

VI. FEATURE DESCRIPTIONS

A. INTRODUCTION

Twenty-four archaeological features were identified and excavated during testing and data recovery investigations. Fourteen features were located in the West Block Excavation, four in the East Block Excavation, and six in the pit house block excavation (Figure 7 [see end pocket of this report]). Feature types included 14 fire-cracked rock clusters, a possible pit house and storage pit, two pit hearths, two post molds, two cobble caches, and two anomalies. Feature descriptions are presented below grouped by feature type, and are summarized in Table 6.

B. DESCRIPTIONS

1. Fire-Cracked Rock (FCR) Clusters

The most numerous feature type encountered at the Whitby Branch Site were concentrations of cracked rock that may have functioned as hearths for cooking and resource processing. The majority of these features were identified in the West Block Excavation.

a. Feature 1

Feature 1 is a diffuse cluster of cracked rock measuring approximately 50 centimeters in length, found within Level 2 of the West Block Excavation. No soil staining was visible around the feature elements. A quartz contracting-stemmed point base (Catalog No. 96/16/16) was recovered proximal to the feature in Level 2. Feature 1 is interpreted as a surface hearth.

b. Feature 2

Feature 2 is a cluster of cracked rock identified in Level 2 of the West Block Excavation (Figure 8). Soil staining was not observed in proximity to the feature, which measures about 35x20 centimeters. An anvil/nutting stone (Catalog No. 96/16/37) was recovered from the center of the rock cluster. A quartz Pequea notched point (Catalog No. 96/33/511) and a quartz stemmed point (Catalog No. 96/16/516) were found within 1 meter of the feature. Feature 2 is interpreted as a surface hearth.

c. Feature 3

Feature 3 consists of a small linear cluster of cracked rock in the West Block Excavation, Level 3, and measures approximately 80 centimeters in length. Soil staining was not visible around the feature. A large quartzite anvil stone (Catalog No. 96/33/31) was recovered from among the feature elements. This specimen shows distinctive wear scars on either pole. Feature 3 is interpreted as a surface hearth.

Table 6. Feature Log, Site 7NC-G-151

FEATURE	BLOCK	LEVEL	SAMPLES	DESCRIPTION
1	West	2		FCR cluster
2	West	2		FCR cluster
3	West	3	Flotation	FCR cluster
4	West	2	Flotation	FCR cluster
5	West	2	Flotation	Cobble cache
6	West	3	Flotation, OCR	FCR cluster
7	West	3	Flotation	Cobble cache
8	West	3	Flotation	FCR cluster
9	West	2-3		FCR cluster
10	West	2	Flotation	Tree burn
11	West	2	Flotation	FCR cluster
12	West	2	Flotation	FCR cluster
13	West	2	Flotation	FCR cluster
14	East	2		FCR cluster
15	East	2	Flotation	FCR cluster
16	West	2	Flotation, OCR	FCR cluster
17	East	2	Flotation, C14, soil chemistry	Modern fencepost
18	East	2	Flotation	FCR cluster
19	Pit house	2-4	Flotation, C14, soil chemistry	Possible pit house
20	Pit house	2-3	Flotation, C14	Pit hearth
21	Pit house	5-8	Flotation, OCR, soil chemistry	Storage pit
22	Pit house	2-3	Flotation, OCR, soil chemistry	Pit hearth
23	Pit house	2-3		Post mold
24	Pit house	2-4		Post mold

d. Feature 4

Feature 4 is a small linear cluster of cracked rock, measuring approximately 40 centimeters in length, located in Level 2 of the West Block Excavation. No soil staining was associated with this feature. An argillite stemmed point and a quartz stemmed point (Catalog No. 96/33/24) were found within 1 meter of Feature 4 in adjacent Excavation Unit 24. Feature 4 is interpreted as a surface hearth.

e. Feature 6

Feature 6 is a tight cluster of cracked rock located in the West Block Excavation, Level 3, measuring approximately 60x50 centimeters (Figure 9; Plate 6). No soil staining was visible around the feature elements. Feature 6 is interpreted as a surface hearth. Oxidizable carbon ratio (OCR) dating of a soil sample from within the feature yielded a date of 430-300 BC (ACT-2524).

f. Feature 8

Feature 8 is a small cluster of cracked rock in Level 3 of the West Block Excavation, measuring approximately 55x45 centimeters. Soil staining around the feature elements was not observed. Two jasper Jack's Reef Corner Notched points (Catalog Nos. 96/33/36 and 96/33/97) and a quartz



PLATE 6: Feature 6, Overhead, Site 7NC-G-151

contracting-stemmed point (Catalog No. 96/33/63) were recovered adjacent to the feature within a range of 1 meter. Feature 8 is interpreted as a surface hearth.

g. Feature 9

Feature 9 is a small cluster of cracked rock located within Level 2 of the West Block Excavation. Measuring approximately 40x20 centimeters, the feature displayed no apparent contrast in soil color or texture with the surrounding matrix. Among the feature elements recovered was a fine-grained metasedimentary bannerstone (Catalog No. 96/33/102). This specimen exhibited a longitudinally drilled core and a ground, triangular-shaped body. A rhyolite Susquehanna Broadspear (Catalog No. 96/33/166), a jasper corner-notched point base (Catalog No. 96/33/166), and a quartzite contracting-stemmed point (Catalog No. 96/33/170) were recovered within a 1-meter radius of the feature. Feature 9 is interpreted as a surface hearth.

h. Feature 11

Feature 11 is a small cluster of cracked rock located in Level 3 of the West Block Excavation. No distinctive pattern of soil staining was associated with the feature elements. Feature 11 is interpreted as a surface hearth.

i. Feature 12

Feature 12 is a small, tight cluster of cracked rock found within Level 2, West Block Excavation, with an approximate measurement of 30x20 centimeters. No evidence of scorched sediments, organic staining, or charcoal flecking was observed in association with the feature. A chert contracting-stemmed point (Catalog No. 96/33/153), a quartzite contracting-stemmed point (Catalog No. 96/33/280), and a small rhyolite notched point (Catalog No. 96/33/280) were recovered within a 1-meter radius of Feature 12. Feature 12 is interpreted as a surface hearth.

j. Feature 13

Feature 13 is a cluster of cracked rock located in Level 2 of the West Block Excavation (Figure 10). Measuring approximately 60x50 centimeters, this feature exhibits some lateral deformation apparently caused by nearby tree growth. Feature 13 contrasts with other rock clusters in the large size of some of its elements. An ironstone rock, measuring approximately 40 centimeters in length, is double the size of any other specimen in the West Block Excavation. Soil staining was not found in association with the feature elements. A quartzite contracting-stemmed point (Catalog No. 96/33/223) was recovered immediately beneath the rock cluster. Feature 13 is interpreted as a surface hearth. Because of the large size of some of the rocks, they probably would not have been used as boiling stones.

k. Feature 14

Feature 14 is a broad scatter of cracked rock occurring at the base of Level 2 in the East Block Excavation (Figure 11). Organic staining was not present within the limits of the rock scatter, which measured approximately 100x60 centimeters. A chert triangular late-stage biface (Catalog No. 96/33/329) was recovered about 1.3 meters north of the feature. Feature 14 is interpreted as a surface hearth.

l. Feature 15

Feature 15 is a diffuse scatter of cracked rock measuring approximately 100x50 centimeters in Level 2 of the East Block Excavation. No discernible soil staining was evident in or around the feature. A chert triangular late-stage biface (Catalog No. 96/33/329) was recovered approximately 1.5 meters north of the feature. Feature 15 is interpreted as a surface hearth.

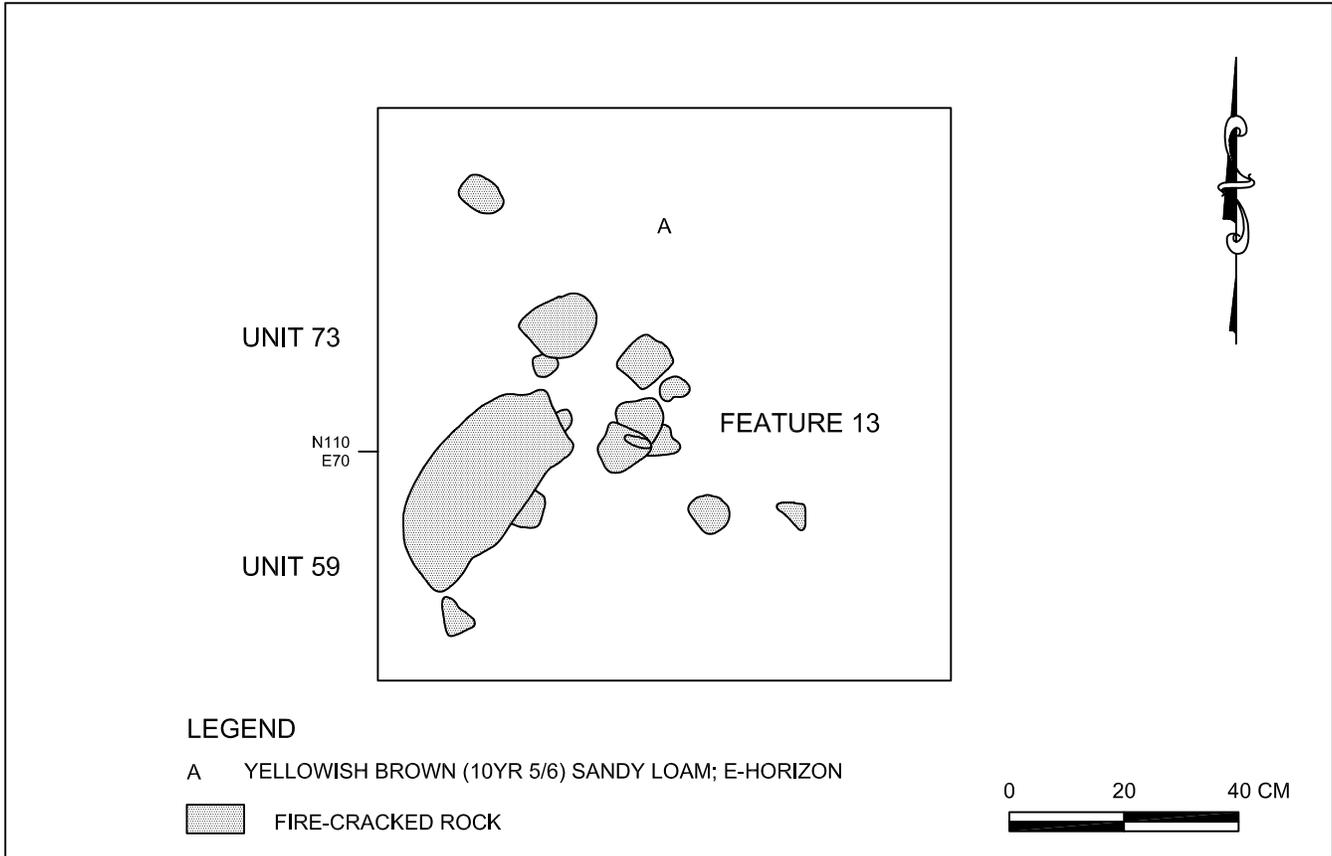


FIGURE 10: Plan, Feature 13, Site 7NC-G-151

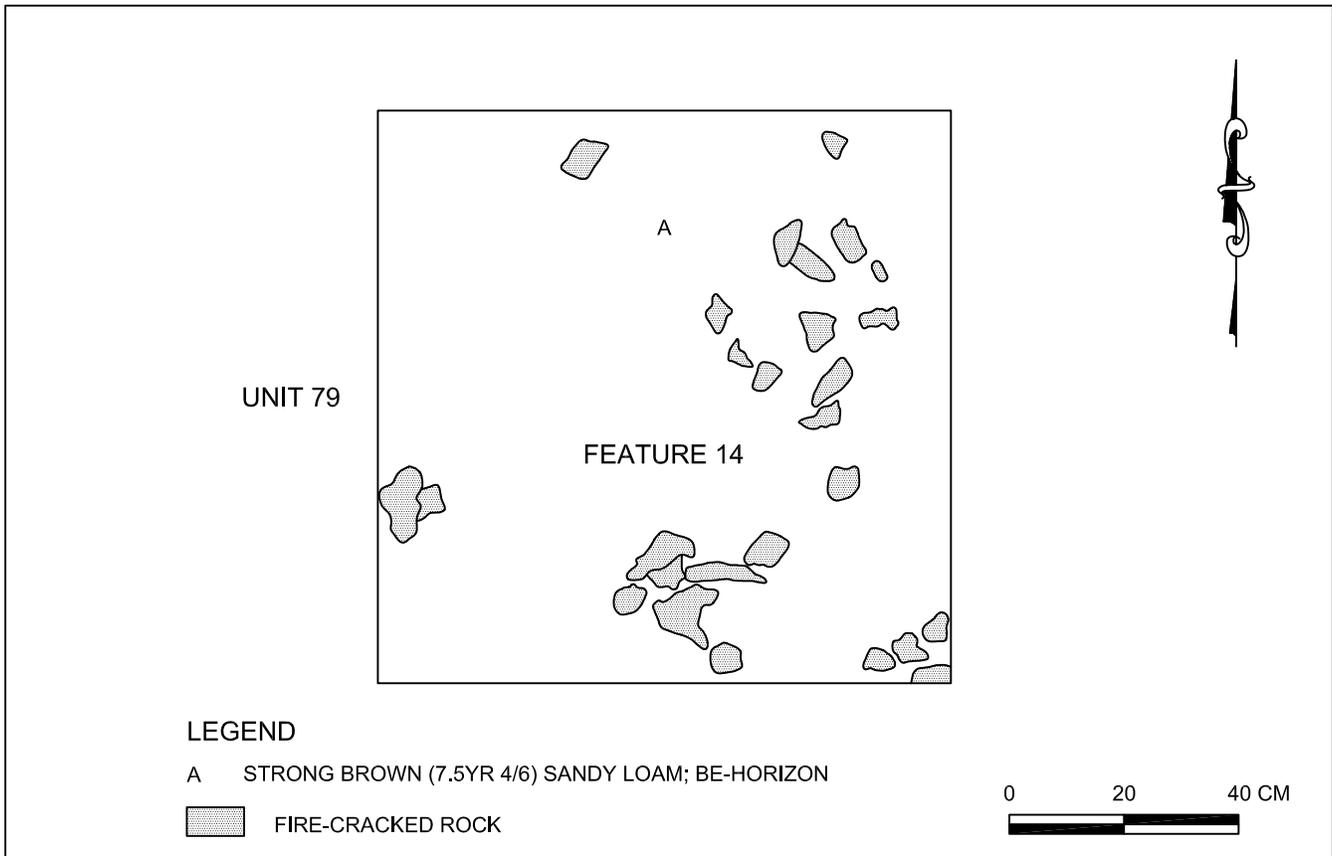


FIGURE 11: Plan, Feature 14, Site 7NC-G-151

m. Feature 16

Feature 16 is a small cluster of rounded and cracked rock found at the base of Level 2 in the West Block Excavation. There were no soil stains associated with the feature, which measured approximately 40x35 centimeters. A chert notched point base (Catalog No. 96/33/452) and a jasper Jack's Reef Corner Notched point (Catalog No. 96/33/509) were recovered approximately 1.5 meters east of the feature. Feature 16 is interpreted as a surface hearth.

n. Feature 18

Feature 18 is a low-density, diffuse scatter of cracked rock in Level 2 of the East Block Excavation. There was no staining associated with the feature elements. Feature 18 is interpreted as a surface hearth.

2. Possible Pit House and Storage Pit

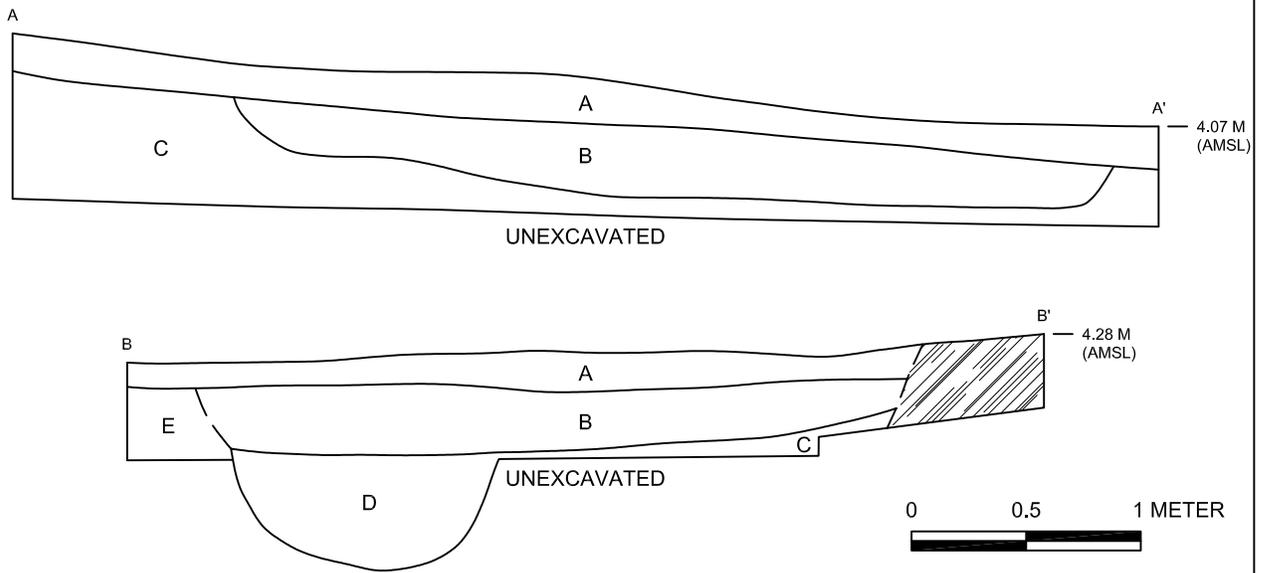
Pit houses are semi-subterranean structures that have been widely reported at Woodland I sites in Delaware (Custer 1994), although there is much debate among archaeologists as to whether some of these features might be natural phenomena such as soil disturbances caused by the uprooting of trees. Prehistoric pit houses were probably constructed of branches or small limbs set in the ground, lashed together, and covered with either hide or bark (see Figure 3). They may have contained interior storage pits, hearths, or other subsistence features. It is likely that these structures served as cold-weather dwellings for single-family groups.

a. Feature 19

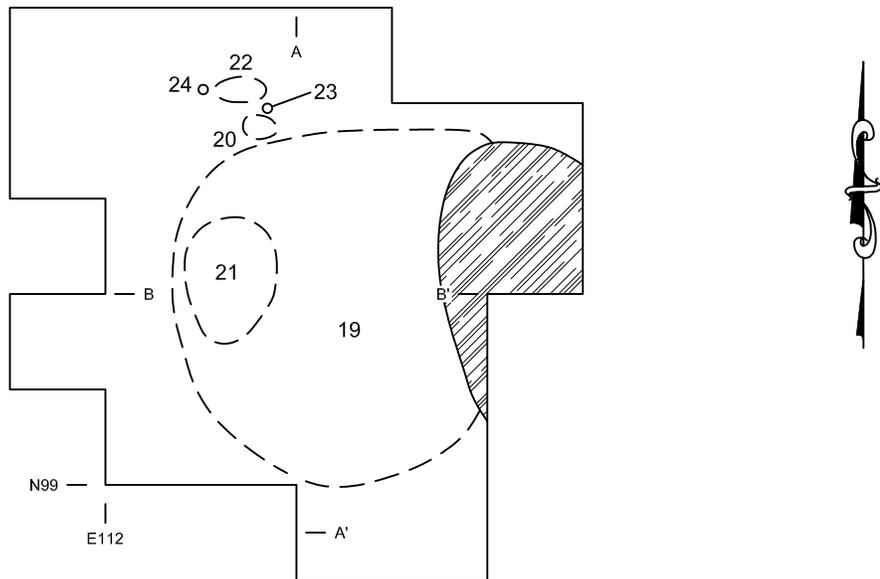
Feature 19 is an ovate soil anomaly, or discontinuity, measuring approximately 3.45x3.1 meters with a maximum thickness of 30 centimeters (Figure 12; Plate 7). This feature lies beneath a thin Ap-horizon at the eastern margin of the site. The feature fill is an intrusive dark yellowish brown sandy loam within a slightly lighter strong brown clayey sandy subsoil. The northern profile of Excavation Unit 101 shows a discontinuity between dark yellowish brown feature fill to the east, and strong brown B-horizon soil into which the feature intrudes, to the west. The eastern end of Feature 19 was somewhat less well defined. That area was somewhat disturbed, most likely as a result of a tree fall.

Pedological analysis points to a likely prehistoric cultural origin for Feature 19 (Wagner 1996b). Indicators of such an origin include organic staining extending to depths of 30 to 40 centimeters below ground surface. Natural organic processes at these depths would be atypical in the well-drained soils of the eastern sector of the site. In addition, the feature boundary marked by the organic staining is pronounced and abrupt, also atypical for natural processes. The large size of the feature tends to preclude tree uprooting as a source of the depression. Although downed trees were observed on the site surface and tree falls undoubtedly occurred regularly in the past, very large trees are not long supportable in the very gravelly soils of the feature vicinity.

CROSS SECTIONS



EXCAVATION BLOCK PLAN



LEGEND

- A DARK BROWN (10YR 3/3 SANDY LOAM; Ap-HORIZON)
- B DARK YELLOWISH BROWN (10YR 4/4) CLAYEY SANDY LOAM; FEATURE C19
- C STRONG BROWN (7.5YR 4/6 CLAYEY SAND LOAM WITH 1% GRAVEL; B-HORIZON)
- D BROWN (7.5YR 4/3) SANDY LOAM; FEATURE 21
- E STRONG BROWN (7.5YR 4/6) CLAYEY SANDY LOAM WITH 10% GRAVEL; B-HORIZON

- — FEATURE
- POST MOLD
-  TREE DISTURBANCE

FIGURE 12: Stratigraphic Soil Profiles, Pit House Block Excavation, Site 7NC-G-151



PLATE 7: Feature 19, Site 7NC-G-151



PLATE 8: Feature 21, Site 7NC-G-151

Chemical analysis of the feature reveals somewhat more ambiguous results (see Table 2). A test for organic matter using the Walkley-Black technique to measure organic carbon can reflect the relict presence of human (or animal) activities (Stein 1992:140). It would be hypothesized that a pit house would show somewhat elevated levels of organic matter, as such a feature would be a focus of human activity. Feature 19, however, exhibited a somewhat lower than average level of organic matter when compared to the site as a whole, though a somewhat higher level than the off-site sample. Likewise, the value of 71 (Estimated Nitrogen Release [ENR] in pounds per acre) from a soil sample taken from the interior of Feature 19 is lower than the overall site average, and only marginally higher than the ENR value of 67 obtained from an off-site control sample. A sampled non-feature context from Excavation Unit 139, Level 2, registered an ENR value of 71. The off-site measurements shown in Table 2 presumably reflect contexts that were not characterized by intensive activity on the part of Native American groups.

Phosphorus is released into soil from the decay of bone and tissue, as well as from the accumulation of organic waste, and can be interpreted as a sign of human occupation (Stein 1992). A soil sample from Feature 19 registered a value of 1,000 for total phosphorus measured in parts per million (ppm). This result is in excess of the off-site control sample (800 ppm) by 25 percent, and a nearby, non-feature context (400 ppm) by 150 percent. The test for total phosphorus, therefore, is consistent with the pedological interpretation of cultural origins for Feature 19, while the Walkley-Black organic matter test is at best equivocal in its results. Analogs of this feature found elsewhere in Delaware have been interpreted as semi-subterranean house structures or “pit-houses” (Custer 1994). Wood charcoal recovered from the feature yielded a calibrated radiocarbon date of 790-400 BC (Beta-100753). At the base of Feature 19 along its interior western margin is a large parabolic pit (Feature 21). This is interpreted as a storage pit within the house structure.

b. Feature 21

Feature 21 is an ovate parabolic pit measuring approximately 120x115 centimeters and reaching a maximum thickness of 50 centimeters. Feature fill consists of two distinct strata, an inner layer (Stratum A) of dark brown sandy loam with small amounts of charcoal flecking, and a thin outer layer, or shell, characterized by brown sandy loam (Stratum B). The orientation of Stratum B along the edges of the pit suggests it is the result of soil slump during the period when the pit remained open. Recovered artifacts from the feature fill total 13 debitage and two FCR from Stratum A, and 20 debitage and three FCR from Stratum B.

Feature 21 is located at the base of Feature 19 along its interior western margin (see Figure 12; Plate 8). The stratigraphic orientation of Feature 21 relative to Feature 19 suggests a functional relationship between the two features. Coupled features, such as Features 19 and 21, have been identified elsewhere in Delaware and are interpreted as pit houses with associated interior storage pits (Custer 1994). Examples include Feature 153 at the Snapp Site (7NC-G-101) (Custer and Silber 1995:47) and Feature 273/332 at the Leipsic Site (7NC-K-194A) (Custer, Riley, and Mellin 1996:46).

A soil sample from Feature 21 submitted for OCR dating returned a date of 675-505 BC (ACT-2523), temporally locating the feature within the 2-sigma bracket of the pit house radiocarbon assay.

Chemical assays of feature fill yielded results considered to be very low for the Walkley-Black test for organic matter (54 ENR from Feature Level 1, and 49 ENR from Feature Level 3). Tests for total phosphorus, however, were very high, with values of 2,300 ppm (Level 1) and 1,700 ppm (Level 3). The disparate results may be explained by the differential oxidation rates of phosphorus and organic matter within sandy soils. Phosphorus strongly bonds chemically to aluminum found in the soil and is not easily oxidized, resulting in a high state of preservation (P. Chu, chemist, A&L Eastern Agricultural Laboratory, personal communication 1997). In contrast, organic matter quickly oxidizes in sandy soils similar to the feature fill, leaving little residue to be detected centuries later. The high levels of captive phosphorus are a useful index of decomposed organic material of the kind likely to be present in prehistoric storage pits, and are consistent with the model of feature function described above.

3. *Pit Hearths*

Pit hearths contrast with the FCR features in several ways. First, unlike the FCR clusters, pit hearths were dug into the ground, creating a bowl or pit within which a fire was contained. Second, the pit hearths found at the Whitby Branch Site contained little or no rock. Third, the pit hearths yielded clear evidence of *in situ* burning in the form of charcoal and reddened soil, while the FCR clusters lacked indications of direct heat.

a. *Feature 20*

Feature 20 is an irregularly ovate stain in plan with a parabolic cross section. In plan the feature measures approximately 60x45 centimeters, with a maximum thickness of about 30 centimeters extending to a depth of 46 centimeters below ground surface. The feature fill is a fire-reddened dark brown sandy loam with small charcoal chunks and flecks. Artifact recovery from the feature matrix was extremely low, consisting of only one jasper flake. Feature 20 is located on the northwestern exterior of Feature 19, beneath the thin Ap-horizon. Feature 20 is interpreted as a probable pit hearth. Radiocarbon assay of wood charcoal yielded a calibrated date of AD 1235-1300 (Beta-100752).

b. *Feature 22*

Feature 22 is an ovate stepped-basin pit with dark reddish brown sandy loam and charcoal. The soil color and charcoal offer clear evidence of *in situ* burning. Artifacts recovered from the feature fill total 47 lithic debitage. Feature 22 is interpreted as a pit hearth, with possible secondary use as a trash pit. Wood charcoal recovered from the feature returned a calibrated radiocarbon date of AD 1020-1275 (Beta-1000757), indicating a Woodland II occupation.

Soil chemistry revealed a high level of total phosphorus in the feature fill (2,200 ppm). The Walkley-Black test for organic matter yielded a low result (64 ENR), although as explained above, these disparate data are not necessarily contradictory. The high phosphorus content of the Feature 22 soil may be an indicator of decayed animal residue resulting from cooking activities, and is consistent with the interpretation of the feature as a hearth or subsequent trash pit.

4. Post Molds

A post mold is the organic remnant of a wooden post or stake set into the ground. Such posts are thought to have supported domestic dwellings, drying racks, smoking platforms, and a variety of other structures.

a. Feature 23

Feature 23 is a cone of dark brown sandy loam measuring 12 centimeters in diameter, with a total depth of 22 centimeters. The feature was encountered in Level 2 and extends into Level 3. Feature 23 is located on the southeastern margin of Feature 22 and is interpreted as a prehistoric post mold. No cultural material was recovered from the feature.

b. Feature 24

Feature 24 is a conical deposit of dark brown sandy loam measuring 15 centimeters in diameter, with a total depth of 32 centimeters. A wedge-shaped lens of brown sandy loam (Stratum D) forms a “skirt” around the upper portion of the feature. Feature 24 was encountered at the Ap-horizon/B-horizon interface and extends into the C-horizon matrix. Feature 24 is located on the western margin of Feature 22 and is interpreted as a prehistoric post mold. Stratum D is interpreted as the associated posthole. No cultural material was recovered from the feature.

The apparent pairing of Features 23 and 24 around Feature 22 may represent the remnants of smoking or drying racks above the hearth.

5. Cobble Caches

A cobble cache is simply a pile of cobbles that a prehistoric flintknapper has gathered together as a store of usable lithic material. These artifacts are generally unmodified.

a. Feature 5

Feature 5 is a 75x40-centimeter cluster of unmodified rounded cobbles within Level 2 of the West Block Excavation. It is not associated with any apparent soil staining. A quartz contracting-stemmed point (Catalog No. 96/33/63) and a jasper Jack’s Reef Corner Notched point (Catalog No. 96/33/36) were recovered at the same level within 1 meter of the feature. Feature 5 is interpreted as a possible cobble cache.

b. Feature 7

Feature 7 is a large scatter of rounded cobbles of various sizes, measuring approximately 2x1.5 meters. The majority of the cobbles appear to be contained within soil consisting of a slightly darker yellowish brown sandy loam than the surrounding matrix. Cobble density within Feature 7 is substantially greater than that found elsewhere within the West Block Excavation at Level 3 and is interpreted as a cache of lithic raw material. The darker stain of the feature interior may be the result of organic matter accumulated on the upslope cobble surfaces through the agency of erosional soil creep. A chert contracting-stemmed point (Catalog No. 96/33/100) and a quartzite contracting-stemmed point (Catalog No. 96/33/143) were recovered within 1 meter of Feature 7.

6. Other Features

Upon excavation and analysis, some features turn out to be natural disturbances such as tree roots or rodent dens. Others are cultural features from recent or modern activities, such as farming or road construction.

a. Feature 10

Feature 10 is an irregular ovate stain consisting of dark yellowish brown A-horizon soils mottled with yellowish red sandy loam and charcoal flecking. This feature was encountered in Levels 2-4 in the West Block Excavation. In cross section, the feature exhibits a deep and narrow profile, resembling a tree taproot. The red soil hues and charcoal staining are consistent with the interpretation of this feature as a tree burn. A chert contracting-stemmed point (Catalog No. 96/33/153) was recovered in Level 2, immediately above Feature 10.

b. Feature 17

Feature 17 is a shallow parabolic pit located in Level 2 in the East Block Excavation. The feature is approximately 60 centimeters in diameter and 15 centimeters thick, and is characterized by a homogeneous matrix of dark yellowish brown sandy loam with charcoal flecking. Artifact recovery from the feature fill was extremely low, consisting of a quartz flake and a piece of FCR. The uncalibrated radiocarbon age of wood charcoal recovered from the feature is 50 years BP \pm 70 (Beta-100756). OCR analysis of soil from the feature also indicated anomalous or modern origins. Feature 17 is therefore interpreted as a probable historic fencepost.