

## 8. PHASE II INVESTIGATIONS

THE NORTHERN ALIGNMENT contains three sites that were identified in the Phase I study, but could not be archæologically evaluated without Phase II studies. It is not unusual for surveyors to determine that a site is archæologically significant without addressing the other issues that are necessary to determine eligibility: integrity and boundaries.

The Ford Farm, Simon's Savannah, Williams, and Sawmill sites fell into this clear-cut category. Their significance is so obvious that Phase II investigations would be necessary only when there was a need to make a formal determination of eligibility in connection with a selected project alignment.

Other sites are not so obvious; while they clearly contain archæological materials, their significance is not so obvious. Such sites are the open part of the White Marsh site (7K-C-390) near the mouth of White Marsh branch; all the remainder of Blueberry Hill (7K-C-107), and the Beiser Site (7K-C-391). These three sites were therefore identified for further testing at the Phase II level, beginning in the spring of 1991.

### TESTS ON THE BEISER SITE (7K-C-391)

The original test (ER20) had yielded three jasper flakes and a chert chunk at a point later designated station 8+00 on the northern alignment (FIGURE 33, PAGE 59). Even though the original test had yielded sparse evidence, there was justification to identify the place as a "site," albeit small.

The environment of the site was perfect for prehistoric occupation, according to generally-accepted models. The bay/basin to the east is perpetually damp, and there is a lesser wetland to the west. The ridge on which the site lies is sandy and well drained. This combination of environmental factors is generally considered sufficient to indicate a high (80%  $\pm$ ) probability for the presence of a prehistoric site.

The original proposal was to dig ten test squares into this ridge. Each square was

to be dug in quarters, by five-centimeter arbitrary levels. As it turned out, the Beiser Site could not justify such detailed treatment, which is designed for testing potentially stratified sites yielding respectable numbers of artifacts.

The first meter-square test, ER 60, was opened on the centerline at station 7+00 near the edge of the wetlands that mark the west end of the site (FIGURE 33, PAGE 59).

The dark brown sandy loam plowzone was 40 centimeters deep, and the test pit was dug down to 55 centimeters. All material was sifted through a quarter-inch screen. A single fire-broken rock was recovered from the plowzone.

A second unit, at the crest of the ridge, ER 61, was located near the initial test square (ER20). The 25-centimeter plowzone was shot through with yellow clods, indicating that the ridge is losing soil by sheet erosion at its summit. The test was taken down to 45 centimeters, but nothing was found below the plowzone. Three artifacts, including a piece of glass, were recovered.

Between these two tests, along the centerline at 7+50, ER 62 was sunk at the midpoint of the west-facing slope. The plowzone was a smooth brown loamy sand.

Finds, all from the plowzone, include a cut nail, three broken rocks and a crude chert pebble tool. The square was taken down by hand to 40 centimeters, and then was auger tested to 100 centimeters. Gravel was reached at 90 centimeters.

On the eastward slope, facing the bay/basin feature, was ER 63. The plowzone, 20 centimeters thick, was a light brown sand, containing a piece of glass and a small quartz chip. The unit was opened through yellow sandy soil to a depth of 40 centimeters, where a C horizon was identified.

After four units with such unpromising results, it was apparent that the Beiser Site within the proposed highway right-of-way is an unlikely candidate for

listing in the National Register of Historic Places. The site is unstratified, consisting of a thin scatter of refuse from ephemeral occupation episodes.

TABLE OF BEISER SITE  
METER-SQUARE UNITS

<u>ER</u>	<u>Station</u>	
20		
60	7+00	1 fire-cracked rock
61	8+00	1 jasper flake
		1 jasper chunk
		1 glass fragment
62	7+50	2 fire-cracked rocks
		1 unifacial pebble tool
		1 quartz core
		1 cut nail
63	8+50	1 jasper flake
		1 clear glass fragment

The environment at the Beiser Site was similar to that of Simon's Savannah, but the difference in artifact content was striking.

Even though nothing significant was found, the investigators continued to believe that a site should exist near the bay/basin. It clearly was not along the new road's construction route. The south edge of the bay/basin had been obliterated by construction of the General Metalcraft plant, and the north edge was inside the Geiser toft.

An informant stated that the garden behind the house has produced a number of artifacts (FIGURE 33). Thus the expected site lies outside the project area, on the north bank of the basin.

#### BLUEBERRY HILL, 7K-C-107

Phase I excavations, ER 18 and 19, at Blueberry Hill, indicated that the site is stratified (FIGURE 36, PAGE 67). When Phase II subsurface testing was first undertaken during the summer of 1991, approximately 100 square meters of the site remained (FIGURE 31, PAGE 57).

Test excavations during the summer of 1991 included the excavation of 1-meter-square units, most of which were grouped at the northern end of the site, where pottery was recovered early in the project.

#### SITE LOCATION AND ENVIRONMENT

The site is located on a high sandy bluff overlooking the confluence of Maidstone Branch and Fork Branch, which join to form the St. Jones River. It is currently wooded, but much of the site has in the past been cultivated. On the east, the site drops off sharply to the floodplain. Less than a half mile to the west is an enclosed freshwater feature referred to as a bay/basin feature or Delmarva bay. These features have been shown to be an important resource area for Archaic Period residents of the region, and could have been conveniently exploited from 7K-C-107.

Since the first test showed that Blueberry Hill was likely to be a candidate for eligibility to the National Register under Criterion D, Phase II examinations were in order. The purpose of a Phase II excavation is to determine the extent and integrity of a site, with the objective of providing

information necessary to determine its eligibility for listing in the National Register.

A base line was established across the site, with a one-meter grid system. Arbitrary north was laid out along the spine of the site, roughly perpendicular to the proposed road,

which is considered to run east-west. As it turned out, grid north is nearly due west.

The research design called for excavation of ten units into a white sand C horizon identified at 70 centimeters in the first test pit.

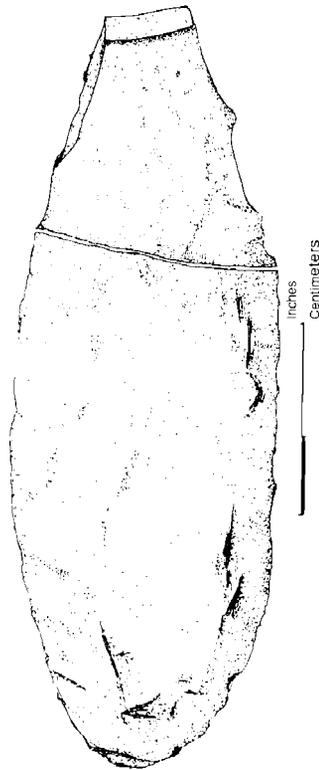


Figure 38

Quartzite biface, broken in manufacture, with the point yet un-formed. Island Field catalogue 90-23-82

The plowzone, normally about 30 centimeters deep, was taken off and sifted through a quarter-inch hardware cloth screen. Below this level 1, the meter-square units were divided into quarters and excavated by 5-centimeter levels.

Marcey Creek ceramics, dated to 1000 BC to 1200 BC, were found at the base of the plowzone (FIGURE 42), and a Palmer projectile point (FIGURE 39), dated to approximately 7500 BC, was found at a depth of 65 centimeters, just above the white sand C horizon. The vertical juxtaposition of these temporally diagnostic artifacts indicated the presence of undisturbed, probably stratified, Archaic and late Paleo-Indian components at the site.

John Foss of Soils International, Inc. visited the site and identified a soil horizon at the base of the white sand deposit which was probably indicative of a Late Glacial (15,000

BC to 8,000 BC) landscape. This meant that an undisturbed and stratigraphically distinct Early Paleo-Indian component might also be present at the site below the level already tested. Foss identified the white sand horizon as an æolian deposit which accumulated above this Late Glacial landscape over a comparatively short period of time. As a result of Foss' findings, the white sand was excavated in the units already opened. Flakes were found in this deposit, confirming the presence of the Early Paleo-Indian component (Appendix 2, page 112).

#### SOIL ZONES

Although there are some differences in the degree of soil development across the site, the soil horizons identified by Foss can be grouped into five zones (FIGURE 40):

*Zone I* is the uppermost organic layer, and varies from 25 centimeters thick along the western edge of the site where cultivation has occurred, to 50 centimeters thick along the eastern edge, where æolian accumulation over the last 150 years has taken place. The Woodland Period occupation is almost entirely within this zone.

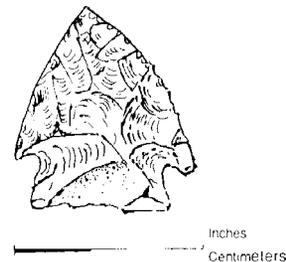


Figure 39

Palmer point, found at a depth of 65 centimeters, catalogue 90-23-79z

*Zone II* is a weak B horizon which has developed in an æolian soil. This zone extends from the base of the plow zone to approximately 70 centimeters below the present surface. Marcey Creek ceramics have been found at the interface between Zones I

and II. A Palmer projectile point was found at the base of Zone II, indicating that Zone II accumulated over a 6,500-year period between 9,500 years ago and 3,000 to 3,200 years ago.

Although seriously disrupted by a railroad cut, sand pit operations, and dirt bike riding, the surviving area of 7K-C-107 retains substantial vertical and horizontal integrity.

This vertical integrity is notable because the intact deposits date to the two earliest and least understood periods of Delaware prehistory, the Paleo-Indian and Archaic periods. Although temporal indicators are sparse in the assemblage recovered to date, temporally diagnostic artifacts were found at critical points in the vertical profile.

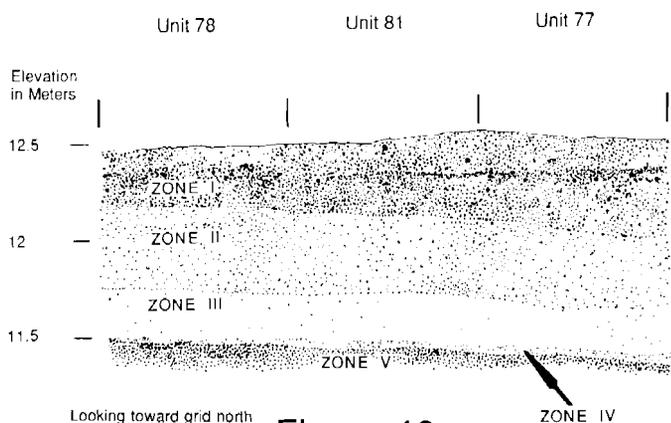


Figure 40

Profile of soil zones as interpreted.

*Zone III* is a light-colored sand deposit which has not undergone soil development. This indicates that this 30 to 35 centimeters thick deposit accumulated over a very short period of time ending about 9500 years ago. No temporally diagnostic artifacts have been found in this deposit, although flakes have been recovered in most units excavated to this level.

*Zone IV* is a discontinuous loamy sand B horizon that is up to 15 centimeters in thickness. This zone appears to indicate a stable Late Glacial surface.

Finally, *Zone V* is a well developed sandy loam B horizon which represents the Pleistocene surface. In all cases, excavation was carried into the top of this zone.

#### SIGNIFICANCE

Blueberry Hill is an undisturbed stratified procurement site dating to the Paleo-Indian and Archaic periods, overlain by a possible micro-band base camp dating to the Woodland I and Woodland II periods. This latter occupation has been disturbed by cultivation. The western extent of the site as it existed in prehistoric times cannot be determined because of the sand pits.



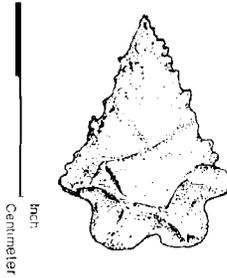
Plate 12

John Foss examines a profile with Cherie Clark and Cara Lee Blume

#### BLUEBERRY HILL DATA RECOVERY PLAN

In view of the site's undoubted eligibility, a data recovery plan for a Phase III project was developed in consultation with the Federal Highway Administration, Delaware Department of Transportation, and the State Historic Preservation Officer. Three objectives were set forth:

1. To determine the structure of the Paleo-Indian and Archaic occupations of the site.
2. To obtain information on the natural setting of the site during those time periods.
3. To recover a sample of the Woodland occupation of the site.



**Figure 41**

Bifurcate point found on the site by DeIDOT survey party member Steve Vess in the vicinity of the Phase I test

**TASK LIST**

Six tasks were identified for the data recovery phase of the project:

*Task 1:* About 30% of the remaining site area is to be totally excavated, following the methods used in the Phase II project.

*Task 2:* Zone I will be removed from the remaining part of the site.

*Task 3:* Zones below the plowzone will be excavated by the same methods as in the original segments.

*Task 4:* One quadrant of each unit below Zone I will be water screened in order to recover small debitage and charred organic material.

*Task 5:* Environmental studies, including soil analysis, pollen studies, geomorphological studies of nearby bay/basin and/or floodplain below site, analysis of carbonized vegetable material from water screening, blood residue analysis of tools, and C<sub>14</sub> dating, will be conducted by appropriate sub-contractors.

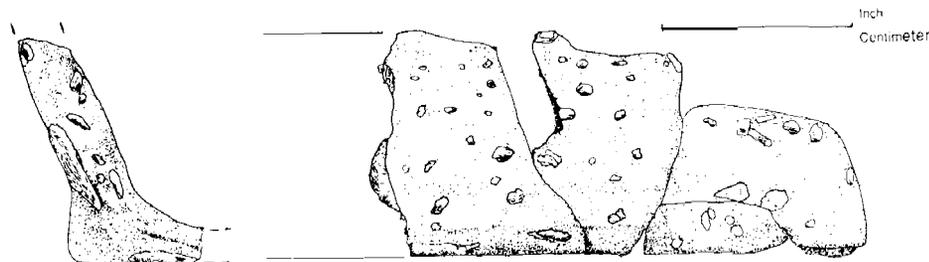
*Task 6:* The cultural material recovered from the site will be analysed and a final report will be prepared.

**PHASE II AT WHITE MARSH**

The sprawling White Marsh site consists of a series of loci ranged over the peninsula formed by the mouth of White Marsh Branch and the ditch system that has replaced it. In this area are several distinct prehistoric occupation areas on a point of high ground (PLATE 13).

This high ground has been altered by many intrusions, including but not limited to three centuries of cultivation, borrow pitting, trash disposal, a power line, and ditching.

The 1990 testing had identified stratified prehistoric deposits on a small sandy peninsula that appears to be intact in the midst of heavy disturbances. It was necessary at the Phase II level to identify any other undisturbed parts of the site that might have survived.



**Figure 42**

Basal sherds of Marcey Creek steatite-tempered pottery from the second level of ER 78, Blueberry Hill Site

Inside the northern alignment was an area of field edge, overlooking lowlands of the river valley. This area had not been tested during the Phase I survey, but it gave the outward appearance of moderate disturbance. In spite of the intrusions, the peninsular section at least appeared to retain integrity sufficient for eligibility.

The approach was to sink a series of approximately fifteen 3' by 3' test squares in and around the proposed construction route.

First of these tests, ER 103, was a unit near the center line, positioned just above the brink of the hill overlooking the boggy floodplain. The soil here was a sandy Sassafras loam .

Under a thin layer of organic material was a layer of yellow sand to a depth of 14 centimeters. Under this layer was another thick mat of roots, about four centimeters thick. Below this, to a depth of 47 centimeters, was a deposit of brown sandy soil. The content of this layer was almost entirely prehistoric, including fire-cracked rocks and two side-notched points.

Another layer of yellow sand, ER 103a, between 47 and 55 centimeters, also contained prehistoric materials, including pottery and fire-cracked rocks.

Between 55 and 65 centimeters, a layer of darker sand, ER 103b, contained a large sherd of refined white earthenware and a number of fire-cracked rocks.

The next layer, ER 103c, between 65 and 75 centimeters, consisted of lenses of dark and light sand, and contained flakes as well as one sherd of white refined earthenware.

From 75 to 85 centimeters, ER 103d contained more broken rocks, flakes, a point, and prehistoric pottery. Also at this level was a ferrous-metal knife blade.

Finally, between 85 and 115 centimeters, was a dark soil layer identified by John Foss as an old Ab horizon on the toe slope, containing more fire-cracked rocks, prehistoric pottery, and a piece of brick.

Foss postulated that the last layer had been the ground surface before the site was disturbed in historic times.

The next two tests, numbered 104 and 105, were sunk into the edge of the flat field a short distance in from the bank. Immediately below the plowzone, the soil profiles exhibited lamellae typical of a very old deposit. Historic and prehistoric artifacts were thoroughly mixed in the plowsoil. Foss concluded that this part of the site had been heavily eroded in historic times, and that the plowsoil rested directly on very old soils that probably predated human occupation.

A row of three-foot test squares, numbered 106 to 112, was opened slightly uphill from the earlier survey's shovel test pits. These tests at 25-foot intervals where possible, yielded fire-cracked rocks, flakes, and prehistoric pottery as well as a few historic items.

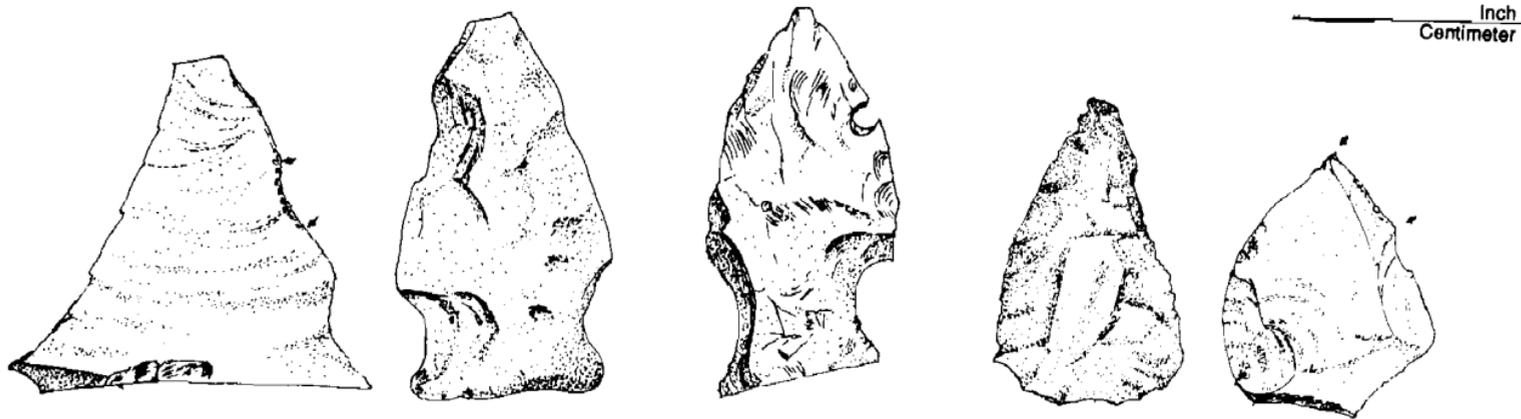
All this material was thoroughly mixed in a layer of clay soil as deep as 70 centimeters deep. Historic brick was found on the bottom of ER 111, at that depth. In two instances, plowscars crossed the clay subsoil at the bottom of this deposit.

In the last test pit, ER 112, there was a distinct buried A horizon 15 centimeters thick, under 40 centimeters of lighter-colored soil. At 60 centimeters, resting on undisturbed clay subsoil, was an oystershell.



Plate 13

Section of a shovel plow scar from ER 113, White Marsh



Utilized flake,  
working edge  
bracketed by arrows  
ER 103

Argillite  
generalized  
side-notched  
point  
ER 103

Chert generalized  
side-notched point  
with fossil cast in  
blade edge ER 103

Quartzite  
end scraper  
ER 107

Utilized flake,  
working edge  
bracketed by arrows  
ER 103

## Figure 45

Selected artifacts from Phase II testing at White Marsh site, actual size

This row of test squares demonstrated that the soil in this vicinity had been plow disturbed and had received soil through the sheet erosion process from the field above. The presence of plow scars demonstrated that the field had historically extended to the edge of the terrace, far beyond the present edge.

A final traverse (ER 113 – ER 118) was designed to cut across the proposed new roadway from the end of the first traverse, and to determine if there was any possibility that buried features might have survived.

The first test unit, ER 113, was positioned on a terrace behind the well-established recent field edge. The upper level was obviously a plow zone, 40 centimeters deep. Underlying the plowsoil was a hard yellow clay which was traversed by a series of plowscars (PLATE 13, FIGURE 47).

Each scar ran generally east-west, but they were not strictly parallel, indicating that they were made at different times by single-bottom plows or harrows.

Three scars in particular could be profiled. All were round-bottomed, one of them extending 7 centimeters below the plowzone. A piece of brick was found in the deepest of the scars.

These marks indicate the use of shovel plows, which supposedly penetrated only three inches. It can therefore be assumed that during the period of these plowings the topsoil was very thin, and probably was being eroded away.

After shovel plowing was discontinued, the same erosion process filled the area considerably.

The next test, 25 feet away, was inside the field's modern boundary. The plowzone was darker in color, with decidedly better texture, from an agricultural point of view. It was only 30 centimeters deep, and there were no plowscars on the bottom.

Tests 115 through 118, at intervals of 25 feet, also revealed no evidence of plowscars or other features.

As a final move to determine the presence or absence of historic or prehistoric remains on the site, a Gradall was used to cut six trenches in the cultivated part of the site, numbered 119 to 124. In all cases, very old soils were found immediately below the plowzone. There were deep plowscars from mouldboard plows, and a number of planting holes (FIGURE 48).

These Phase II tests showed that the undisturbed component of the site is confined to the peninsula, which is not affected by the proposed roadway. No further work is recommended at White Marsh.