PHASE I AND II RESULTS

To facilitate the completion of the field investigations and to aid in the discussion of results, the Ogletown project area was divided into five geographic segments: Segment A - Access Road - present Route 273 to proposed Route 273; Segment B - Red Mill Road to Amtrak Railroad; Segment C - Access Road - Red Mill Road to proposed Route 273; Segment D - Access Road - Red Mill Road to proposed Route 273 (North of Amtrak); Segment E - Amtrak Railroad to present Route 273 (Avon) (Figure 11; Plate 1). The three proposed wetland replacement areas were investigated on an individual basis as follows: Birchwood Wetland - between Birchwood Estates and Salem Church Road (Figure 12); Route 141 Wetland - Southeast quadrant of the Interstate 295/Route 141 Clover Leaf, south of Newport (Figure 13); Kemeether - Salem Church Road (Figure 14). The results of the Phase I and II archaeological investigations of each segment and wetland area are presented in the following pages.

Segment A is a proposed access road which extends 1100 feet (333 m) northeast from present-day, Route 273 to the proposed Route 273 (Figures 11 and 15). The proposed right-of-way is approximately 50 feet (15 m) wide and contained areas of both low and high potential for prehistoric site locations (Figure 4). Previous archaeological research identified one prehistoric site in the immediate vicinity of the segment (Figure 15). The Paradise Lane Site (7NC-D-125), a Woodland I procurement/staging site, was excavated by the University of Delaware Center for Archaeological Research in 1985 and 1986 (Riley, Custer, Hoseth, and Coleman 1994). Background research revealed no historic resources within Segment A. Since the early nineteenth century, the area was known to have been a woodlot for the surrounding landowners.

Segment A traversed a heavily wooded area that necessitated extensive subsurface archaeological testing at 10 m intervals

along the centerline of the proposed right-of-way. Phase I testing of Segment A consisted of the excavation of 35 shovel test pits that yielded 28 historic artifacts including modern bottle glass and nails (Figure 15; Appendix I). One prehistoric artifact, a jasper flake, was also recovered. The soil stratigraphy of Segment A, as revealed by the shovel test pits, consisted of a thin layer of humus overlying a poorly drained gray silty clay. All artifacts from Segment A were recovered from Shovel Test Pit A27, located in the yard area of a twentieth century house built along Paradise Lane after 1954 (Plate 2). The historic artifacts were associated with the modern occupation of the house and were not historically significant. The prehistoric artifact represented an isolated find recovered from a disturbed context. No further archaeological work is recommended for Segment A.

Segment B - Ogletown Interchange

Segment B consists of the proposed realignment of Route 273, leading approximately 1400 feet (424 m) north from Paradise Lane to the Amtrak Railroad (Figures 11 and 16). The width of the

proposed right-of-way in Segment B is 100 feet (30 m). Background research indicated that this segment contained no previously recorded prehistoric sites. The southern half of Segment B has a low potential for prehistoric sites, and the northern half has a high potential for prehistoric sites. Background research revealed no historic resources within this segment. Segment B consisted of a mixture of urban, wooded, and agricultural settings and contained two twentieth century standing structures (Figure 16). The two structures do not appear on the 1954 aerial photo of this region. The aerial photo shows a modern trash disposal area north of present day Paradise Lane (Plate 2).

Changing land use from urban to wooded to agricultural necessitated subsurface archaeological testing at 10 m intervals. A total of 36 shovel test pits were excavated along the centerline of the proposed right-of-way of Segment B, yielding 11 historic artifacts (Figure 16; Appendix I). Whiteware, modern bottle glass, brick and a glass marble were recovered from the plow zone of Shovel Test Pits B2, B3, B4, B18, and B35. The soil stratigraphy of Segment B consisted of 20 cm of gray-brown silty loam overlaying a sterile orange and gray mottled clay subsoil. The few artifacts recovered from disturbed contexts and no sub-surface features were identified. Phase I testing of Segment B revealed no significant cultural resources. No further archaeological work is recommended in Segment B.

Segment C - Ogletown Interchange

Segment C consists of a proposed access road from Red Mill Road to the proposed Route 273 (Figure 11). The proposed right-of-way subjected to archaeological testing was approximately 680 feet (206 m) long and 50 feet (15 m) wide (Figure 17). There is a low potential for prehistoric site locations throughout this segment due to the high degree of development (Figure 4). Background research revealed no known prehistoric sites in this segment. Two potential historic sites, structures owned by S. Morrison depicted on Beers atlas of 1868 (Figure 18), are located south of and outside the right-of-way of the proposed feeder road. These potential sites have been severely impacted by twentieth century residential, commercial, and road construction (Plate 2).

The excavation of 27 shovel test pits (Figure 17) in this segment yielded no prehistoric artifacts and 33 historic artifacts (Appendix I). Historic artifacts were recovered from the plow zone of Shovel Test Pits C4, C5, C8, C9, C10, C12, C13, C19, C20, and C27, and included modern bottle glass fragments and modern architectural items such as asbestos tile and ceramic drain pipe fragments. No domestic artifacts were recovered.

The soil profiles of the excavated shovel test pits revealed the highly disturbed nature of this area. The southern portion of Segment C between Shovel Test Pits C21 and C18 (Figure 17) displayed a simple gray-brown loam plow zone overlying a sterile

yellow-brown sandy loam subsoil. The plow zone in the 65-foot (20 m) area between Shovel Test Pits C17 and C15 was overlain by 30 cm of orange sandy clay fill. No artifacts were recovered from these shovel test pits. A old road bed, consisting of hard-packed orange clay with gravels and asphalt, was encountered in Shovel Test Pits C10 through C6 (Figure 17). The soil profile of Shovel Test Pits C1 through C5 consisted of 10 cm of brown silty loam overlying a sterile orange brown silty loam.

Phase I testing of Segment C revealed no significant historical cultural resources. The area in and around Segment C has been severely disturbed by twentieth century construction and development, therefore, no further archaeological testing is recommended.

Segment D - Ogletown Interchange (Gabor Site Area C, 7NC-D-131C; N-10944)

Segment D consists of a proposed access road leading from the western end of the existing Red Mill DuPont Plant access road to the new proposed Route 273 (Figure 11). The proposed right-of-way is approximately 650 feet (197 m) long and 60 feet (18 m) wide and traverses a new-growth woodlot (Figure 19). Background and archival research revealed no known prehistoric or historic sites in this segment.

Phase I investigations consisted of the excavation of 17 shovel test pits at 10 m intervals along the proposed right-of-way (Figure 19). Nine pieces of prehistoric debitage were located in the plow zone of Shovel Test Pits D3, D11, D14, D15, and D16. Ten historic artifacts (whiteware, window glass, brick and nails) were found in the plow zone of Shovel Test Pits D1, D3, D12, D13, and D14. An additional 20 shovel test pits (Figure 20) were excavated around the pits that contained artifacts. An additional five flakes were found bringing the total to 14 pieces of debitage (Appendix I).

Phase II investigations consisted of the excavation of seven 1 x 1 m test units (Figure 20). These units, along with the Phase I shovel test pits, were used to determine the site limits. The presence of artifacts was limited to a 20 x 25 m area (Figure 20). The test units were also excavated to determine site stratigraphy and to identify any intact subsurface cultural features.

Artifacts recovered from the Phase II test units consisted of quartz, quartzite, and jasper flakes, quartz shatter, two utilized flakes, fire-cracked rocks and two pieces of gneiss (Appendix I). Soil stratification is depicted in Figure 21 and consisted of two artifact bearing soil levels below the humus. A 15 to 20 cm brown silt horizon overlaid a thin layer of dark yellow brown silt. The sterile subsoil consisted of a yellow brown silty clay. Although the present topography of Segment D consists of woods and underbrush, a 1954 aerial photograph of the Ogletown area indicates that this area was once a plowed field, at least four decades ago (Plate 2). Ninety-six percent of the artifacts recovered were from Soil A, the disturbed plow zone.

FIGURE 21

Segment D--Ogletown Interchange (7NC-D-131C), Soil Profile of Test Unit D5

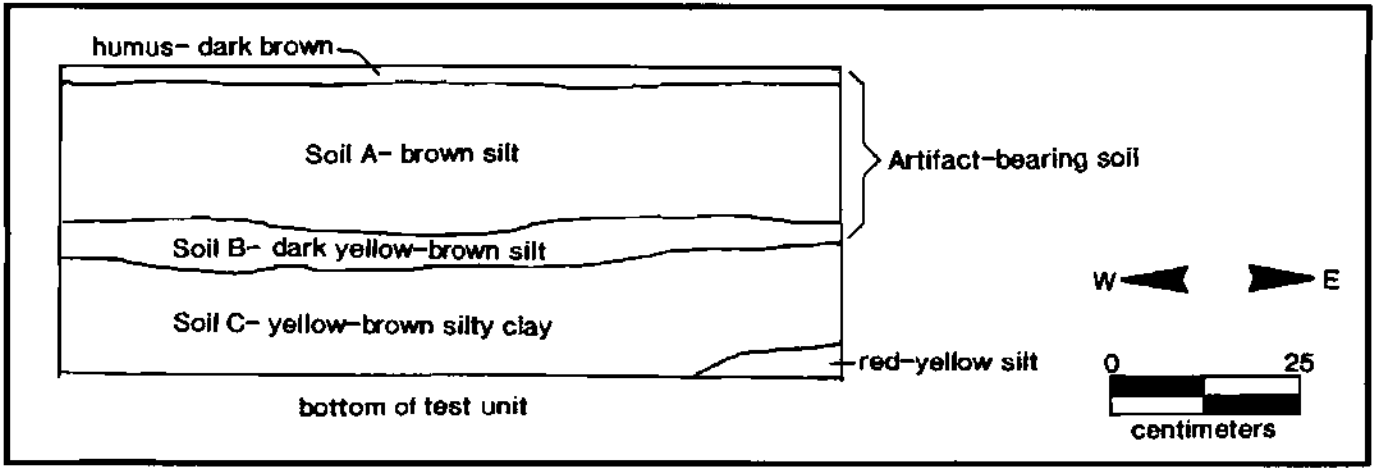


TABLE 1

7NC-D-131C, Lithic Artifact Summary Catalog

	Quartzite	Quartz	Chert	Jasper	Ironstone	Gneiss
Flakes						
Soil A	27(4)	35(5)	---	1	1	2
Soil B	---	2	---	---	---	---
Total	27(4)	37(5)	---	1	1	2
Utilized flakes						
Soil A	1	---	1	---	---	---
Soil B	---	---	---	---	---	---
Total	1	---	1	---	---	---
Shatter						
Soil A	---	4(1)	---	---	---	1(1)
Soil B	1	---	---	---	---	---
Total	1	4(1)	---	---	---	1(1)
Total	**29(4)**	**41(6)**	**1**	**1**	**1**	**3(1)**

	Total	%
Quartzite	29(4)	38.2
Quartz	41(6)	53.9
Chert	1	1.3
Jasper	1	1.3
Ironstone	1	1.3
Gneiss	3(1)	3.9
Total	**76(11)**	**100.0**

Three artifacts were recovered from the first 10 cm level below the plow zone (Appendix I). The major lithic types found at the site were quartzite and quartz (Table 1).

The artifacts from the Gabor Site Area C were recovered from a disturbed context and no intact cultural features were identified. This site is not eligible for the National Register of Historic Places and no further work at Site 7NC-D-131C or the remainder of Segment D is recommended.

Segment E - Ogletown Interchange

Segment E is a section of the proposed Route 273 leading from the Amtrak railroad approximately 2,000 feet (606 m) northwest to existing Route 273 (Figure 11). This segment crosses one known prehistoric site (7NC-D-131B, Gabor Area B; Plate 1). Segment E is also located near another known prehistoric site (7NC-D-131A, Gabor Area A; Plate 1) Background and archival research revealed no known historic sites in this segment. A total of 49 shovel test pits were excavated at 10 m intervals along the centerline of the proposed right-of-way. Testing at the two prehistoric sites was completed in two sections.

Gabor Site Area A (7NC-D-131A; N10944). The Gabor Area A Site was identified in a plowed field 400' north of the Amtrak railroad during the 1986 archaeological survey of the Ogletown Route 273 improvement area (Coleman, Hoseth, and Custer 1987). Surface collections from Area A included quartz and jasper debitage and mid-nineteenth through twentieth century ceramic and glass fragments that were discontinuously distributed over a 225 m x 220 m area (Coleman, Hoseth, and Custer 1987:182-183). Previously, five test units were excavated along the centerline of the 1986 proposed right-of-way. Historic artifacts recovered from the units included brick, bottle glass, unidentifiable metal, and clay pigeon fragments. No prehistoric artifacts were recovered. The site was located beyond the limits of the 1986 Route 273 proposed right-of-way and no further work was recommended at that time.

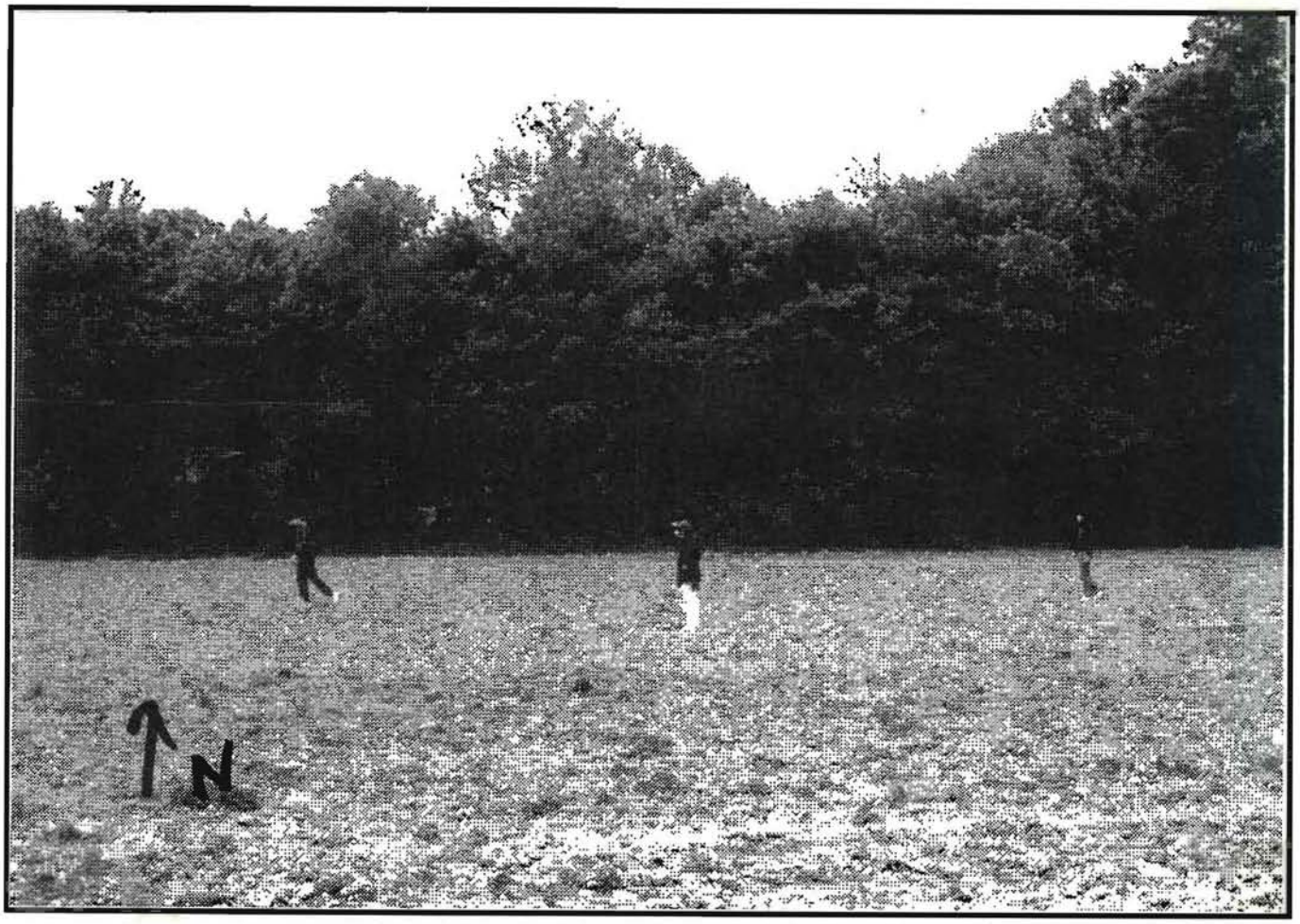
The proposed 1993 realignment of Route 273 necessitated archaeological testing of the realigned section to see if it intruded into Area A of the Gabor Site. Phase I testing consisted of the excavation of 26 shovel test pits at 10 m intervals along the centerline of the proposed right-of-way (Figure 22). Artifacts were located in seven of the shovel test pits. Five flakes and three fire-cracked rocks were located within the plow zone soils of shovel test pits E6, E16, E22, E24, and E25. Three historic artifacts (whiteware, redware and window

glass fragments) were recovered from shovel test pits E5, E6, and E18. Soil stratigraphy of this section of Segment E consisted of a simple 30 cm deep plow zone of gray brown silt overlying a sterile gray and orange mottled silty clay subsoil. Artifacts recovered from disturbed plow zone soil and the absence of features or artifacts from undisturbed contexts suggests that the site limits of Gabor Area A were correctly identified during the 1986 survey and the site is located outside the 1986 and the 1993 proposed right-of-way. No further work is recommended for this section of Segment E.

Gabor Site Area B (7NC-D-131B, N-10944). Area B of the Gabor Site is located on an east-facing rise approximately 1000 feet (303 m) west of Red Mill Road and 50 feet (15 m) north of the Amtrak Railroad line (Figures 11 and 23; Plates 1-3). Cool Run borders the site to the west and north. Approximately one third of the site extends from a cultivated field into a new-growth woodlot to the north and west (Figure 23; Plate 3). The irregular topography of the cultivated field suggests only minor

PLATE 4

Gabor Site--Area B (7NC-D-131B, N-10944)



soil deflation and erosion. The predictive model developed for the 1986 Ogletown Improvements project area (Coleman, Hoseth, and Custer 1987) indicated that this area was in a high probability zone for prehistoric sites (Figure 4).

The 1986 Phase I survey of Area B consisted of a surface collection of the plowed field (Plate 4) that identified two concentrations of lithic debitage (Coleman, Hoseth, and Custer 1987:183). The site limits, determined by the extent of surface finds, were roughly rectangular in shape and measured approximately 90 m by 70 m. Artifacts recovered from the Phase I survey of Area B consisted of quartz and quartzite lithic debitage, two biface fragments, a Palmer projectile point dating to the terminal Paleo-Indian Period, and a Woodland I stemmed projectile point. No further work was recommended for Area B of the Gabor Site because the site limits were located outside the 1986 proposed right-of-way.

Design plans for the proposed 1993 realignment of Route 273 in the area north of the Amtrak railroad shifted the proposed right-of-way 300 feet (90 m) to the south of the original alignment and added a feeder road (Figure 11). This proposed

TABLE 2

Gabor Area B Site (7NC-D-131B), Total Prehistoric Artifact Summary Catalog

	Quartz	Quartzite	Chert	Jasper	Ironstone	Argillite	Rhyolite	Total
Flake	430(7)	9(2)	53(5)	157(16)	4	2		655(30)
Utilized flake	9		2(1)	10(2)				21(3)
Flake tool		1	1	1				3
Woodland I point			1(1)	1				2(1)
Archaic point				1				1
Early stage biface reject	2		1	1				4
Late stage biface reject							1	1
Late stage biface discard					1			1
Biface fragment	1							1
Miscellaneous stone tool	1			1				2
Core	1(1)							1(1)
Shatter	24(4)	2(1)						26(5)
Total	**468(12)**	**12(3)**	**58(7)**	**172(18)**	**5**	**2**	**1**	**718(40)**

Gneiss 5 (1,389 g)
Fire-cracked rock 90 (11,302 g)

	Total Count	%
Quartz	468(12)	65.2
Quartzite	12(3)	1.7
Chert	58(7)	8.1
Jasper	172(18)	24.0
Ironstone	5	0.7
Argillite	2	0.2
Rhyolite	1	0.1
Total	**718(40)**	**100.0**

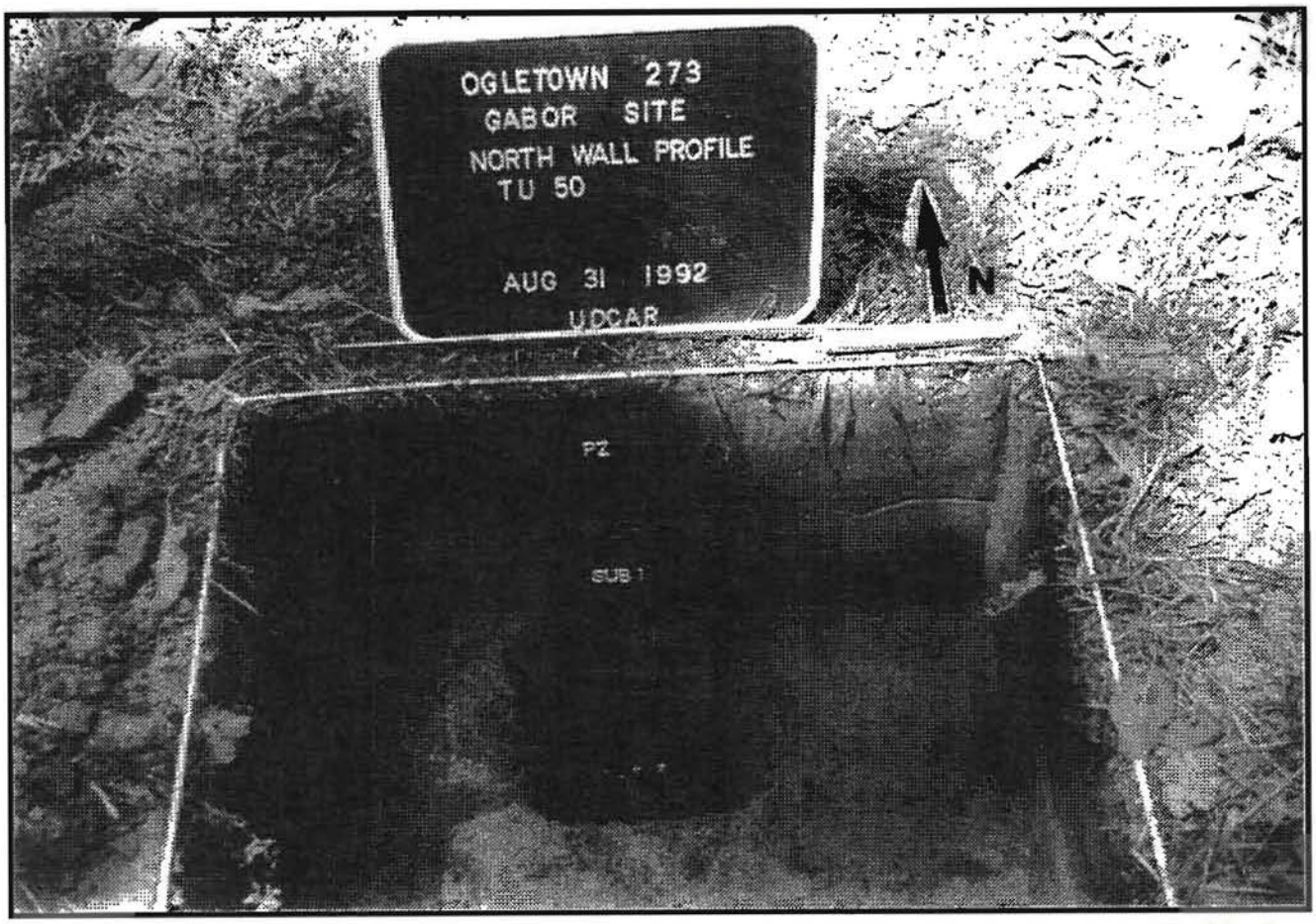
realignment and feeder road will directly impact Area B of the Gabor Site necessitating additional archaeological testing.

The 1986 western and northern site boundary of Gabor Area B was the woodline (Figure 23). Additional Phase I survey within the woods adjacent to Area B during 1994 consisted of 16 shovel test pits excavated at 10 m intervals along the centerline of the 1993 proposed right-of-way. Four flakes and four fire-cracked rocks were recovered from shovel test pits E30, E33, E37, E45, and E46. Three bottle glass fragments and three nails were found in shovel test pits E32, E33, E36 and E49. The presence of prehistoric material in the woods suggested that the western limit of the Gabor Site Area B does not end at the field edge. Additional archaeological testing was required in the woods to define site limits of the Gabor Site Area B.

Additional testing at the Gabor Site Area B was intended to define occupation limits, determine stratigraphic context, derive a larger excavated sample of prehistoric artifacts, and identify any intact, sub-surface cultural features. A combination of 112 shovel test pits and 62 test units were excavated to investigate the site limits (Figure 23) and many of these units and shovel test pits contained artifacts. A summary catalog of all prehistoric artifacts excavated at the site is provided in Table 2. Most of the artifacts recovered from the site were found in

PLATE 5

Gabor Site Area B, North Wall Profile of Test Unit 50



either the plow zone or in features, but a few areas of the site contained artifacts in soils below the plow zone. The areas containing high artifact concentrations in the plow zone also contained sub-soil artifacts (Figure 24). Due to the low density of artifacts in the sub-soil, it is likely that the artifacts migrated downward through soil horizons via natural processes. Ninety-four percent of the artifacts were recovered from the plow zone and six percent of the artifact total was recovered from the subsoil. Figure 25 shows a composite east/west soil profile across the site. The north wall profile of Test Unit 50 is depicted in Plate 5.

Five areas of high lithic artifact concentrations were identified through plow zone testing and may indicated activity areas. Three of these areas correspond to intact prehistoric features identified below the plow zone of the units in areas of artifact concentration (Figure 26). A large amount of lithic debitage was recovered from the ten units excavated above Feature 3 (Figure 26). Thirty-six percent of the flakes recovered from

FIGURE 25

Gabor Site Area B: East/West Soil Profile

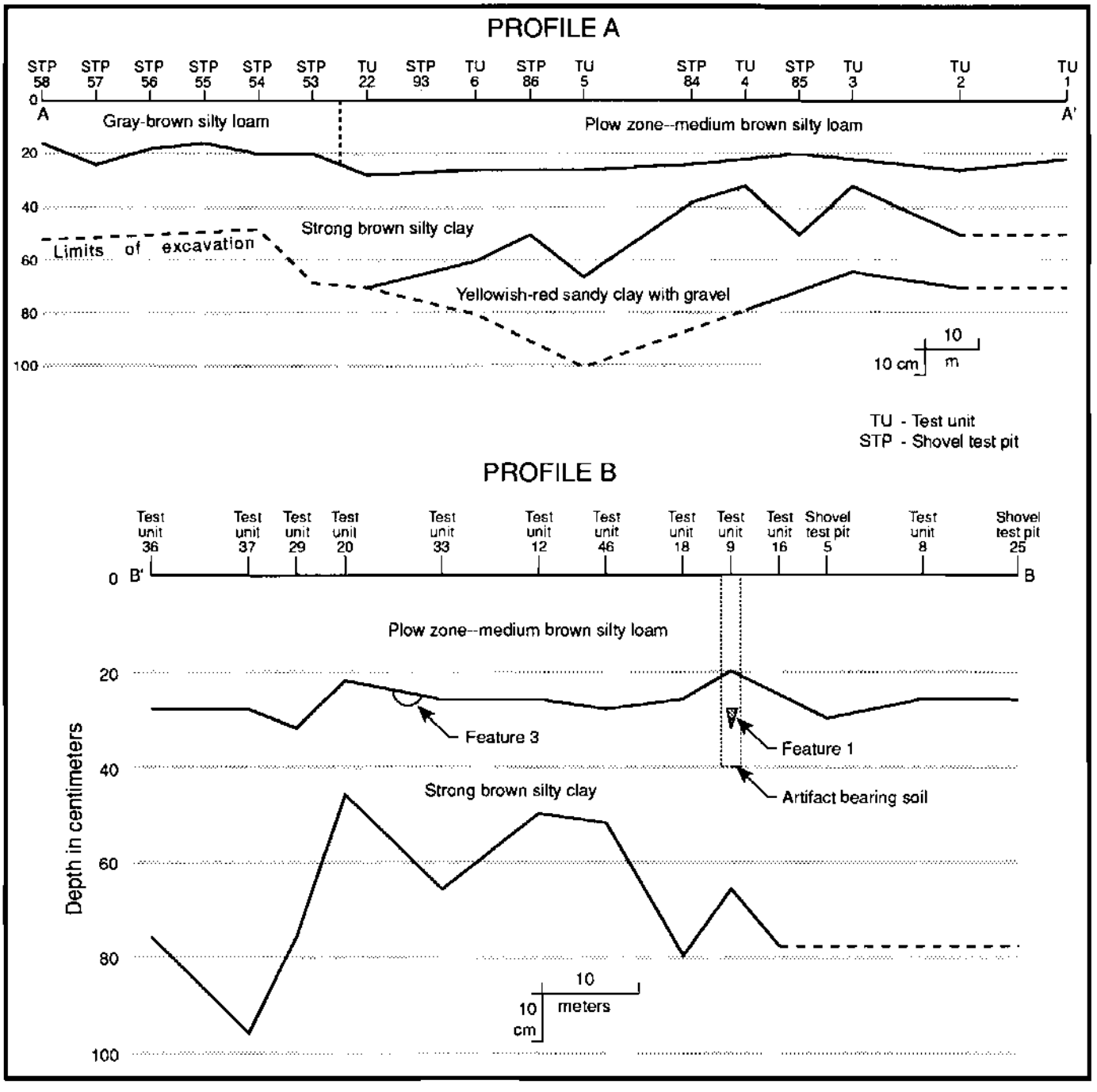


FIGURE 26

Gabor Site Area B: Artifact Distributions in Units Above Feature 3

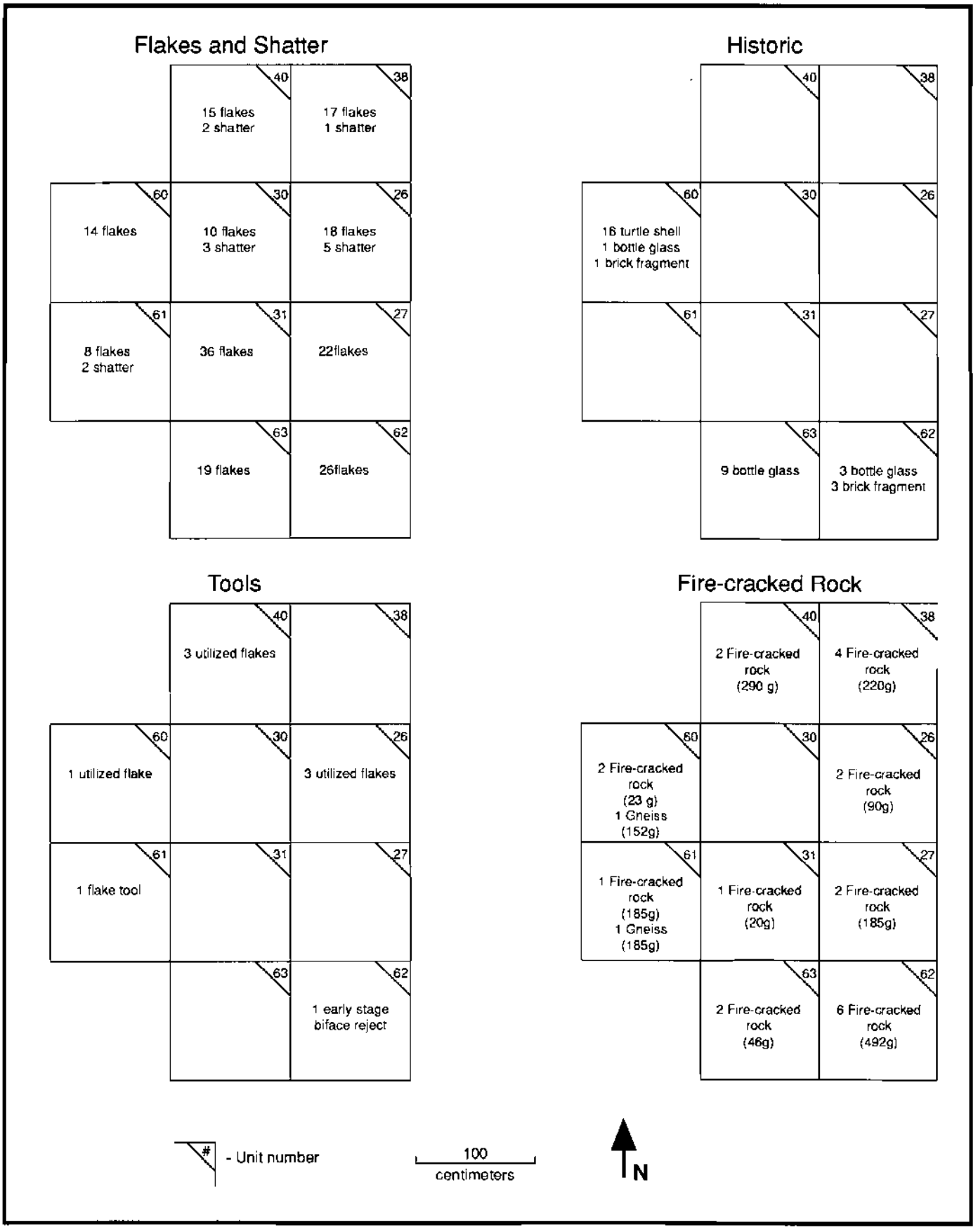
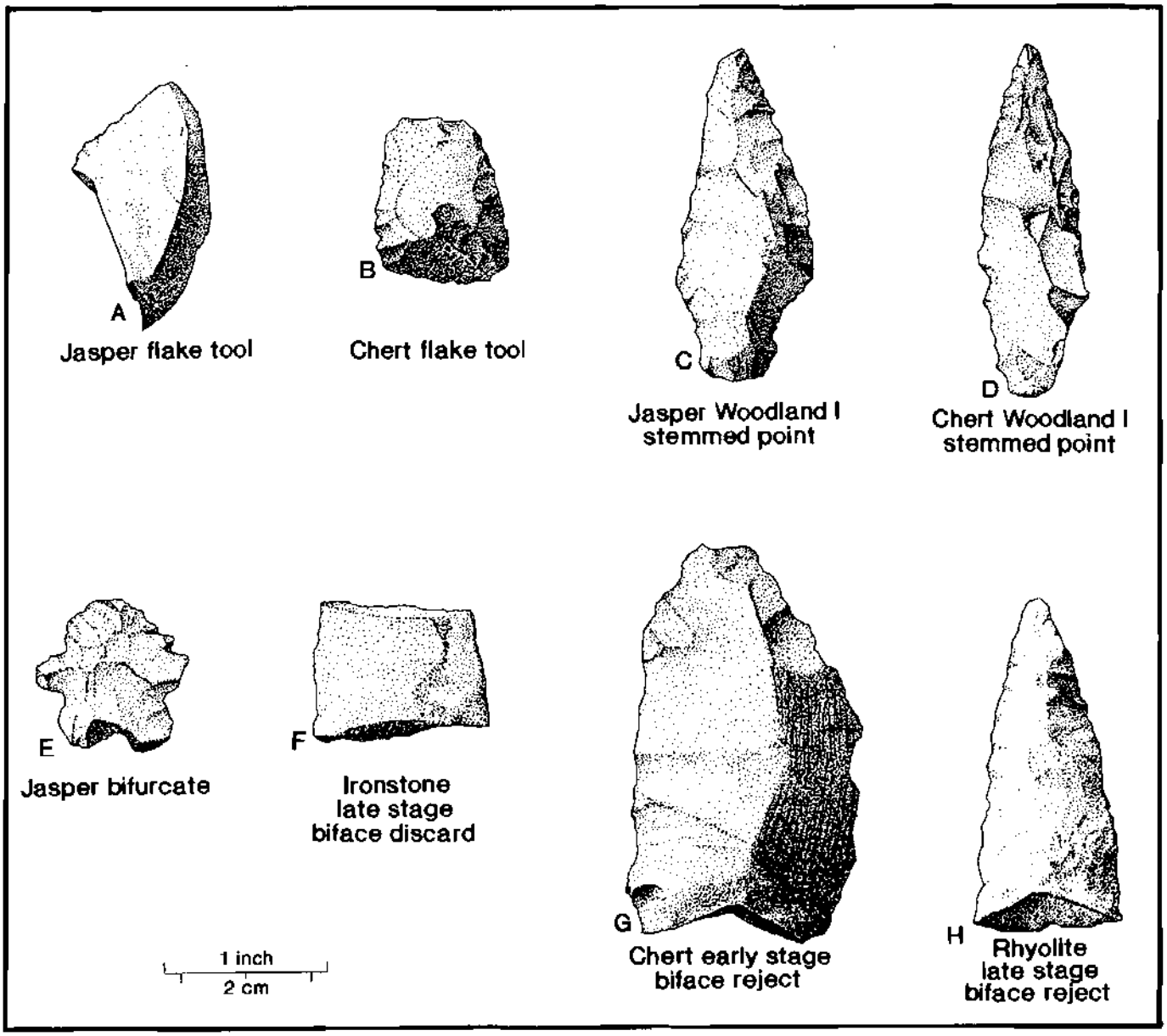


FIGURE 27

Tools Recovered from Gabor Site Area B

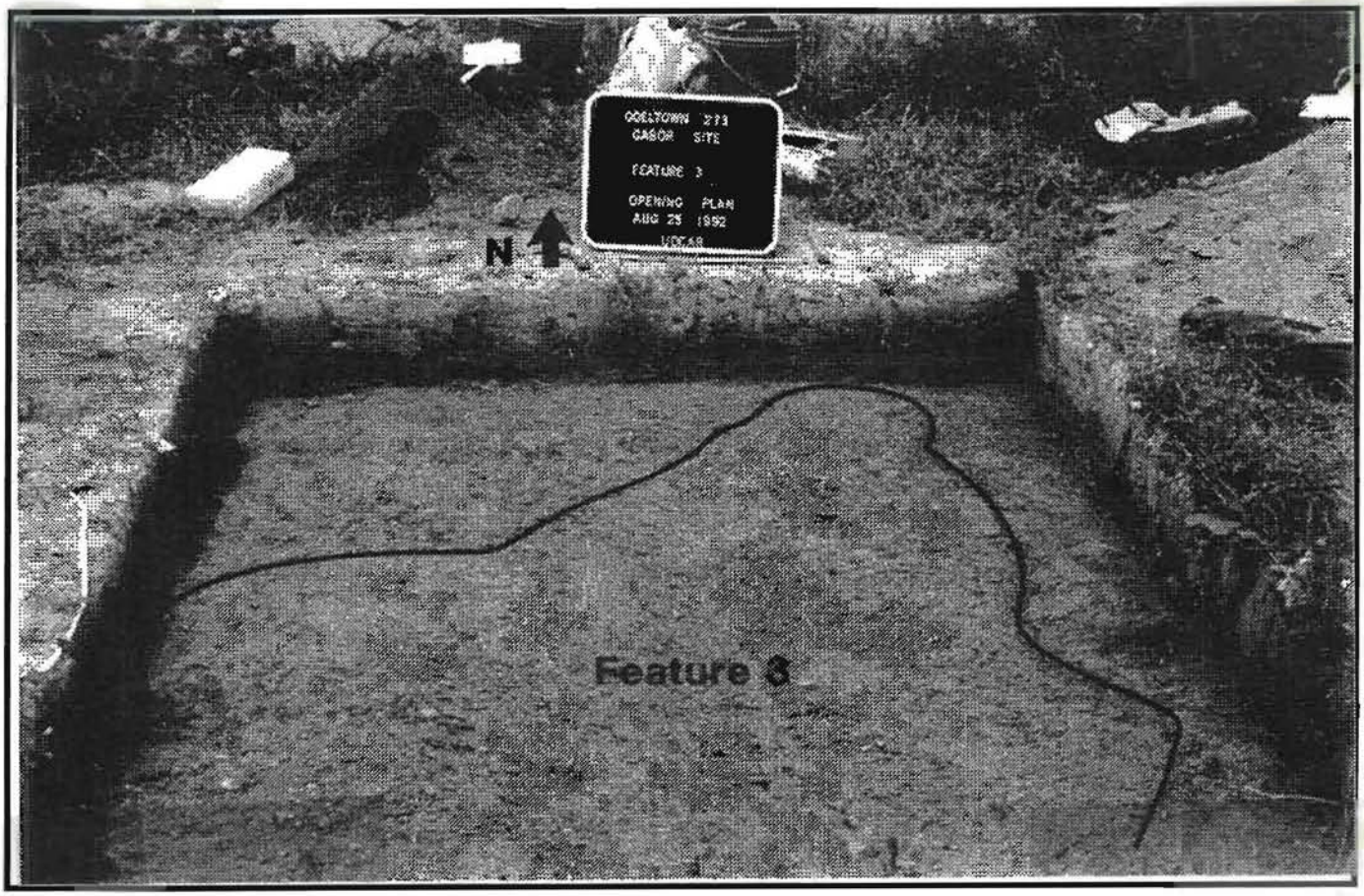


the Gabor Site Area B were contained within these units. Other artifacts recovered from the ten units included seven utilized flakes, a flake tool, a quartz early stage biface, 22 fire-cracked rocks, and two fragments of gneiss (Figure 26). A concentration of flaking debris was identified in Units 27, 31, 62, and 63.

Of the 11 bifaces excavated from Area B, three are diagnostic. A jasper bifurcate associated with the middle Archaic Period (ca. 6500 B.C.) was recovered from the plow zone of a test pit within the wooded section of the site (Figure 27e) and it is heavily reused and resharpened. Two stemmed projectile points (Figure 27c and 27d) associated with the

PLATE 6

Gabor Site Area B, Opening Plan View of Feature 3



Woodland I Period (ca. 3000 B.C. - A.D. 1000) were recovered from the plow zone of two separate test units. Both stemmed points exhibited shapes characteristic of the Clyde Farm Complex and had been resharpened, then discarded. The chert stemmed point shows evidence that it was resharpened in the shaft (Figure 27d). The jasper stemmed point exhibited an impact fracture (Figure 27c). Reliance on local quartz, quartzite, and cryptocrystalline materials for biface tool manufacture is indicated by the presence of only one biface of non-local rhyolite in the entire Gabor lithic assemblage (Figure 27h; Table 2).

A total of 10 features were identified at the Gabor Site Area B (Table 3). Two cultural features (Features 5 and 6) were partially exposed, mapped, photographed, and left in situ. Features 4, 7, and 9 were determined to be non-cultural upon excavation. A yellow/brown-gray silty clay stain with carbon (Feature 3) was identified below the plow zone of Unit 26. Test Units 27, 30, 31, 38, and 40 were excavated to the south, west, and north of Unit 26 to expose the complete limits of Feature 3 (Plate 6).

TABLE 3

Summary of Gabor Site Area B Features

Feature Number	Provenience	Description	Interpretation
1	Test Unit 9	oval brown-gray loam with gravel and carbon 30 cm x 25 cm x 42 cm deep; top of feature observed 10 cm below plow zone	post hole no cultural material
2	Test Unit 14	oval brown-gray loam 22 cm x 25 cm x 45 cm deep; top of feature observed below plow zone	post no cultural material
3	Test Units 26, 27, 30, 31, 38, 40	oval/kidney yellow/brown-gray silty clay with carbon; 3.7 m x 1.6 m x 50 cm deep; feature observed below plow zone	pit house
4	Test Unit 41	circular dark brown loam 20 cm diameter x 35 cm deep tunnel offshoot	rodent no cultural material
5	Test Units 34, 35	linear yellow-brown silty clay with carbon 1.6 m x 60 cm x 25 cm deep; not excavated	same feature soil and depth as Feature 3; possible prehistoric pit house
6	Test Units 49, 53, 54	irregular yellow-brown clay loam 2 m x 50 cm x 30 cm deep; only partially exposed-complete feature limits not totally defined	possible prehistoric pit house
7	Test Unit 26	circular dark yellow-brown loam with carbon 25 cm diameter x 45 cm deep	rodent or root disturbance no cultural material
8	Test Units 62, 63	oval brown-gray silty loam with carbon 30 cm x 20 cm x 60 cm deep	prehistoric post associated with Feature 3 no cultural material
9	Test Units 51, 55	irregular brown-gray silty loam present below plow zone, but disappeared 5 cm into subsoil	non-cultural
10	Test Unit 62	circular brown-gray silty loam 15 cm diameter x 30 cm deep North half excavated	prehistoric post associated with Feature 3 no cultural material

Feature 3 was a roughly oval to kidney shaped yellow brown to gray soil stain measuring 3.7 m x 1.6 m. The fill extended 0.5 m into the subsoil and was slightly deeper in the northern half (Figure 28; Plate 7). No diagnostic artifacts were recovered from the fill of Feature 3. A summary catalog of artifacts from Feature 3 is presented in Table 4. The southern portion of the feature contained a high concentration of lithic debris that apparently correlates to the high concentration of flakes contained in the plow zone directly above the feature (Figures 26 and 29).

TABLE 4

Gabor Site Area B (7NC-D-131B), Feature 3 Artifact Summary

	Quartz	Quartzite	Chert	Jasper	Total
Flake	126	4(1)	1	5	**136(1)**
Flake tool		1	--		1
Early stage biface reject	1		--		1
Total	**127**	**5(1)**	**1**	**5**	**138(1)**

	Total Count	%
Quartz	127	92.0
Quartzite	5(1)	3.6
Chert	1	0.8
Jasper	5	3.6
Total	**138(1)**	**100.0**

Gneiss 2 (1,099 g)
Fire-cracked rock 6 (1,512 g)

PLATE 7

Gabor Site Area B, Closing Plan View of Feature 3

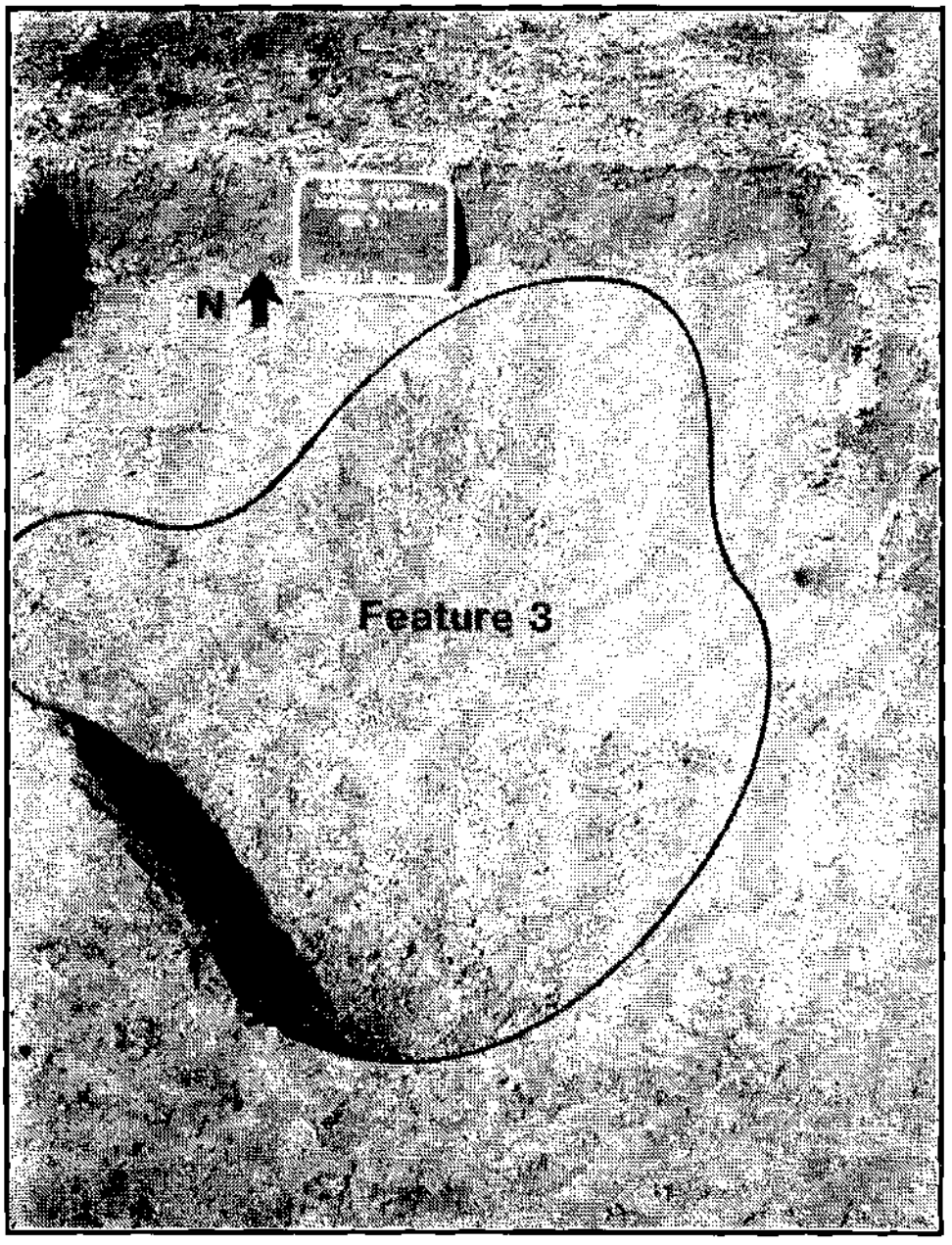


FIGURE 28

Plan Views and Profiles of Features 3, 7, 8, and 10

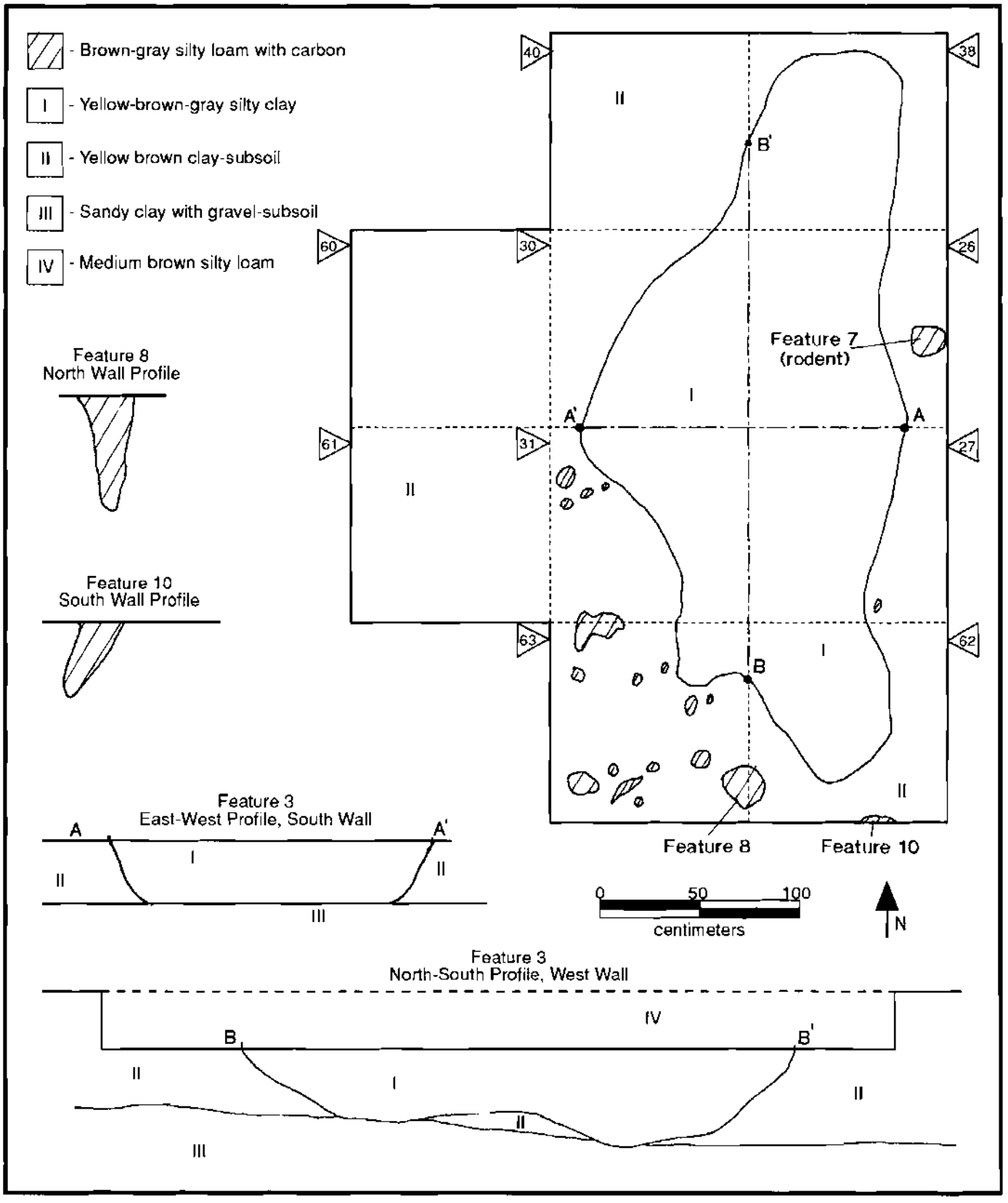


FIGURE 29

Feature 3 Artifact Distributions

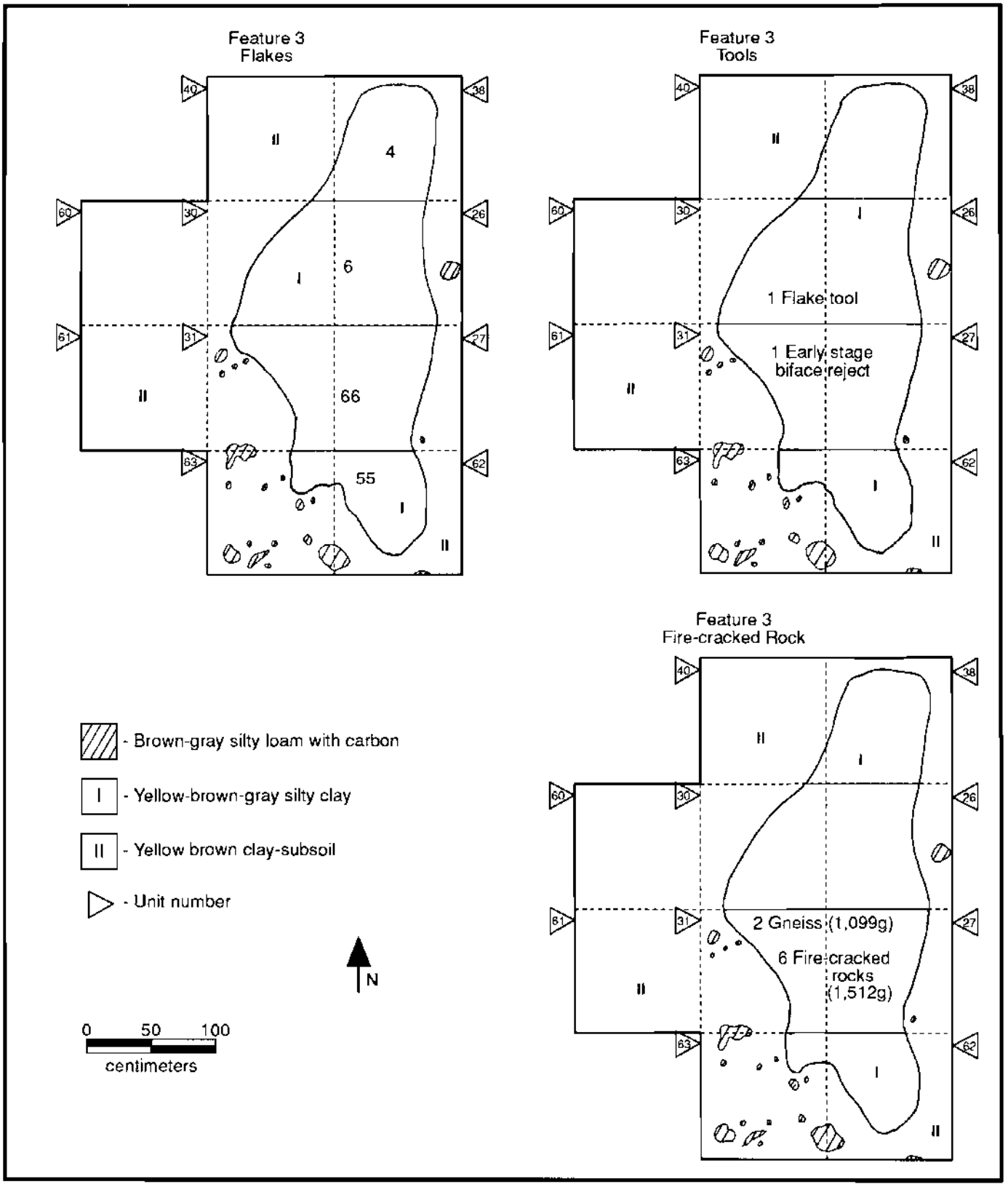
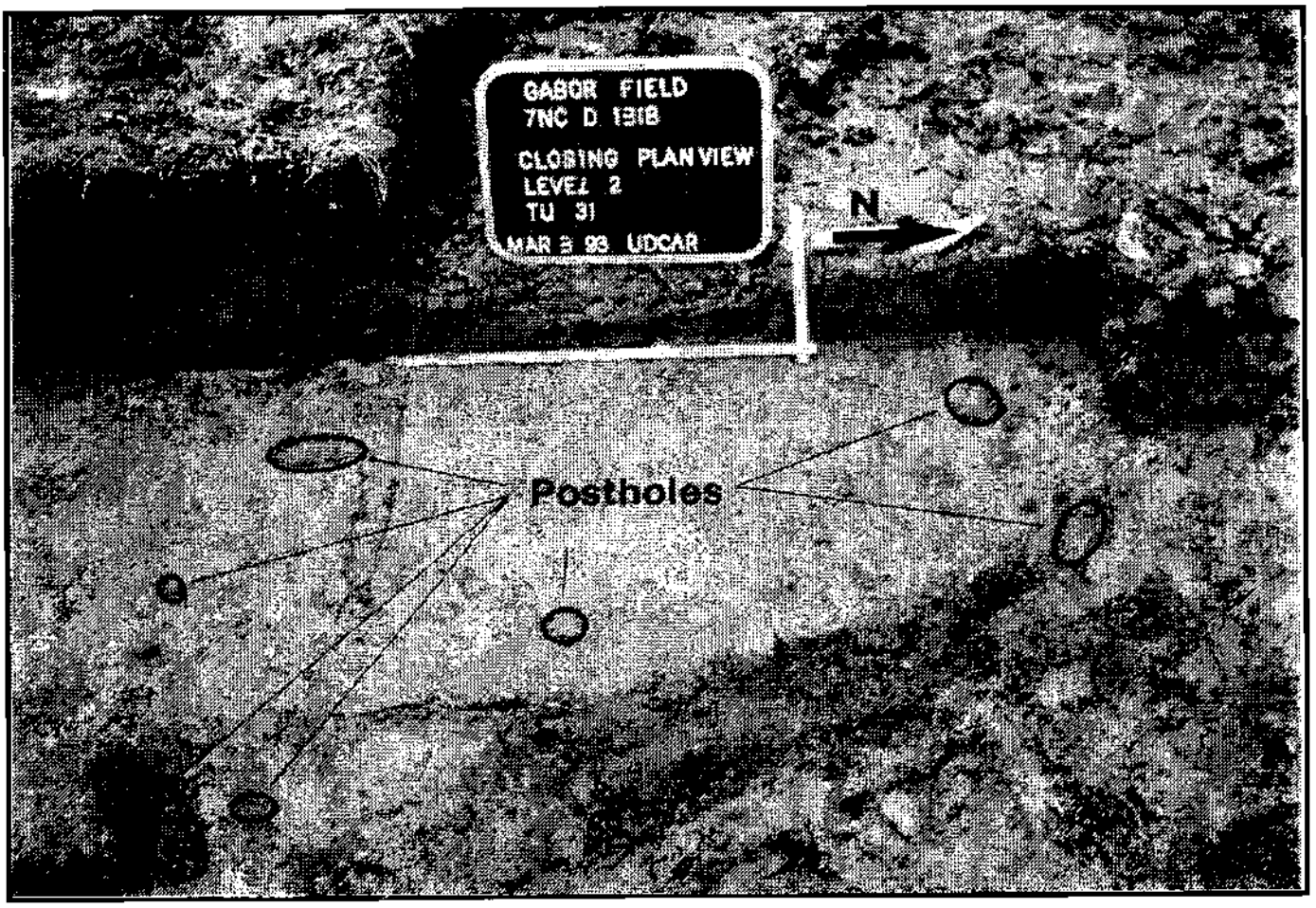


PLATE 8

Gabor Site Area B, Plan View of Posts Surrounding Feature 3

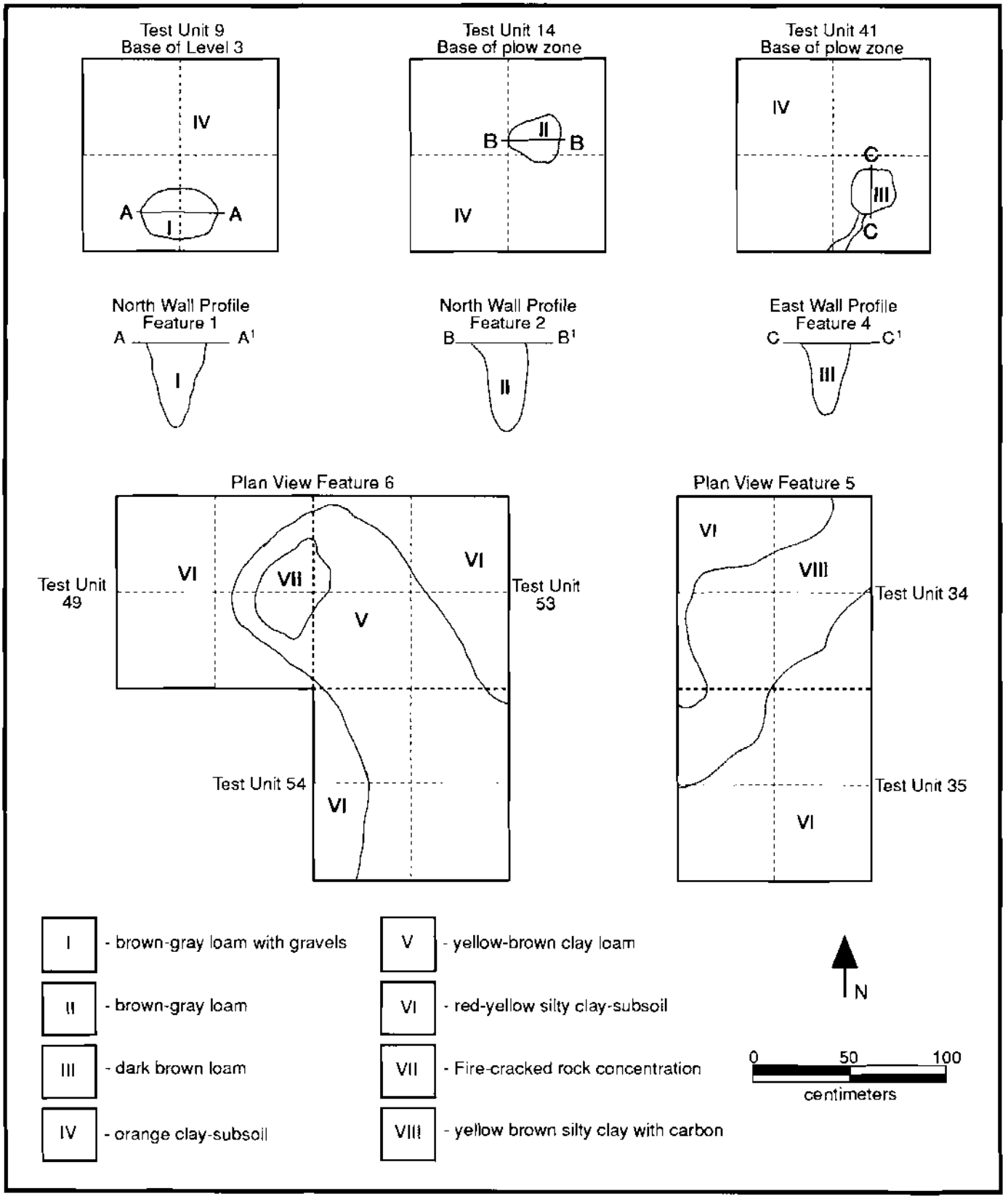


A series of small to medium circular brownish gray soil stains flecked with carbon were identified in the yellow brown subsoil on the south, west, and east sides of Feature 3 (Figure 28; Plate 8). Feature 7 was bisected and excavated, but was determined to be a rodent or root disturbance (Table 3). The tapered and angled profiles of Feature 8 and 10 suggests that the features may be the remains of small posts (Figure 28; Table 3). The positioning of the posts around Feature 3 suggests the pit feature may have been part of an enclosed house structure similar to the house feature identified at the Snapp Site (Custer and Silber 1994).

Feature 1 was located 20 cm below the base of the plow zone in Unit 9. The profile suggests that Feature 1 was the remains of a post (Figure 30). Feature 2, identified below the plow zone of Unit 14, was the remains of a post (Figure 30). Features 1 and 2 were spaced 10 m (33 feet) apart and may be part of a historical fenceline (Figure 30). However, Feature 1 was larger than Features 8 and 10, and its location 20 cm below the plow zone indicates that it may be a prehistoric post (Table 3).

FIGURE 30

Gabor Site Area B: Plan View of Features 1, 2, 4, 5, and 6 and Profiles of Features 1, 2, and 4



Feature 4, identified in Unit 41, was determined to be a rodent disturbance (Figure 30; Table 3).

Features 5 and 6 were cultural features that were partially exposed and mapped, but were not excavated. Feature 5 was a linear yellow brown stain located in Units 34 and 35 (Figures 23 and 30). The fill of the feature was very similar to Feature 3 fill, but was only 25 cm deep, based on auger probing (Table 3). The plow zone above Feature 5 contained a large quantity of lithic debris (Figure 24). Feature 6, identified below the plow zone of Units 49, 53, and 54, was an irregular shaped yellow brown stain that contained a concentration of fire-cracked rock in the northwest portion of the feature (Figure 30). Feature soil consisted of a yellow brown clay loam and extended 30 cm into the subsoil (Table 3). Although the true function of Features 5 and 6 cannot be determined at present, the similarity of the shape, size, depth, and feature fill of these features to Feature 3 implies they may also be house pit features.

Feature 3 is similar in size and configuration to semi-subterranean pit houses excavated at two nearby sites; Delaware Park (Thomas 1981) and Clyde Farm (Custer, Watson, and De Santis 1987). Thomas (1981) also identified interior and exterior post molds associated with pit house features. Other contemporaneous sites in Delaware with pit houses and associated post features include the Snapp Site (Custer and Silber 1994) and the Leipsic Site (Custer, Riley, and Mellin 1994). Recent investigations of the Snapp Site have also identified a "Type 6" feature that may have served as living quarters or sweat lodges (Custer and Silber 1994). The size and configurations of Features 3, 5, and 6 at the Gabor Site Area B are very reminiscent of the Snapp Site Type 6 features. In sum, the similarity of the excavated pit feature (Feature 3) and the two unexcavated possible pit features (Feature 5 and 6) at the Gabor Site Area B with other excavated house pit features of contemporaneous sites in Delaware suggests that the Gabor Site pit and post features may represent the remains of enclosed residential structures.

The absence of radiocarbon dates and the lack of ceramics at the Gabor Site forces reliance on diagnostic point types for determining the age of the site. The earliest diagnostic point type found at the Gabor Site was a bifurcate form which is assumed to date to ca. 6800-6200 B.C. on the Delmarva Peninsula (Custer 1989). The stemmed points can provide only a general period of occupation between 3000 B.C. to A.D. 1000 (Custer 1989). In sum, at least two occupations are indicated by the span of time represented by the projectile points recovered from the Gabor Site. An Archaic Period component dating from the general time span of 6500 B.C. to 3000 B.C. is indicated by the presence of bifurcate points, and a Woodland I occupation dating from some time between 3000 B.C. to A.D. 1000 is indicated by the presence of stemmed points.

The Gabor Site Area B can be tentatively identified as a base camp from the Clyde Farm Complex of the Woodland I Period.

Studies of the early Woodland I Period have suggested that it was a time of pronounced change in many aspects of prehistoric lifeways, such as settlement patterns, subsistence activities, social organization, population growth, tool kits, and trade and exchange networks (Custer 1984b, 1989). The presence of pit features at the Gabor Site could allow the recovery of prehistoric food remains and other ecofacts that allow the study of subsistence patterns and resource availability. Information on prehistoric environments of the surrounding area and season of site occupation may also be obtained from floral and faunal material recovered from the features. The presence of a wide range of stone tool types at the site suggests a variety of activities. The comparison of tools recovered from the Gabor Site with both earlier and later sites in the area will provide an opportunity to study changes in prehistoric tool kits.

In sum, the Gabor Site Area B contains significant archaeological data and is eligible for listing on the National Register of Historic Places under Criterion D (Appendix III). The recommended mitigation alternative is preservation. However, if preservation is not possible, Phase III data recovery excavations are recommended for those areas to be impacted.

Proposed Birchwood Wetland Replacement Area (7NC-D-190)

Phase I. The proposed Birchwood Wetland Replacement Area was located south of the Route 4/273 juncture and 350 feet (106 m) east of Salem Church Road (Figure 12). The project area was a 15 acre woodland with one to three percent slopes. A 1954 aerial photograph (Plate 2) identified a cleared field in the southern portion of the project area. Archival and background research revealed no known sites or historic resources within the project area and the area is located within a low probability zone for prehistoric sites (Coleman, Hoseth, and Custer (1987:45). Three prehistoric sites, Dairy Queen (7NC-D-129), Ogle Prehistoric (7NC-D-69), and Norman Tyndall (7NC-D-132) were located within 600 feet (181 m) of the project area.

Phase I testing consisted of the excavation of 57 shovel test pits. No pedestrian survey was conducted due to heavy plant growth and foliage cover. The project area also had large amounts of scattered modern surface debris. Six loci (A-F), determined by topography, were tested within the project area (Figure 31).

Phase I testing in Loci B and C identified one area of high artifact concentration and another area with low artifact concentration (Figure 31). A high concentration of prehistoric artifacts was located in Locus C. Four shovel test pits excavated within Locus C contained five quartz flakes, one fire-cracked rock, a rhyolite flake tool, and a jasper biface (Figure 32). Two shovel test pits within Locus B contained prehistoric artifacts (Figure 33). These shovel test pits were 50 m apart and were approximately 60 m northwest from the artifact bearing shovel test pits in Locus C (Figure 31). Two quartz flakes, one

TABLE 5

Birchwood Site (7NC-D-190), Total Prehistoric Artifact Summary Catalog

	Quartzite	Quartz	Chert	Jasper	Rhyolite
Flakes					
Soil A	1	38(1)	2	8	---
Soil B	1	26(6)	2(1)	1	1
Feature 1	---	16(2)	1	1	1
Total	**2**	**80(9)**	**5(1)**	**10**	**2**
Utilized flakes					
Soil A	---	1	2	---	1
Soil B	---	2(1)	---	---	---
Total	---	**3(1)**	**2**	---	**1**
Flake tools					
Soil A	---	---	1	---	1
Feature 1	---	1	---	---	---
Total	---	**1**	**1**	---	**1**
Late stage biface rejects					
Soil A	---	---	---	1	---
Total	---	---	---	**1**	---
Cores					
Soil A	---	2	---	---	---
Total	---	**2**	---	---	---
Soil A	1	41(1)	5	9	2
Soil B	1	28(7)	2(1)	1	1
Feature 1	---	17(2)	1	1	1
Total	**2**	**86(10)**	**8(1)**	**11**	**4**

Fire-cracked rock	
Soil A	18 (2,966 g)
Soil B	2 (276 g)
Feature 1	5 (1,207 g)
Total	**25 (4,449 g)**

	Total	%
Quartzite	2	1.8
Quartz	86(10)	77.5
Chert	8(1)	7.2
Jasper	11	9.9
Rhyolite	4	3.6
Total	**111(11)**	**100.0**

quartz core and one fire-cracked rock were recovered from this area. This area of low artifact concentration was probably associated with the higher artifact concentration in Locus C.

Phase II. Phase II excavations were undertaken at the proposed Birchwood Wetland Replacement Area to determine the extent and eligibility of the prehistoric site identified during the Phase I survey. A total of 15 1 x 1 m test units and seven shovel test pits were excavated to determine site limits, artifact distribution, and to identify if any intact cultural features were present below the plow zone. The units were excavated employing a 10 m interval grid system (Figure 34).

Soil stratification of the site consisted of three soil levels underneath a thin humus layer (Figure 35). Soil A was a dark brown silt loam plow zone that contained 64 percent of the recovered artifacts (Table 5). Thirty-five percent of the total artifacts were excavated from Soil B, a yellowish brown silty sand (Table 5). Soil C consisted of a brownish yellow sand with gravels and contained no artifacts.

FIGURE 35

Birchwood Site (7NC-D-190), Soil Profile of Test Unit S35W90

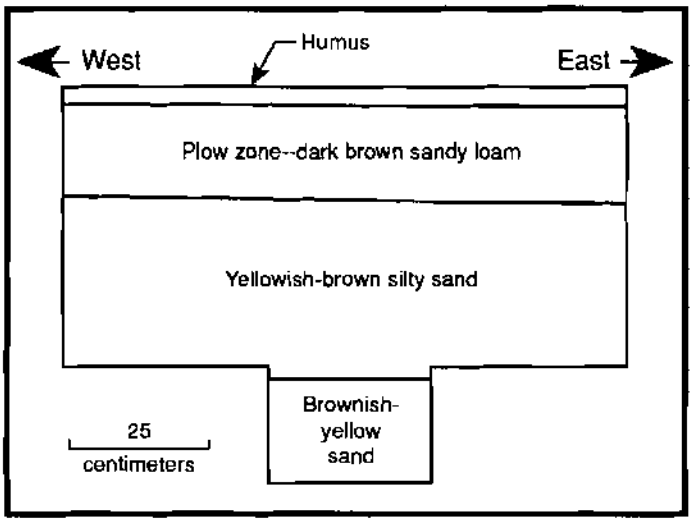


FIGURE 36

Stone Tools from the Birchwood Site (7NC-D-190)

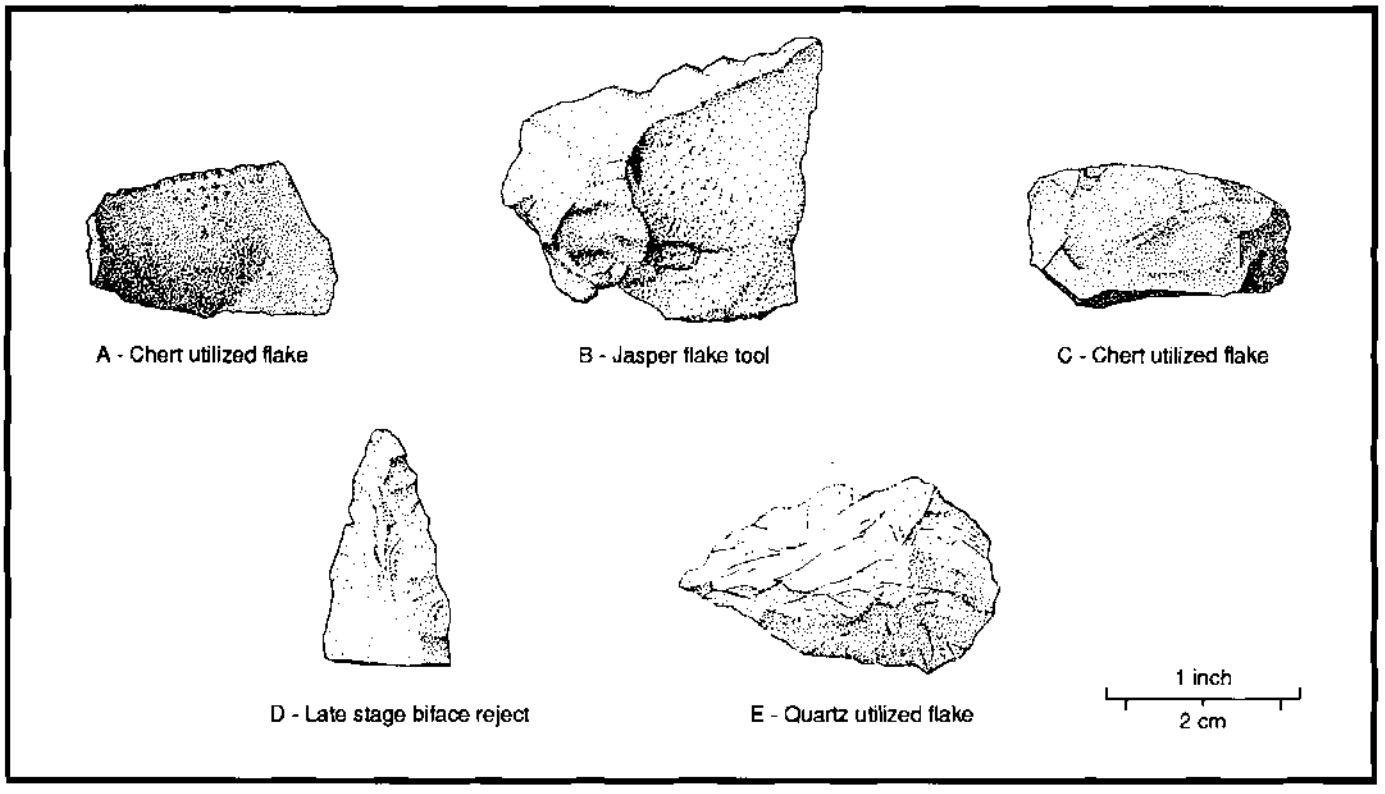
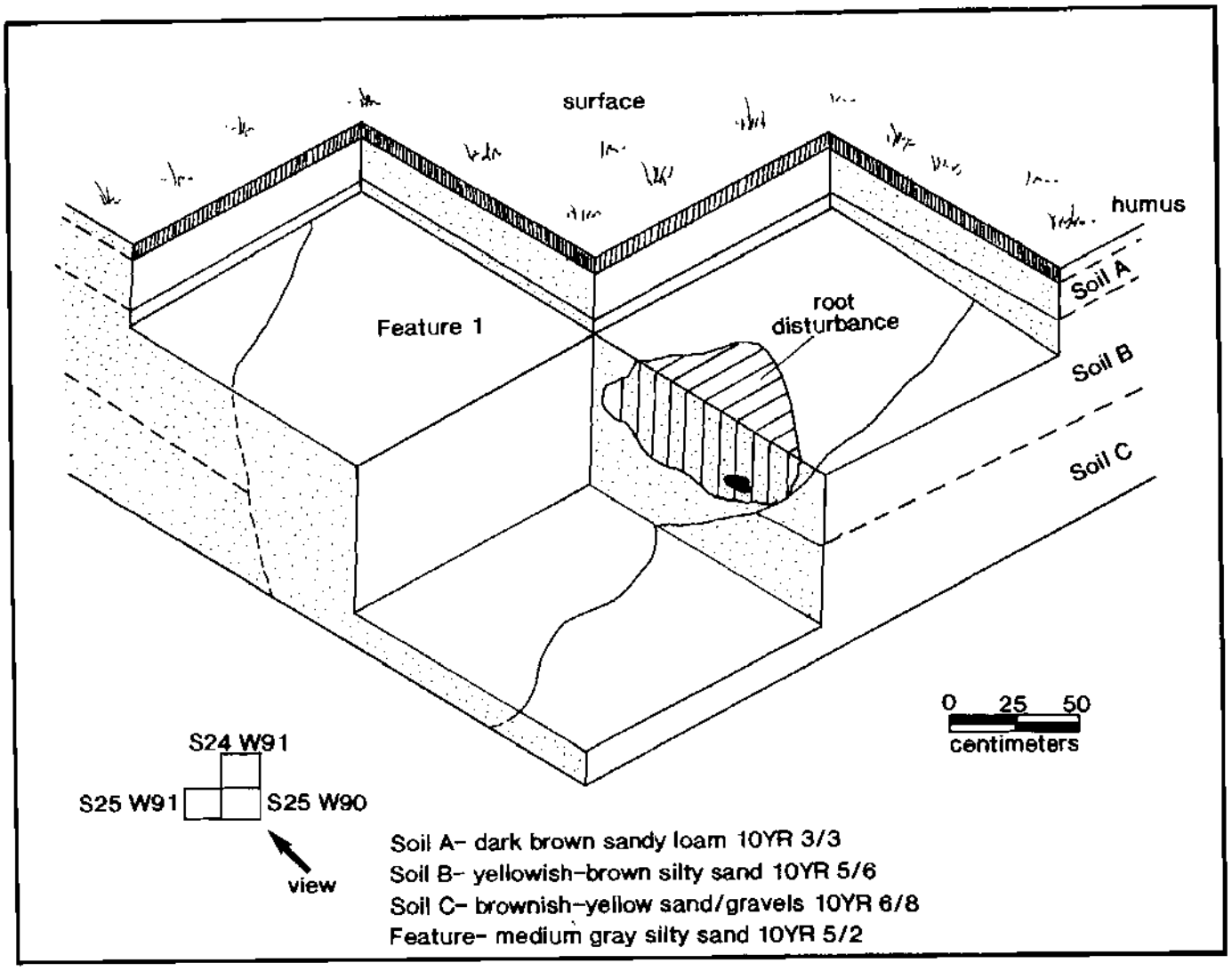


FIGURE 37

Birchwood Site (7NC-D-190), Profile and Plan View of Feature 1



The artifacts recovered consisted mostly of quartz flakes, utilized flakes, and flake tools (Figure 36). There were also quartzite, chert, jasper and rhyolite flakes, utilized flakes, flake tools, and fire-cracked rocks. No diagnostic artifacts were recovered during the Phase II excavations. One jasper late stage biface reject (Figure 36d) was recovered during the Phase I studies in Soil A of Shovel Test Pit C (Table 5).

One prehistoric feature was found and identified during the Phase II excavation. The feature was first located in test unit S25W90 (Figure 37). The feature was first observed 10 cm below the beginning of Soil B. Two units, one to the north and one to the west, were excavated to identify the size of the feature. The feature was difficult to define until the first 10 cm of Soil B had been removed. Test unit S25W90 was excavated to a depth of 80 cm. Artifacts recovered from the feature soil in this unit

PLATE 9

View of Proposed Route 141 Wetland Replacement Area

included 16 quartz flakes, one flake each of chert, jasper and rhyolite, a quartz flake tool, and five fire-cracked rocks.

Archaeological testing in this area was terminated when it was eliminated from consideration as a wetland replacement area by DelDOT. It is recommended that additional Phase II testing to determine site limits, integrity, and National Register eligibility be completed if this site is to be affected by future construction.

Proposed Route 141 Wetland Replacement Area

The proposed Route 141 wetland replacement area is located along the Interstate 295 and Route 141 intersection south of Newport, Delaware (Figure 13). Nonesuch Creek, a tributary of the Christiana River, borders the site on the north. Originally Nonesuch Creek ran through the northern part of the project area (Figure 13). Both Nonesuch Creek and the Christina River were rerouted during the construction of Interstate 95 in the mid-1960s. No physical evidence of the original creek bed remains in the project area. A six foot high mound of soil extends along the southern bank of present Nonesuch creek representing the debris from the channelization of the creek. The project area is mostly a low lying meadow that is seasonally wet (Plate 9). A small

woodlot in the southwest and the southern edge bordered by tidal marsh is located within the project area. In the last decade, a large drainage pond was constructed in the southeast corner of the project area. The 1970 Soil Survey of New Castle County describes the entire project area as Tidal Marsh (Mathews and Lavoie 1970).

A total of 55 shovel test pits and one test unit were excavated within the project area (Figure 38). The soil profiles consisted of multiple layers of clays, silty clays, and sandy clays of varying colors (Figure 39). Soil stratigraphy was irregular and inconsistent across the project area. Two small areas with an undisturbed sandy clay subsoil were identified.

The first area was located in the woodlot in the western part of the project area. Three shovel test pits contained historic artifacts (brick, glass, and shell). Because of the proximity of these shovel test pits to the soil embankment (within three meters) these artifacts were probably associated with the channelization of Nonesuch Creek.

The second area was located in the southeast part of the project area along the edge of the tidal marsh. Twelve shovel test pits and one test unit were excavated in this area (Figure 38). The soil stratigraphy consisted of a brownish yellow sandy clay level underneath a 10 cm level of dark brown clay loam. Two twentieth century ceramic sherds were recovered from Level 1. A jasper flake was recovered from Level 2 of Shovel Test Pit 19 (Figure 38). One fragment of redware was recovered from Level 1 of Test Unit 1.

Because of the disturbed nature of the project area and the low artifact distributions and densities, no further archaeological work is recommended for the proposed Route 141 Wetland Replacement Area.

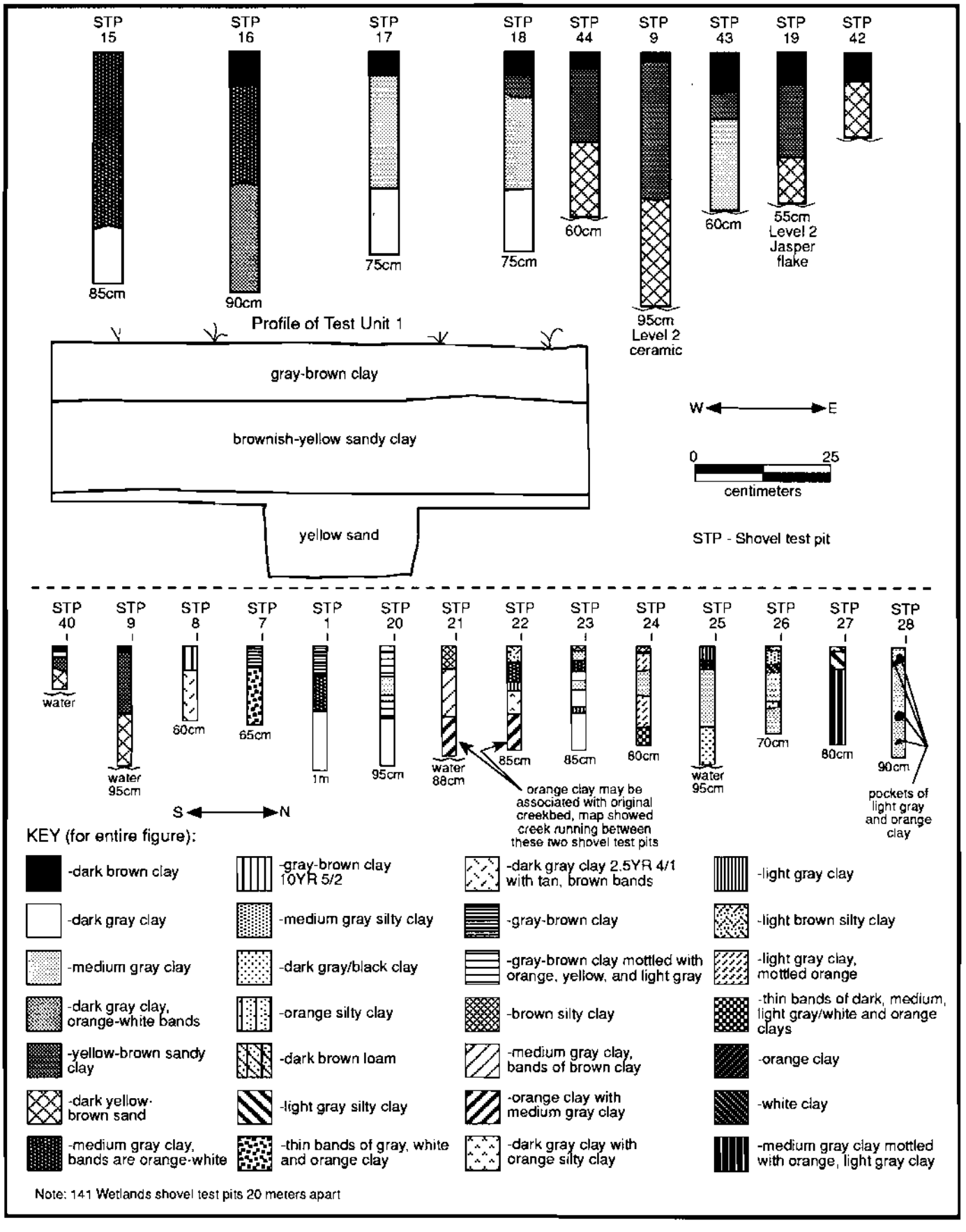
Proposed Kemeether Wetland Replacement Area

The proposed Kemeether Wetland Replacement Area is located along Salem Church Road just north of Old Baltimore Pike, New Castle County (Figure 14). The project area is a 10 acre plowed field divided by a channelized stream. The topography consists of 1-3 percent slopes with areas of very poorly drained soils and marsh (Plate 10). Background research revealed two prehistoric sites near the project area. The Stuart Forest Site (7NC-D-137), an Archaic\Woodland procurement site, was located 500 feet west of Salem Church Road. Barratts Run East (7NC-D-140), a Woodland procurement site, was located along Old Baltimore Pike to the east of the project area. Both sites were identified during the 1988 Old Baltimore Pike survey (Catts, Hodny, and Custer 1989). The 1953 U.S.G.S. topographical map depicted a race track in the northern portion of the project area.

A pedestrian survey was not possible because visibility in the no-till corn field was less than 20 percent. Phase I

FIGURE 39

Route 141 Wetland Replacement Area, Soil Profiles



Note: 141 Wetlands shovel test pits 20 meters apart

PLATE 10

View of Proposed Kemeether Wetland Replacement Area

excavations involved the subsurface testing of five areas (A-E) of higher elevation within the field (Figure 40). A total of 136 shovel test pits were excavated at 10 and 20 m intervals within the areas. Area A covered two rises in the southern portion of the project area. Twenty-nine shovel test pits were excavated in the area (Figure 40). Two shovel test pits recovered prehistoric artifacts. Shovel Test Pits A22 and A38 each contained one quartz flake. Four shovel test pits contained historic artifacts. Shovel Test Pits A3, A8, A34, and A52 contained three pieces of bottle glass and one sherd of whiteware. Area B was a small rise beside Salem Church Road. Twenty-one shovel test pits were excavated in this area (Figure 40). One Shovel Test Pit, B15, contained one piece of quartz shatter. Three Shovel Test Pits, B1, B5, and B8, contained historic artifacts (two bottle and four window glass fragments and one cut nail).

Area C was located on the rise in the northwest portion of the project area. The area was crossed by a hedgerow on the east. A total of 40 shovel test pits were excavated in this area (Figure 40 and 41). Two shovel test pits (C24 and C30) contained prehistoric artifacts, a chert core and a jasper flake. Fourteen