacial tool forms in the assemblage include projectile points, a scraper, a chopper, and a utilized flake. These tools suggest a fairly broad range of generalized processing or maintenance tasks, as would be characteristic of a camp site rather than a specialized resource procurement site. Implements such as projectile points and utilized flakes can be used for a broad range of activities, including butchering, hide scraping, piercing, and cutting of

various materials. The grooved axe recovered during the Phase II study was an unusual find, as such tools are only rarely found on archaeological sites in Delaware. The axe presumably would have been used for heavy woodworking tasks. The flake debris and cores indicate that the lithic reduction activities conducted at the site proceeded from initial decortication and early reduction to bifacial thinning and resharpening. A relatively large number of cores were recovered during the site testing, suggesting that quarrying and the initial stages of tool manufacture were important activities at the site. The majority of cores were identified as multi-directional freehand types, a production technique which suggests that an abundant supply of raw material was located nearby. Other core technologies, such as bipolar reduction, are more characteristic of areas less abundant in lithic sources. A technical discussion and illustrations of various core reduction technologies are presented in Chapter VII, Section B.3.

Two fire-cracked rock features were identified and excavated during the Phase II investigations. Neither feature yielded wood charcoal, nor were any pit outlines discernible. Both features were interpreted as remnant surface hearths or stone-boiler dumps. Fire-cracked rock raw materials included sandstone, quartzite, ironstone, and quartz. The Phase II investigations also showed that much of the Whitby Branch Site contained an undisturbed and intact soil stratigraphy, which suggested that other prehistoric features would be found at the site. The distribution of site artifacts was concentrated in two zones, one identified as the West Locus and the other as the East Locus.

The Phase II investigations suggested that the site had been used as a microband base camp or a resource procurement site, based on the recovery of large quantities of lithic tools and production debris. In addition, the presence of buried cultural features and generally intact soils indicated that the site had retained a relatively high degree of integrity since the time of its prehistoric use. Such sites are relatively rare in Delaware and the surrounding region, and the site was determined to be eligible for the National Register of Historic Places because of its ability to provide important information about prehistoric lifeways. As destruction of the site by the planned construction could not be avoided, DelDOT sponsored a program of archaeological excavation to ensure that important scientific information would not be lost.

B. LOCAL ARCHAEOLOGICAL SITES

The Whitby Branch Site is part of a complex of prehistoric sites located in the Appoquinimink River drainage. The local landscape combines uplands with maturely dissected stream valleys containing extensive tidal marshes. This topographic configuration with its rich mosaic of ecosystems was particularly well suited for exploitation by prehistoric groups. A search of state site files identified approximately 50 recorded prehistoric sites within a 3-kilometer (approximately 2-mile) radius of the Whitby Branch Site. In addition, a number of surface scatters and isolated finds have been recognized but not granted state site numbers. If the site search is expanded to a 5-kilometer (3-mile) radius to include Drawyer Creek to the north and the northern flanks of Blackbird Creek to the southeast, the number of recorded sites more than triples.

Because of the cursory nature of previous surveys and amateur collecting, little is known about most of these sites. Eleven recorded sites within the 3-kilometer radius have been interpreted as “base camps,” on the basis of site size and tool assemblage variety (Custer 1989; Gardner and Stewart 1978; Thomas 1966). Traditional models of prehistoric site types contrasted “microband base camps” and “macroband base camps,” a distinction based on the premise that under certain circumstances, individual families or households would aggregate into larger, or “macro,” family units to accomplish specific subsistence tasks, perform community rituals, or seek common protection against intrusive groups (Custer 1984:67). Typically, these sites were thought to be characterized by a broad range of tools, large quantities of debitage, and access to a wide spectrum of subsistence resources. The advantageous environmental settings of these larger base camps and the large artifact assemblages associated with them suggested long-term multiple occupations by large groups. Microband base camps were understood to display evidence of occupation by a small group, such as a single family or household. The expected quantities of artifacts found at these sites would be less than at macroband base camps, and the productivity of the surrounding ecosystem would likely be lower.

One of the difficulties with the macroband/microband base camp model is the lack of objective criteria for distinguishing these two site types. Previously recorded sites, particularly those known only from surface collections, cannot be readily distinguished on the basis of their size or the variety of tools in their artifact assemblages. Even among some of the large excavated sites, it would be difficult to distinguish a site that was occupied for a “short” period by a “large” group from a site that was repeatedly used over a “longer” period by “small” groups.

Custer has refined the concept of the base camp using data from recent excavations at the Snapp (7NC-G-101), Leipsic (7K-C-194A), and Pollack (7K-C-203) sites (Custer 1994:83ff). At these sites, Custer has argued that there are smaller clusters (“household clusters”) of non-overlapping pit houses with external storage pits that were occupied by small groups. Presumably, an organized community plan would be evident in the arrangement of non-overlapping household clusters. Convincing evidence of multifamily occupations was not forthcoming from these sites, leading Custer to reassess the validity of the macroband base camp model. The extensive lithic assemblages and feature distributions found at these sites were not the product of “macroband” communities, Custer concluded, but rather were reflections of long-term recurring occupations by single nuclear family units (Custer 1994:83). It seems appropriate, however, to retain the distinction between these extensive recurring-use base camps and smaller limited-use base camp sites.

The most extensive site in the Appoquinimink River drainage is at Hell Island (7NC-F-7), about 1 kilometer (0.6 mile) northwest of the Whitby Branch Site. Excavations in the late 1950s and 1960s recovered evidence of occupations assignable to the pre-ceramic Woodland I, ceramic Woodland I, and Woodland II periods (Thomas 1966; Wright 1962). Hell Island is the type site for Hell Island ceramics and contains a variety of chipped-stone and groundstone tools, suggesting that the site occupants practiced a broad-based subsistence strategy that included hunting, fishing, and plant processing. Although only two hearths were identified at the site, Thomas (1966) and Wright (1962) both believed that the scarcity of features was attributable to plow-induced erosion as well as the limited nature of the excavations. Hell Island was interpreted as a habitation site based on the

excavation of large quantities of artifacts belonging to a broad range of tool types. Among the most common diagnostic artifacts were Hell Island corded ceramics and Jack's Reef projectile points, placing a major site component within the Webb complex of the late Woodland I period, approximately AD 500-1000. An important characteristic of the Webb complex is its participation in long-distance trade and exchange and elaborate mortuary ceremonialism.

Within 3 kilometers (2 miles) of Hell Island are eight sites (Figure 2) characterized as limited-use camps containing moderate quantities of pottery, lithic debris, and tools (Bedell et al. 1996; Custer and Bachman 1986; Gardner and Stewart 1978). Most of these camp sites are located on upland surfaces and are no more than about 100 meters from a stream or the river; the sites are spaced at intervals ranging from 0.5 kilometer to 1.25 kilometers, with an average interval of 845 meters. Distances between the limited-use camps and the Whitby Branch Site range from 1 kilometer to 2.5 kilometers, averaging 1.75 kilometers, and distances between these camp sites and Hell Island are between 0.7 kilometer and 2.5 kilometers, with a mean distance of 1.5 kilometers. An additional 30 sites, identified as "procurement stations" or "lithic scatters," are recorded within the 3-kilometer circle around Hell Island (Bedell et al. 1996; Custer and Bachman 1986; Gardner and Stewart 1978). These sites are characterized by their small size, low artifact count, and limited range of tool types or features. Most of these small sites were probably hunting and resource processing stations, and they are found in a variety of settings, including wetland margins, stream confluences, and uplands overlooking the river.

If the interpretation of Hell Island as a recurring-use base camp is correct, then many of the nearby procurement/processing stations were probably utilized by Hell Island site occupants. A semi-sedentary way of life would have required an extensive resource catchment zone around the base camp, also marking the social territory of the group. The limited-use camp sites arrayed across the Appoquinimink drainage were perhaps the product of periodic fusion and splitting of groups based on availability of resources and on labor needs. The standard settlement system model proposed for mobile hunter-gatherer groups relates base camps and small sites to the aggregation and fissioning of lineage groups in seasonal or ritual schedules (Dyson-Hudson 1966; Turnbull 1968). Alternatively, the site distribution patterns may be the product of a core/periphery relationship between Hell Island occupants and second-tier groups that were under their sway. Rather than reflecting seasonal or ritual aggregation and fission, the limited-use camp sites may have been nodes for the redistribution of resources controlled by social elites residing at Hell Island, especially during periods of intensified social complexity, such as proposed for the Webb complex of the late Woodland I period. This type of system may have operated for some time after the withering of the central corporate group, keeping alive the styles, if not the power of that group.

The pattern of site locations along the Appoquinimink River suggests a settlement system that was focused on the river and its wetland margins. The establishment of stable estuarine environments approximately 4,000 to 5,000 years before the present (BP) as a result of the reduction in the rate of sea level rise appears to correspond to the beginnings of human settlement in the Appoquinimink River drainage (Custer 1984:91, 1994:16). Although periods of occupation have not been

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determined for most Appoquinimink River sites, those yielding diagnostic artifacts are assignable to the Woodland I or Woodland II periods (ca. 3000 BC to AD 1650).

Custer (1990:274) has described the Woodland I settlement system as “. . . characterized by a series of large base camp sites and many dispersed ephemeral lithic scatter sites.” The pattern in the Appoquinimink River drainage refines this view by presenting a picture of very few large recurring-use base camp sites interspersed with many limited-use camp sites, procurement stations, and lithic scatters.

C. REGIONAL PREHISTORY

Custer (1984, 1986) has divided the prehistory of Delaware into four periods: (1) the Paleoindian period (ca. 12,000 BC-6500 BC), the Archaic period (ca. 6500 BC-3000 BC), the Woodland I period (ca. 3000 BC-AD 1000), and the Woodland II period (ca. AD 1000-AD 1650). The European Contact period (ca. AD 1600-1750) marks the time during which Native American groups were forced to adapt to the presence of Euro-American colonial groups. Although there are various chronological systems in use in the Middle Atlantic region, the work of Custer (1984, 1986, 1994) is followed in this study. Custer uses the traditional Paleoindian/Archaic/Woodland cultural stages, but he dates these periods differently than most other archaeologists in the surrounding region. Custer's chronology differs most from the prevailing regional model by the shortening of the Archaic period. Most archaeologists bracket the Archaic period from roughly 8000 to 1000 BC, and divide it into Early, Middle, and Late subperiods. Custer includes most of the Early Archaic period (ca. 8000-6000 BC) in the Paleoindian period, and he includes the Late Archaic period (ca. 3000-1000 BC) in his Woodland I period.

The Paleoindian period marks the initial occupation of the state by small groups of nomadic Native American hunters and gatherers. Their arrival occurred when late Pleistocene glacial environmental conditions were abating with the retreat of the glaciers that covered much of eastern North America. The Paleoindian economy was based to a great extent on the hunting of large animals that were well adapted to the cold Ice Age conditions. Although it is rare to find the bones of these animals or other food resources preserved at Paleoindian sites, these sites are generally found in habitats where abundant plant and animal food resources were available. Palynological and geomorphological data suggest that the vegetation in Delaware during the Paleoindian period was a mixture of deciduous and boreal forests and grasslands that would have supported a wide variety of small and large mammals, many of which were probably hunted by Paleoindians. Within these habitats, areas where surface water, such as wetlands, springs, and streams, was available would have been particularly attractive for Paleoindian hunters and gatherers.

Custer, following Gardner (1974, 1977, 1978, 1987), characterizes the Paleoindian settlement pattern as highly focused on sources of high-quality lithic material that were used to make stone tools. Based on Gardner's work on the Flint Run complex in Virginia, Custer has defined a variety of Paleoindian site types: quarry sites, quarry reduction stations, base camps, base camp maintenance stations, outlying hunting sites, and isolated point finds. Custer discusses two possible Paleoindian settlement pattern models, based on differing regional distributions of lithic raw

material. In the cyclical model, groups moved through a series of base camps with the quarry-related base camp as a focal point; in the serial model, there were no quarry-related base camps, and lithic procurement activities were carried out in conjunction with other activities, on an as-needed basis (Custer 1984, 1986). The cyclical model would be most applicable to settings that contain a single lithic source area, while the serial model would be applicable in territories that include a number of widely separated sources.

The stone toolkit of the Paleoindians was characterized by a limited number of bifacial and unifacial implements that suggest heavy emphasis on the procurement and processing of animal resources. These tools include projectile points, knives, scrapers, and less formalized flake tools. Of these, the fluted point is the diagnostic hallmark of the Paleoindian artifact assemblage. Other point styles that were used in the later part of the Paleoindian period include corner-notched and stemmed points. The environmental settings where Paleoindian sites and isolated points are found suggest that these groups followed a mobile way of life, with frequent movements of single- or multiple-family groups between resource-rich habitats. It appears that this basic subsistence/settlement strategy persisted with only minor variations for approximately 5,500 years, although major environmental changes occurred during this period.

Custer has identified a concentration of Paleoindian sites along the Mid-Peninsular Drainage Divide of the Delmarva Peninsula. Using modern LANDSAT imagery, it was found that Paleoindian site loci were strongly correlated with poorly drained or swampy areas. The Hughes complex in Kent County exemplifies this Paleoindian site distributional pattern. This complex includes a series of six surface finds located on low, well-drained knolls within or adjacent to a large freshwater swamp and other poorly drained areas (Custer 1986:49-51).

The Archaic period is characterized by a number of changes in Native American technologies, subsistence, and settlement. These changes are interpreted as responses to the emergence of full Holocene environmental conditions. The warmer and wetter conditions of the Holocene brought about an expansion of oak and hemlock forests and a reduction in open grasslands, which led to the extinction of cold-adapted grazing animal species such as caribou and bison that were the favored prey of Paleoindian groups. The new environmental conditions favored the expansion of browsing animals, such as deer, that were able to flourish in the newly emerging forests (Custer 1984, 1986).

A rise in the sea level and an increase in precipitation at the beginning of the Holocene would have facilitated the development of inland swamps, which became important foci for prehistoric settlement throughout the Middle Atlantic region. At this time, Native American populations in these locales shifted from the more hunting-oriented foraging pattern of the Paleoindian period to one in which plant foods became a more important part of their diet. In northern Delaware, large swamp habitats such as Churchman's Marsh were preferred locations for the first large residential base camps, possibly occupied by several different family groups. Associated with these larger group camps are more numerous and smaller procurement sites situated in various settings that would have been favorable for hunting and gathering activities during different seasons of the year.

Based primarily on the work of Gardner (1978, 1987) and MacNeish (1971), Custer has defined three types of Archaic sites: macroband base camps, microband base camps, and procurement sites. The three site types are distinguished primarily by their environmental settings, the size of the occupant group, and the range of activities carried out at the site. However, it is difficult to distinguish such distinct types archaeologically. Macroband base camps are located in settings that afford access to the greatest range and quantity of resources, and they exhibit evidence of occupation by relatively large groups that carry out a broad range of activities. Procurement sites represent the opposite end of the site type continuum. They exhibit evidence of occupation by small groups that carry out a limited range of activities and are located to afford access to a specific resource (Custer 1984, 1986).

Archaic toolkits differ from those of the Paleoindian period in that they include more types of artifacts that would have been used for plant food processing, such as grinding implements and stone mortars. Although Archaic groups in Delaware appear to have been less mobile than Paleoindian populations, they were more mobile than later Woodland period groups. The sizes of Archaic exploitative groups seem to have changed seasonally with the availability of food resources.

Based upon palynological and geomorphological data from the Middle Atlantic region, the Woodland I period has been described as a time of “dramatic change in local climates and environments” characterized by “a pronounced warm and dry period.” This period began at approximately 3000 BC and persisted to approximately 1000 BC, and is referred to as the mid-postglacial xerothermic (Custer and Bachman 1984). During that period, oak and hemlock forests were replaced by more drought-resistant oak and hickory forests and larger grassland areas. Although these conditions led to the drying up of some interior streams, continued sea level rise resulted in the creation of large and highly productive brackish marshes in coastal areas. Overall, the xerothermic is believed to have brought major shifts in the distributions of plant and animal species and the establishment of new resource-rich settings in some areas of the state.

Local conditions at the Whitby Branch Site would have changed significantly during the Holocene, although the landform occupied by the site has been relatively stable. Changing environmental conditions would have been closely related to the rising sea level; for much of the Holocene, the drainageway adjacent to the site would have supported a freshwater wetland. This wetland would have resembled the transitional freshwater-tidal environment now prevailing in much of the nearby valley, but its floor would have been considerably lower than the modern surface. Late Holocene estuarine and historic sedimentation (derived from tillage) could account for up to 1 or 2 meters of filling, thus decreasing the height between the site and the adjacent wetland. For most of the Holocene, the upland-wetland transition was unlikely to have been so gently sloping as at present, and the site was probably bordered by a scarp-like bank that fell sharply into the wetland.

The changing environmental conditions are believed to have led to radical changes among Native American populations, including a trend toward a more settled way of life and more complex systems of social organization. For example, major river floodplains and estuarine swamp habitats became the primary resource zones and the locations of large base camps that were occupied for most or all of the year. Such sites are particularly prominent in northern Delaware; they include the

Delaware Park Site, the Clyde Farm Site, the Crane Hook Site, and the Naamans Creek Site. Artifact assemblages and architectural features from these sites suggest intensive utilization by prehistoric populations and a trend toward more sedentary lifeways. In southern Delaware, there was an increase in the utilization of shellfish in the coastal areas, concurrent with an inland shift in the locations of macroband base camps along the tidal drainages (Custer 1984, 1986).

Custer has observed that Woodland I groups used fewer areas within the overall environment, although the three primary site types established during the Archaic period—macroband base camps, microband base camps, and procurement sites—continued into the Woodland period. However, Custer also notes that Woodland period macroband base camps were significantly larger than Archaic macroband base camps, particularly in areas at the saltwater/freshwater interface and along the floodplains of major drainages (Custer 1994).

The toolkits of Woodland I groups are generally similar to those of the Archaic, with the addition of such items as heavy woodworking tools, soapstone and ceramic containers, broad-bladed points, and netsinkers. The addition of more plant-processing tools suggests more intensive use of plant foods, which by the end of Woodland I times may have approached the level of productive intensification. The presence of lithic materials, such as argillite, rhyolite, and soapstone, from distant sources is evidence of regional trade and exchange networks. Soapstone and ceramic containers, a major technological innovation of the Woodland period, would have facilitated more efficient food preparation and the storage of surplus foods. Pit features employed for food storage and the remains of prehistoric dwellings have been documented at the Delaware Park and Clyde Farm sites in northern Delaware. Archaeologists also believe that a more ranked or stratified social system developed during the Woodland I period, based on the more settled lifestyle and the presence of interregional exchange networks.

Important features of Woodland base camps in Delaware are semi-subterranean houses, and examples have been reported from both Woodland I and Woodland II sites. These houses are generally recognized in the archaeological record by subsurface pits which represent the basement of a structure that would have been covered with skins or bark over a framework of posts cut from saplings. After abandonment of the houses, the basement pits became filled with organic matter, which has enabled recognition of such pits during archaeological excavation. Some of the pits also include cooking/heating areas, represented by clusters of fire-cracked rock, and deeper pits for the storage of surplus foods (Custer 1994).

The idealized reconstruction of a typical Woodland pit house shows a shallow, ovoid basement which measures 4 to 7 meters on the long axis (Figure 3). It also includes an interior storage pit, or sub-basement, at one end of the structure, opposite the doorway, as well as an interior hearth. The idealized form has a floor area of 23 to 25 square meters and is interpreted as housing for a nuclear family. Although post molds are rarely found in association with these features, it is assumed that the houses included a superstructure of small saplings or branches.

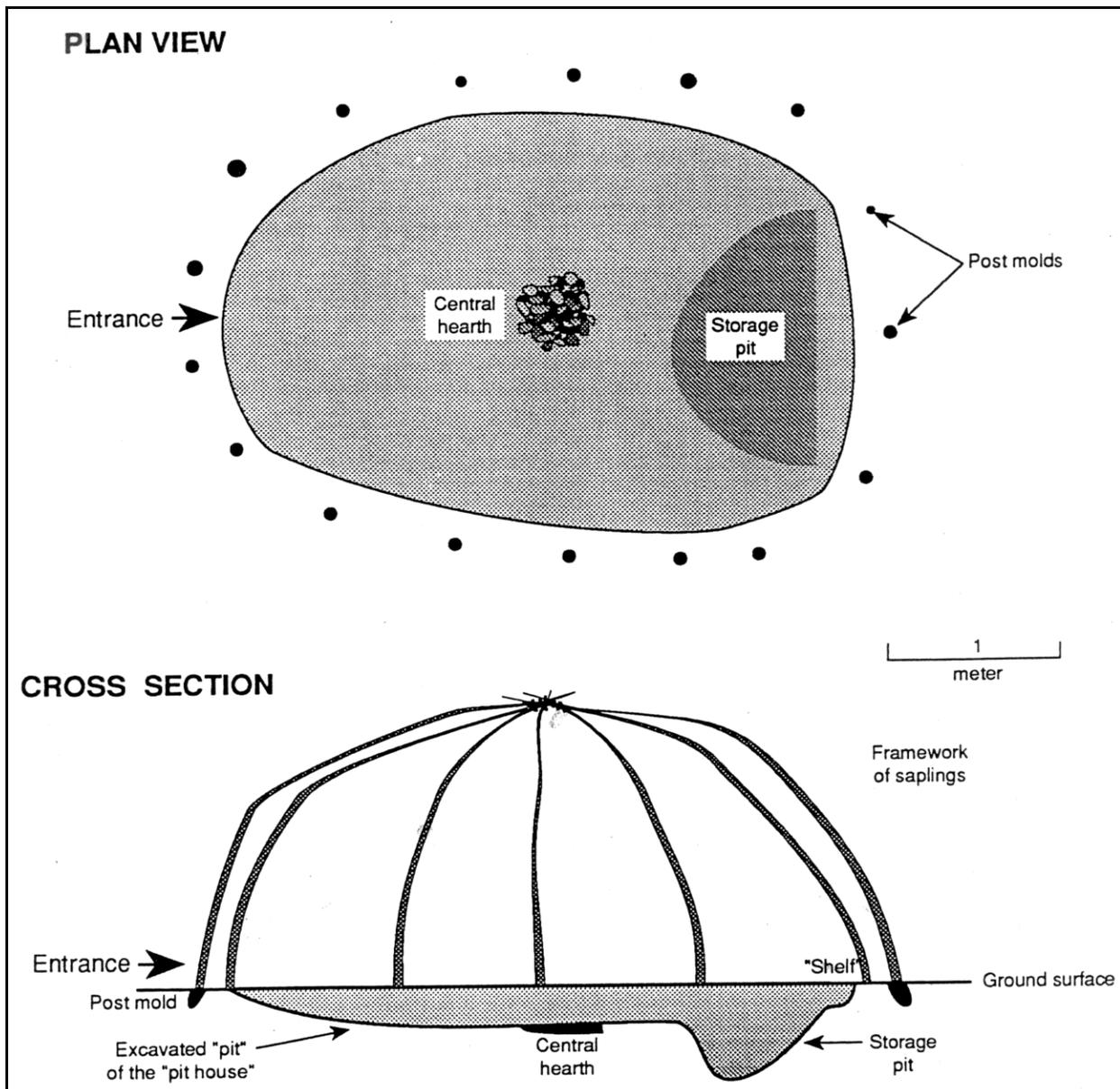


FIGURE 3: Idealized Pit House Reconstruction

SOURCE: Custer and Silber 1995

The recognition of prehistoric pit houses in northern Delaware has been viewed with skepticism on the part of many archaeologists, for a number of reasons. First, prehistoric houses in the surrounding region are generally recognized by the presence of post molds, which represent the decayed supports for the houses' superstructure. Most of the reported examples of Delaware pit houses lack associated post molds; however, this could be the result of poor preservation. Also, many of the Delaware pit houses lack associated cooking/heating areas or organic fills, which has led many archaeologists to believe that the pit-like features seen in the archaeological record are disturbances in the soil that would result from natural processes such as the uprooting of trees during high winds. The debate (Custer 1994; Custer and Silber 1995; Liebknecht 1995; Mueller and Cavallo 1995;

Schuldenrein 1995; Thomas 1995; Thurman 1987) concerning the origin of these pit features is relevant to the Whitby Branch Site, as one such feature was identified and excavated.

The Woodland I period has been subdivided into a number of shorter cultural complexes that have somewhat defined geographic limits. Custer (1984, 1986, 1994) describes a number of Woodland I complexes for the coastal plain of Delaware: the Barker's Landing, Wolfe Neck, Delmarva Adena, Carey, and Webb complexes, each with distinctive artifacts and other traits. The Barker's Landing complex was the initial Woodland I complex, dated to circa 3000 to 500 BC; it was characterized by stemmed points or broadspear points, fishtail points, steatite bowls, and Marcey Creek, Dames Quarter, and Selden Island ceramics. The Wolfe Neck complex was characterized by various stemmed projectile points, grit-tempered and cordmarked pottery of the Wolfe Neck or Susquehanna series, and storage pits for surplus food. The Delmarva Adena complex was contemporary with the Wolfe Neck complex, but the Adena complex appeared only in a few areas along the St. Jones and Murderkill rivers in central Delaware. The Delmarva Adena complex was marked by exotic trade items which are generally found only at mortuary exchange centers; diagnostic artifacts associated with the Delmarva Adena complex include Coulbourn ceramics and Adena side-notched and corner-notched projectile points. Carey complex sites are found throughout the entire state. Among the traits associated with this complex are Mockley ceramics and a variety of projectile points, including Rossville, Fox Creek, and large triangles; the characteristic settlement pattern includes macroband base camps in the Mid-Drainage Zone, with microband base camps and procurement sites in interior woodland and coastal marsh areas. The Webb complex is the final Woodland I phase in the coastal plain of New Castle County and Kent County; it is defined by a subsistence pattern that emphasizes intensive food gathering, long-distance trade networks, Hell Island ceramics, and Jack's Reef projectile points. The Hell Island Site, discussed above, is located 1 kilometer west of the Whitby Branch Site.

The Woodland II period within the Middle Atlantic region is marked primarily by the development of horticulture and an even more settled way of life. During this period, camps and villages became larger and more permanent and tended to be located adjacent to areas with easily worked floodplain soils. Interregional trade and exchange seem to have decreased during the Woodland II period. The shift to agricultural food production effected important changes in the Woodland II settlement pattern, although the settlement pattern included the basic site types established during the Archaic period. Although the principal settlements became larger, Woodland II groups still visited smaller camps and procurement sites on a seasonal basis.

Two Woodland II complexes have been defined for Delaware, although their boundaries are not clear. In northern Delaware, the Minguannan complex is simply defined by the presence of Minguannan ceramics, triangular projectile points, and evidence of a more settled way of life, in the form of storage pits and house patterns. Although there is some evidence of agricultural production during the Woodland II period, this does not appear to have changed the overall settlement pattern (Custer 1984, 1986).

The European Contact period is marked by the initial contact between the Native American inhabitants of Delaware and European explorers, traders, and colonists, followed by the disruption

of traditional Native American lifeways and sociopolitical organization. There are few archaeological sites from this period, and most information comes from historical sources generated by Europeans, including Dutch, Swedish, and English accounts. In Delaware, there is little archaeological evidence of contact between Native American populations and European settlers, although contact between Native American and colonial groups is well known from historical sources. A small number of descendants of the original Native American inhabitants of Delaware still reside in the state today.