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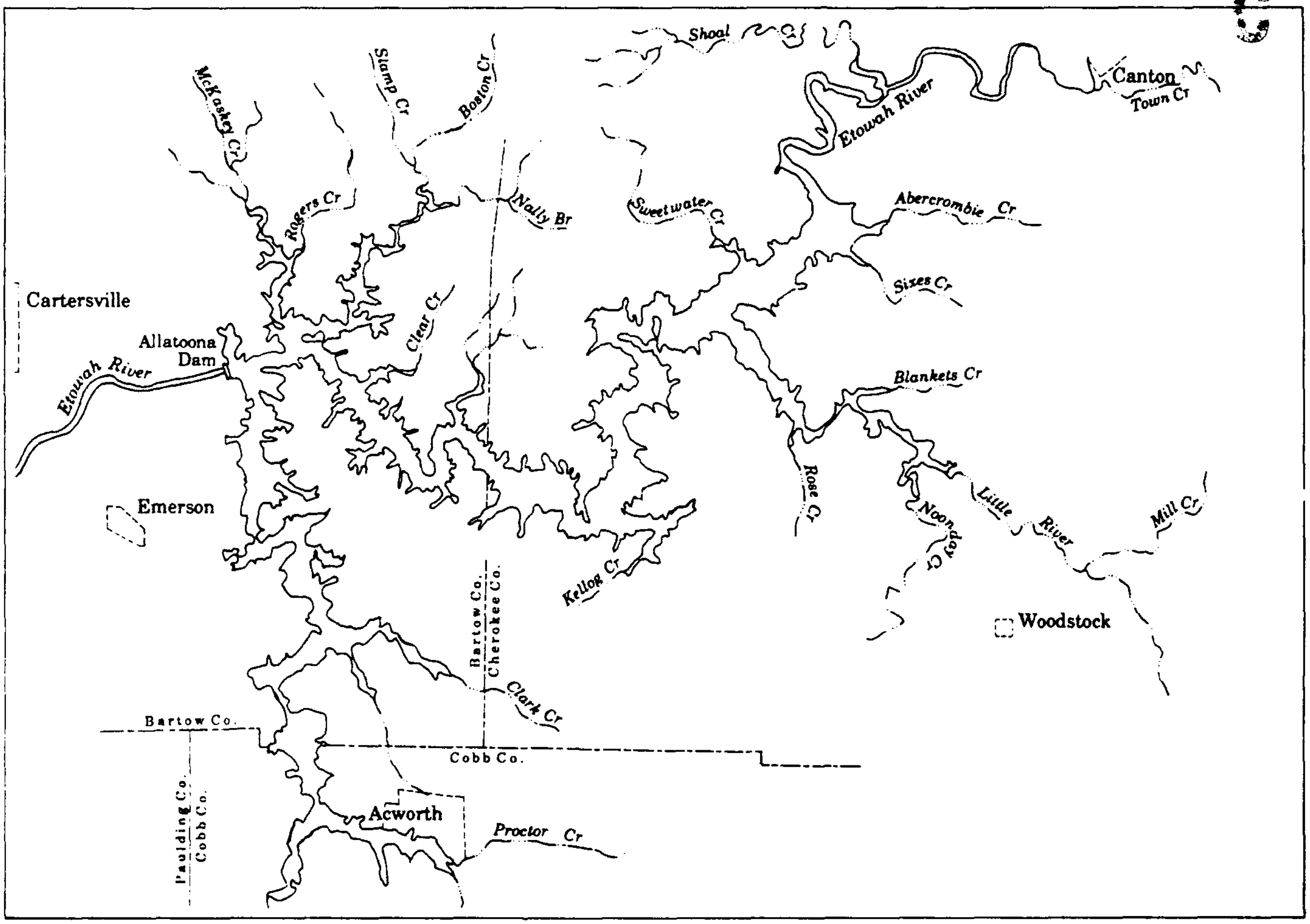
Archeological Test Excavations at
The Lake Acworth Site (9Co45) and The Butler Creek Site (9Co46)
Allatoona Lake, Cobb County, Georgia



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New South Associates
4889 Lewis Road
Stone Mountain, Georgia 30083

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This report adresses the results of archeological testing investigations at overlooking Butler Creek at the extreme southeastern end of the Lake Acworth subimpoundment. These sites were initially recorded by the Smithsonian Institution and National Park Service in the late 1940s and early 1950s, and were revisited by Southeastern Archaeological Services in a survey of property above Allatoona Lake floodpool in 1985 and 1986. At that time it was recommended that these sites were potentially eligible for the National Register of Historic

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Places, but required testing phase investigations before final determinations of eligibility could be made. Plans initiated by the Cobb County Parks and Recreation Department to build the Lake Acworth Colf Complex on public land including these sites led to the current testing project. Testing documented that both sites contained undisturbed deposits below the plowzone and a high degree of integrity. The occupation records and configurations further suggest that both can contribute to resolving many of the long-standing problems that exist in the Allatoona Lake cultural sequence. As a consequence, both sites are judged to be significant and appear to be eligible to the National Register of Historic Places. This determination was concurred by the Georgia State Historic Preservation Office. Site 9Co46 will be preserved as green space within the planned golf course development, however, a program of data recovery investigation will be necessary for 9Co45 in order to mitigate the adverse impact which will affect portions of that site.

COESAM/PDER-91/0001

ARCHEOLOGICAL TEST EXCAVATIONS AT THE LAKE ACWORTH (9Co45) AND BUTLER CREEK (9Co46) SITES: TWO PREHISTORIC SETTLEMENTS IN THE PIEDMONT UPLANDS, ALLATOONA LAKE, COBB COUNTY, GEORGIA

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New South Associates Technical Report 54

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ABSTRACT

Between July 23rd and August 16th, 1990, New South Associates, Inc. conducted archeological test excavations on two prehistoric sites (9Co45 and 9Co46) within the public use area of Allatoona Lake. The project was sponsored by the Mobile Corps of Engineers (Contract Number DACW01-90-C-0144). The sites (9Co45 and 9Co46) are situated on adjacent ridge noses overlooking Butler Creek at the extreme southeastern end of the sub-impoundment and on the opposite side of Lake Acworth from the town of Acworth. The sites were initially recorded as a consequence of archeological investigations conducted by the Smithsonian Institution and the National Park Service in the late 1940s and early 1950s (Caldwell 1950, 1957; Caldwell and McCann 1947; Miller n.d.). Southeastern Archeological Services, Inc. revisited the sites during a survey of the Allatoona project land holdings above the floodpool in 1985 and 1986 (Ledbetter et al. 1986). At that time it was recommended that the sites be further evaluated should future development plans involve the prospect of damaging impacts. Due to plans initiated by Cobb County Parks and Recreation Department to build the Lake Acworth Golf complex on a portion of the public use area of Allatoona Lake, adjacent to the Lake Acworth Sub-Impoundment, which may effect these archeological sites, a program of archeological test investigation was initiated. Testing documented that both sites contained undisturbed deposits below the plowzone and a high degree of integrity. The occupation records and configurations further suggest that both can contribute to resolving many of the long-standing problems that exist in Allatoona Lake cultural sequence. As a consequence, both sites are judged to be significant and appear to be eligible for inclusion on the National Register of Historic Places. Recent modifications to the plan of the golf course indicate that 9Co46 will be avoided, but that 9Co45 will be partially impacted by construction of an access road. It is recommended that a data recovery program be initiated on that portion of the site which will be directly impacted by construction. In addition, it is recommended that Cobb County develop a protection plan for the two sites to be enacted after construction of the golf course so that access can be denied to potential site vandals.

ACKNOWLEDGEMENTS

The final product of any archeological project is a group effort and the authors would like to take this opportunity to acknowledge the work and assistance of those individuals who contributed to the planning, implementation, interpretation, and, happily, the completion of this project. Above all, the guidance and encouragement of Ms. Dottie Gibbens of the Mobile Corps of Engineers is gratefully acknowledged. Ms. Gibbens' knowledge of Allatoona archeology and appreciation for the research potential of the sites reported herein greatly facilitated our ability to undertake this study. Also at the Corps Resource Managers Office at Allatoona Lake we would like to thank Mr. Carl Etheridge, Mr. Robert Gentry, and Mr. Ken Huddleston for their assistance and cooperation. Mr. Etheridge in particular is deserving of a considerable debt of gratitude on our behalf. Mr. Etheridge directed the clearing of sites 9Co45 and 9Co46, without which our archeological efforts would have been severely restricted. Mr. Etheridge's site clearing was exemplary, and provided an ideal working environment while maintaining the integrity of archeological resources on these sites. To all of these staff members of the Mobile Corps we would like to extend our appreciation and thanks.

In addition to these individuals, a number of other archeologists took time out from their busy schedules to provide counsel on various aspects of the project. We would like to thank in this regard, Dr. David Anderson of the Southeast Regional Office of the Park Service in Atlanta, Drs. David Hally and Mark Williams of the University of Georgia, and Mr. Chip Morgan of the Georgia Department of Natural Resources. The perspective these individuals provided on the ceramic sequence of the Allatoona Lake region and sundry other regions in the Southeast was invaluable. The principal investigator also owes a most heartfelt debt of gratitude to the field crew who included Scott Ashcraft, Marshal Brewer, Bill Duckworth, Janet Maione, and David Marsh. Julie Cantley's and Tracey Fedor's diligence and expertise in preparing the graphic illustrations for the report are gratefully appreciated. Mr. Richard Bryant produced the excellent artifact photographs for the report, and his efforts are greatly acknowledged and appreciated. Editorial review was provided by J. W. Joseph. A sincere note of gratitude is extended to Jack Raymer, who consented to actually write about the perplexing geology of the area. Any errors or misrepresentations contained in the body of this report remain the responsibility of the principal report authors.

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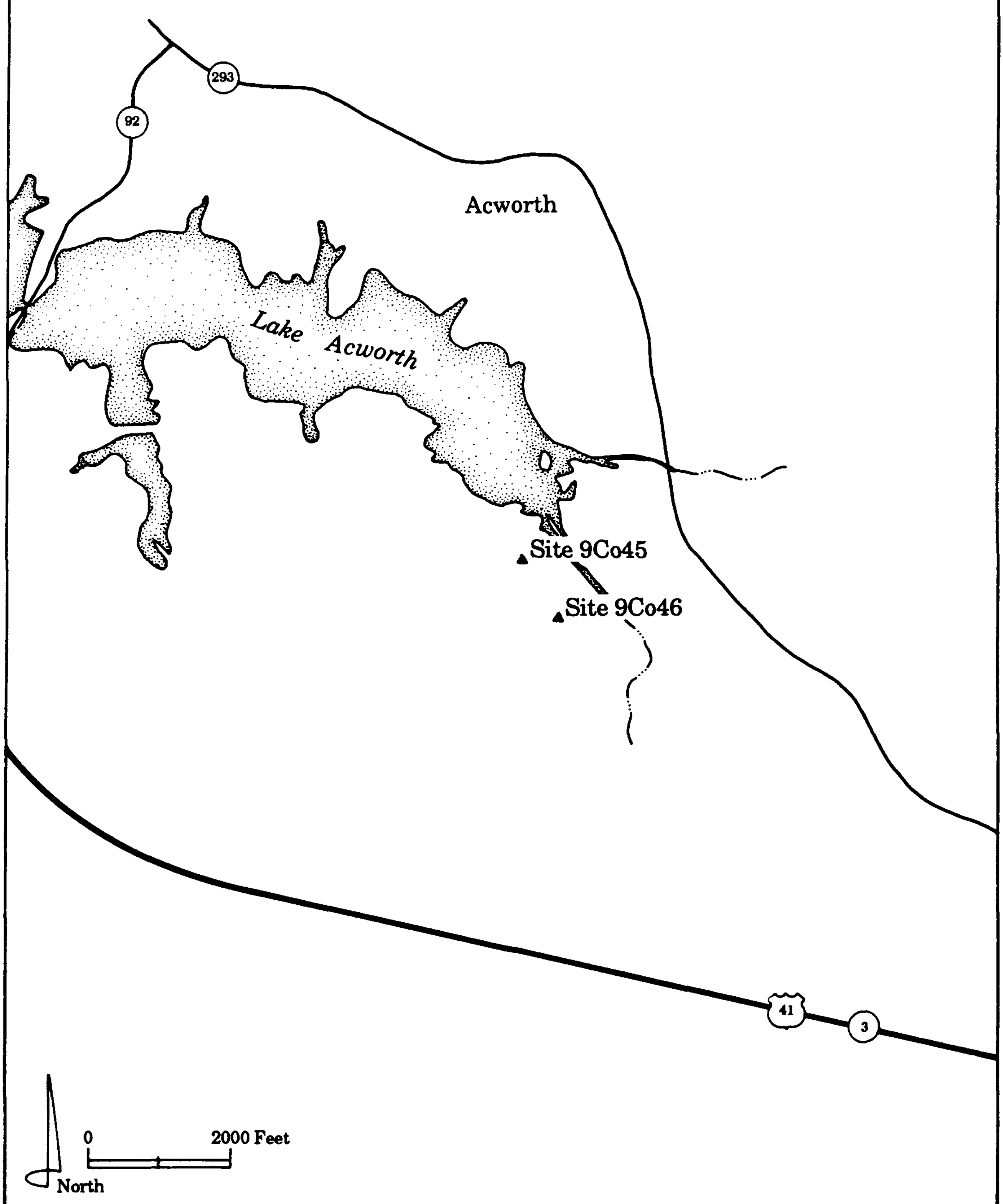
I. INTRODUCTION AND BACKGROUND

This report details the results of archeological test excavations conducted by New South Associates, Inc. at two prehistoric sites at the edge of Allatoona Lake near Cartersville, Georgia. The project was sponsored by the Mobile Corps of Engineers (Contract Number DACW01-90-C-0144), and was partially necessitated due to plans initiated by Cobb County Parks and Recreation Department to build the Lake Acworth Golf complex on a portion of the public use area of Allatoona Lake, adjacent to the Lake Acworth Sub-Impoundment. The sites (9Co45 and 9Co46) are situated on adjacent ridge noses overlooking Butler Creek at the extreme southern end of Allatoona Lake, on the opposite side of the Lake Acworth Sub-Impoundment from the town of Acworth (Figure 1). Both sites were initially recorded as a consequence of archeological investigations conducted by the Smithsonian Institution and the National Park Service in the late 1940s and early 1950s (Caldwell 1950, 1957; Caldwell and McCann 1947; Miller n.d.). Southeastern Archeological Services, Inc. revisited the sites during a survey of the Allatoona project land holdings above the floodpool in 1985 and 1986 (Ledbetter et al. 1986). At that time it was recommended that the sites be further evaluated should future development plans involve the prospect of damaging impacts, hence the impetus for the current project.

Field testing operations were conducted between July 23rd and August 16th, 1990. The field design involved a three staged strategy of investigation including: (1) low-impact soundings (i.e. shovel testing and tube augering), (2) test square excavations, and (3) machine stripping. This resulted in the excavation of 187 shovel tests, 2 limited tube augering grids, 4 test squares (2 X 2m), and a combined broadside stripping exposure of 164 m^2 dispersed between two separate blocks at 9Co45. A similar magnitude of effort was expended at 9Co46. Excavations here included 118 shovel tests, 5 test squares (2 X 2m), and a combined exposure of 157 m^2 of broadside stripping area dispersed between three separate blocks. John Cable served as Principal Investigator for the project and his vita is provided in Appendix I.

During the course of investigation the need arose to name these sites, both for ease of memory and discussion, and also because it became apparent that they were very special sites and deserved such commemoration. The results of testing revealed that the Butler Creek Site (9Co46) represented a small hamlet or farmstead of approximately 0.24 acres in core area and contained Cartersville/Swift Creek and Proctor Focus (Woodstock) components (ca. A.D. 700 to 1,000). Twenty-seven preserved features were identified in the excavations and included large pits, prepared clay hearths of prehistoric houses, a preserved subplowzone midden, and numerous post holes. In addition, abundant charcoal and macrobotanical remains were recovered from the features, which provided the opportunity to conduct subsistence analysis and to obtain a radiocarbon date. The Lake Acworth Site (9Co45) also represented a substantial occupation, but of later cultural groups of the Mississippian period (ca. A.D. 1100 to 1450). The core of the site was documented to extend over an area of 2.84 acres and other

Figure 1
Location Map for 9Co45 and 9Co46



evidence collected during excavation revealed that the Lake Acworth Site had been a small Mississippian village, perhaps containing a perimeter palisade wall. One-hundred and fifty (150) features were identified and they too consisted of large pits, domestic hearths, and architectural remains including numerous post holes and wall trench foundations for squarish shaped houses. Both sites were judged to contain significance and in the final chapter of this report a number of recommendations are offered to mitigate adverse effects entailed by the future construction of the golf course. Prior to discussing the structure of the report a brief overview of the natural environment and the pertinent prehistoric background of the region will be presented.

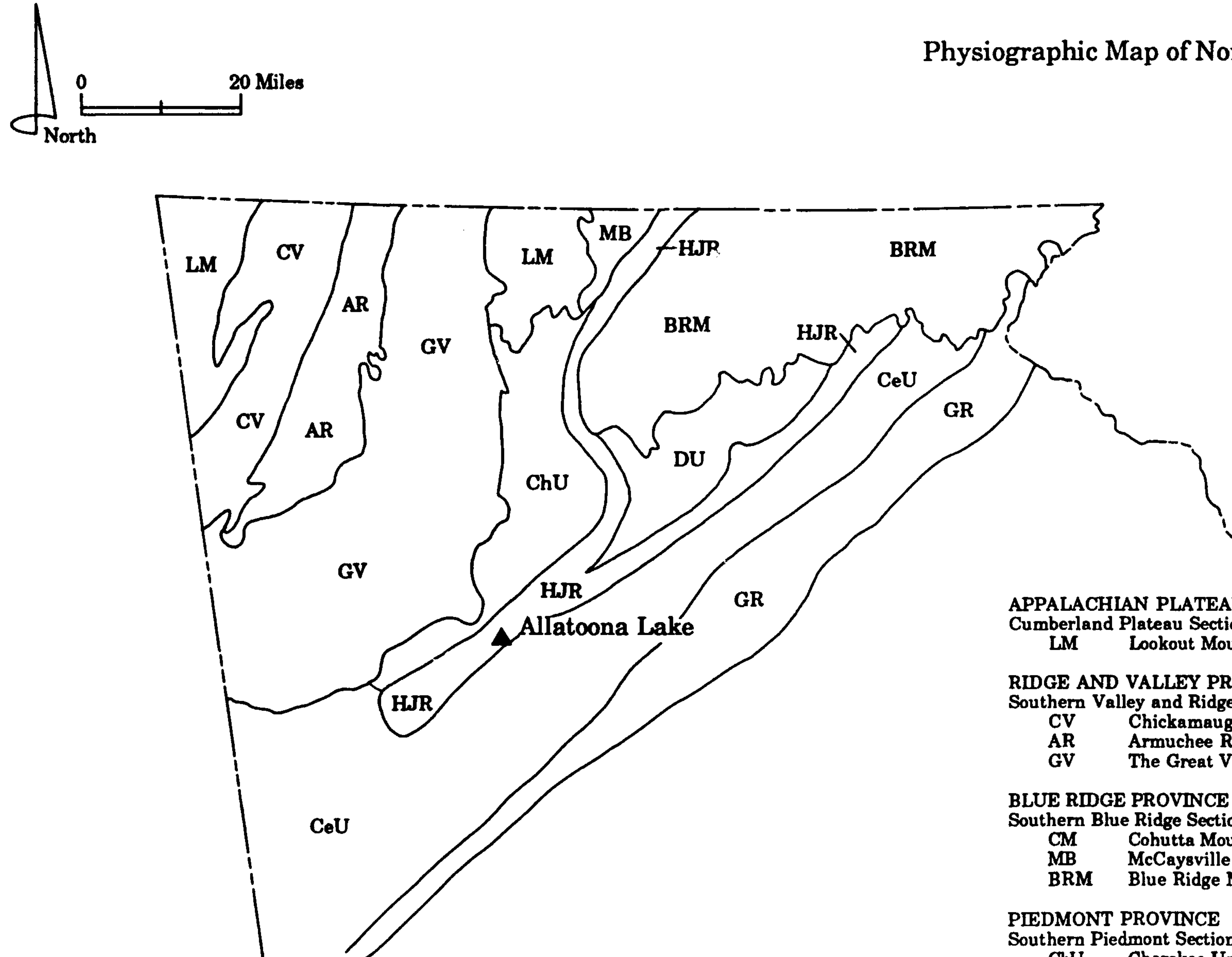
THE NATURAL ENVIRONMENT

The Allatoona Lake region is situated in the Upland subsection of the Georgia Piedmont Province (Clark and Zisa 1976), in a district known as the Hightower-Jasper Ridges (Figure 2). The Upland Piedmont represents a transitional environment between the lower, Midland Piedmont Subsection and the Ridge and Valley Province of extreme northwest Georgia. The Hightower and Jasper ridges converge near Canton, Georgia and the area south and west of this, which includes the Allatoona Lake region, decreases dramatically in both elevation and relief. The elevation of the Allatoona Lake region has a range of only about 200 ft. from east to west, the area around Acworth, Georgia representing the lowest elevations (ca. 860 to 940 ft. N.G.V.D.). Although the topography of the Hightower and Jasper ridges takes on a linear Ridge and Valley aspect in the north and east, these ridge systems decrease in density and relief to the south. A primary source of the region's distinctive character derives from the fact that it is located at the point where the Etowah River drops down into the Great Valley District of the Ridge and Valley Province (Figure 2). The overview to follow includes a section on geology which discusses not only the geologic structure of the region but also some of the sources of lithic raw materials that might have been used by prehistoric groups in the general area of the sites. This will be followed by a brief description of the vegetation and fauna of the region.

Geology

The geology of the region is fairly complex, not thoroughly mapped, and somewhat controversial (Figure 3). The following discussion is based on both literature sources and a limited amount of field work performed by Jack Raymer. The southern Allatoona region, where the sites are located, is situated on the Acworth Gneiss outcrop, in the Northern Piedmont Geologic Province (after McConnell and Adams 1984). The Acworth Gneiss is a multiphase, felsic, metaplutonic rock of granodioritic composition. One phase in the vicinity of the site is strongly foliated and contains considerable muscovite mica; it also may contain swarms of quartz veins. It weathers deeply to produce a mottled, reddish brown to mustard yellow micaceous silt that intermittently contains small lenses

Figure 2
Physiographic Map of Northwest Georgia



APPALACHIAN PLATEAU PROVINCE
Cumberland Plateau Section
LM Lookout Mountain District

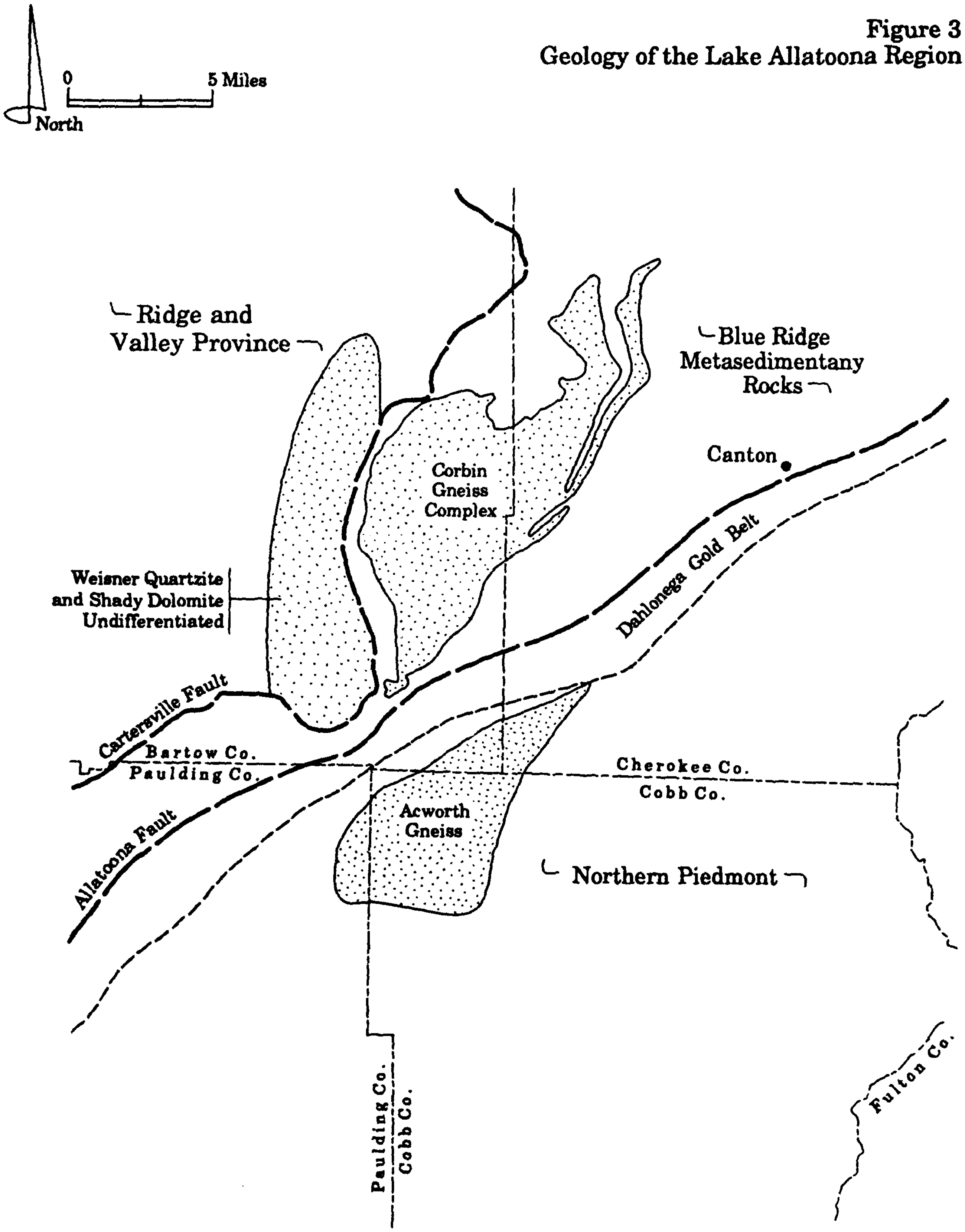
RIDGE AND VALLEY PROVINCE
Southern Valley and Ridge Section
CV Chickamauga Valley District
AR Armuchee Ridges District
GV The Great Valley District

BLUE RIDGE PROVINCE
Southern Blue Ridge Section
CM Cohutta Mountains District
MB McCaysville Basin District
BRM Blue Ridge Mountains District

PIEDMONT PROVINCE
Southern Piedmont Section
ChU Cherokee Upland District
DU Dahlonega Upland District
HJR Hightower-Jasper Ridges District
CeU Central Uplands District
GR Gainesville Ridges District

Source: Clark and Zisa 1976.

Figure 3
Geology of the Lake Allatoona Region



Source: Raymer n.d.

of partially weathered rock. The quartz veins produce a colluvial float of yellow-stained, dense, medium-crystalline to massive blocks of quartz that are typically tabular and up to one inch in thickness. In places where large numbers of closely spaced quartz veins are present, small drainages may be nearly covered by large, rounded, yellow quartz pebbles.

A second phase of the Acworth Gneiss was also observed near the sites. In contrast to the first, this phase contains considerably less muscovite, and is much less conspicuously foliated. It is characterized by large crystals (porphyroblasts) of plagioclase in a matrix of medium crystalline quartz and biotite. This phase weathers less deeply and tends to produce hill-top exposures of spheroidally weathered boulders. No quartz veins were observed in association with this phase.

The rocks of the Northern Piedmont are medium grade (amphibolite facies) gneisses, schists, and to a lesser extent, amphibolites and quartzites. They were originally formed in the early Paleozoic Era (550-400 million years ago), most likely as part of an oceanic volcanic province some distance off the coast of North America. During the Late Paleozoic Alleghenian Orogeny (350-250 million years ago) they were plastered against the continent, severely deformed, metamorphosed to their present state, and thrust into their present position above the rocks of the Blue Ridge Geologic Province. The Allatoona Fault, which is approximately 8 km northwest of the site, marks this overthrust contact in the Allatoona Lake region.

In the Allatoona Lake area, the Blue Ridge Province consists of low grade (greenschist facies) metasedimentary rocks that overlie a high grade (retrograde granulite facies) gneiss. The metasedimentary rocks are latest, Precambrian to Cambrian in age (500-800 million years old) and consist mainly of phyllites, with some metasandstone and slate, and a little marble. They rest upon the middle Proterozoic (1000 million years old) Corbin Gneiss complex, which is dominated in the outcrop by a very distinctive lithology consisting of very large (2-8 centimeters) crystals of white, microcline feldspar in a matrix of finely crystalline quartz and muscovite. In contrast to the Northern Piedmont, the metasedimentary rocks appear to have been deposited along the continental margin of North America. During the Alleghenian Orogeny, they were metamorphosed, deformed, and thrust inland over the sedimentary rocks of the Ridge and Valley Province. The Cartersville (Great Smokey and Emerson) Fault, which lies about 10 km northwest of the site, marks this overthrust contact in the Allatoona Lake region.

The Ridge and Valley Province contains unmetamorphosed sedimentary rocks that were deposited in shallow continental seas and on the continental shelf of North America during the early and middle Paleozoic Era. Within 50 km of the site, they consist of a thick sandstone-shale sequence which contains the Shady Dolomite, followed by a thick limestone-dolomite sequence. During the Alleghenian Orogeny, they were internally deformed and overthrust, but were not metamorphosed.

The Allatoona Lake region contains a number of geologic resources that might have been significant to the prehistoric inhabitants: including tool-quality quartz, quartzite, and chert; ochre and umber; and massive graphite. The Dahlonega Gold Belt, which trends northeast-southwest along the northwestern limit of the Northern Piedmont, passes within 7 km of the site.

As previously mentioned, yellow, medium crystalline vein quartz occurs in abundance in the Acworth Gneiss within 2 km of the site. Large blocks of milky white, massive quartz ("bull quartz") occur in the Canton Schist, which is a unit of the Gold Belt and crops out 7 km from the site. Vitreous quartzite (translucent, microcrystalline) from the Weisner Quartzite of the Ridge and Valley Province occurs in a belt that runs 10-20 km from the site. The Knox Group (dolomite and limestone) which contains abundant chert resources and occupies much of northwest Georgia, begins to crop out significantly about 18 km from the site. Other sources of good-quality chert, vein quartz, and quartzite may occur near the site. Good possibilities include additional vein quartz in the Northern Piedmont, metasandstones and granofels pods in the Blue Ridge, and possible chert in the Shady Dolomite (early Cambrian) in the Ridge and Valley.

High quality ochre and umber deposits occur at the surface in the thick (>30m) residual soil that overlies the Shady Dolomite in the Ridge and Valley. These occur in a belt 10-20 km from the sites, and have been commercially mined for over 100 years. A small deposit of good quality graphite occurs at the surface about 9 km northwest of the site.

Vegetation and Fauna

The Butler Creek and Lake Acworth Sites are situated near the confluence of two upland creeks that are tributary to Allatoona Creek, Butler and Proctor Creeks (see Figure 1). The Etowah River is approximately 13.2 km north. By any classification this must be considered an interriverine Piedmont upland environment. The importance of such environments for prehistoric groups has been somewhat deemphasized because of the apparent mundane character of the archeology, but the rather substantial habitation remains unearthed at these two sites attests to the rich biotic potential of the area, not only as a source of wild resources, but also as an agricultural zone. The inhabitants of the Lake Acworth Site , it will be shown, depended heavily on corn agriculture, and apparently inhabited the area on a permanent basis.

The pre-European settlement vegetation of the uplands throughout the Piedmont of Georgia was dominated by oak-hickory climax forest. Wharton (1989:153) has described a relict or "near-original" forest in Elbert County, Georgia, that may serve as an accurate analog of the kind of associations that occurred in the vicinity of the sites in recent prehistoric times. This forest was dominated by large-winged elm and post-oaks and included sugar maple, white oak, black-oak, sweet gum, American elm, Oglethorpe oak, southern red oak, and shag bark hickory as co-dominants. Subcanopy tree species included mulberry, red bud, ironwood, and dogwood, while shrubs consisted of French mulberry and buckthorns. The precise composition of species and their relative abundance is a function of the particular chemical composition and drainage potential of the substrate and the amount of available moisture. Along bluffs and ravine slopes, where more mesic conditions obtain, species adapted to floodplain environments tend to increase in density such as beech, pignut and mockernut hickory, white oak, ash, tulip poplar, black gum, scarlet oak, and southern red oak (Wharton 1989:149).

The modern fauna of the Allatoona Lake region are included in Shelford's (1963:57) oak-hickory zone of the Southern Temperate Deciduous Forest biome. Fur-bearing mammalian dominants of this environment consist of the white-tailed deer, beaver, black bear, raccoon, gray squirrel, gray fox, opossum , skunk, bobcat , and the red wolf. Other important mammals include the cougar, cottontail rabbit , marsh rabbit, otter, muskrat, and numerous mice, rats, and shrews. Although their modern ranges do not extend into the Southeast, bison and wapiti are reported to have lived in this region as late as the eighteenth century (Bartram 1943; Hudson 1976; Lefler 1967; Logan 1859; Mills 1826; Penny 1950). The natural range of wapiti no doubt included the Appalachians and higher elevations of the Piedmont, but the provenance and ecology of the reported bison populations are not yet understood (see Goodyear et al. 1979:19-20; also Hargrove et al. n.d.a:2-12). Avian species of economic importance to early settlers and prehistoric groups include the wild turkey, quail, and the passenger pigeon. The latter is now extinct, but was reported in great numbers in Georgia and the Carolinas in the early eighteenth century (Bartram 1942; Bartram 1943; Lefler 1967). Ducks, geese, and other waterfowl are not abundant in the Piedmont due to the paucity of lakes and large ponds.

Prior to historic overexploitation and dam construction, the Etowah River and its tributaries probably supported a rich and diverse fish fauna of importance to prehistoric groups. Georgia lies within Rostlund's (1952:73-74) Atlantic Fish Province, a particularly rich aquatic resource zone containing both local riverine species and anadromous species. Common among the latter class of fish in the Neuse drainage system, as well as in adjacent Piedmont river systems, were the American shad and sturgeon. These species made annual migrations up the rivers of the Atlantic Slope into the Piedmont during the spring and early summer to spawn before returning to the ocean (Leggett 1973). The seasonal abundance of these species made them an important economic resource for both aboriginal groups and European settlers in early historic times (see Adair 1930; Hargrove et al. n.d. a: 2-15; Lefler 1967:217-218; Logan 1859).

With the exception of the aquatic and amphibious species whose ranges are necessarily limited by the distribution of streams, the original geographic ranges of the other animal species cross-cut the upland and bottomland divisions of the Allatoona Lake region. Shelford (1963:86-119) distinguishes a terrestrial biotic community associated with major river floodplains in the oak-hickory zone, but notes that the dominants are the same as those for the uplands and that the two divisions differ from one another only in terms of population densities. Floodplain or bottomland populations are generally more dense owing to the greater availability of both plant and animal food resources. Moore (1967), for instance, estimates that carrying capacity for white-tailed deer was on the order of three to four times greater in a bottomland environment in South Carolina than it was in the adjacent uplands. The ranges of some species, of course, like the black bear, otter, beaver, marsh rabbit, and cougar, were more exclusively tied to the bottomlands (Langley and Marter 1973:157), which provides some justification for distinguishing the biotic composition of furbearing terrestrial animals in the two divisions. Seasonal fluctuations in the population distributions of some species are also an important consideration in contrasting the two divisions. For instance, both white-tailed deer and turkey aggregated in the uplands during the fall to feed on acorn mast (Lay 1969:9; Runquist 1979:275). The fall, then, may have been a particularly abundant season for groups in the Allatoona Lake uplands region. In fact, the uplands may have actually presented a more favorable source of food during this season than the Etowah bottomlands.

PREHISTORIC BACKGROUND

The Allatoona Lake region has a rich and diverse history of archeological investigation, beginning with the Smithsonian mound explorations in and around Cartersville, Georgia in the 1890s (Thomas 1894). Without doubt, however, the region owes its greatest debt to Joseph Caldwell who conducted, in conjunction with Carl F. Miller (n.d.), extensive investigations into a number of sites in the impoundment zone of the lake in the 1940s and 1950s (Caldwell 1950, 1957). These investigations today form a lasting contribution to the archeology of northwest Georgia and to the archeology of the Eastern United States in general (Caldwell 1958). The cultural sequence that Caldwell (1957), and to a lesser degree Sears (1958) and Wauchope (1966), developed is illustrated in Figure 4 and a map of the diagnostic sites from which he constructed the sequence is presented in Figure 5. The sites that received the greatest attention included the Wilbanks Site (9Ck5), Chambers (9Ck23), Kellog (9Ck102), Woodstock Fort (9Ck104-F), the Guess Site (9Co60), Stamp Creek (9Br139), and Site 9Br141. An overview of the archeological record of these sites and the later prehistory of the Allatoona Lake region is presented below.

Woodland Period (1000 B.C.-A.D. 900)

Like the preceding Archaic Period, the Woodland has been subdivided into three temporal stages. The Early Woodland Period (3000-1500 B.P.) is identified primarily on the basis of Dunlap Fabric-marked ceramics which are tempered with sand or crushed stone (Ledbetter et al. 1986:IV-71), and the presence of Copena and Candy Creek triangular projectile points (Cambron and Hulse 1975; Kneberg 1956). Subsistence-settlement systems of Early Woodland peoples mirrored in many respects those of the preceding Late Archaic period. There is an increasing body of evidence for the Southeastern United States suggesting that

Figure 4
Allatoona Cultural Sequence

Period	Calendar Date	Culture	Phase
Protohistoric	AD 1600	Lamar	Brewster
Mississippian	AD 1400		Early Lamar
	AD1200	Savannah	Wilbanks Savannah
		Etowah	Later Etowah
	AD1000		Early Etowah
		Woodstock	Woodstock
			Proctor
Late Woodland	AD 800	Swift Creek Focus	Late Swift Creek
	AD 600		Early Swift Creek
Middle Woodland	AD 400	Cartersville Focus	Cartersville
	AD 200		
	AD 1		
	200 BC		
Early Woodland	400 BC	Post-Kellog Focus	Post-Kellog
	600 BC	Kellog Focus	Kellog
	800 BC		
	1000 BC		
Late Archaic		Stamp Creek Focus	

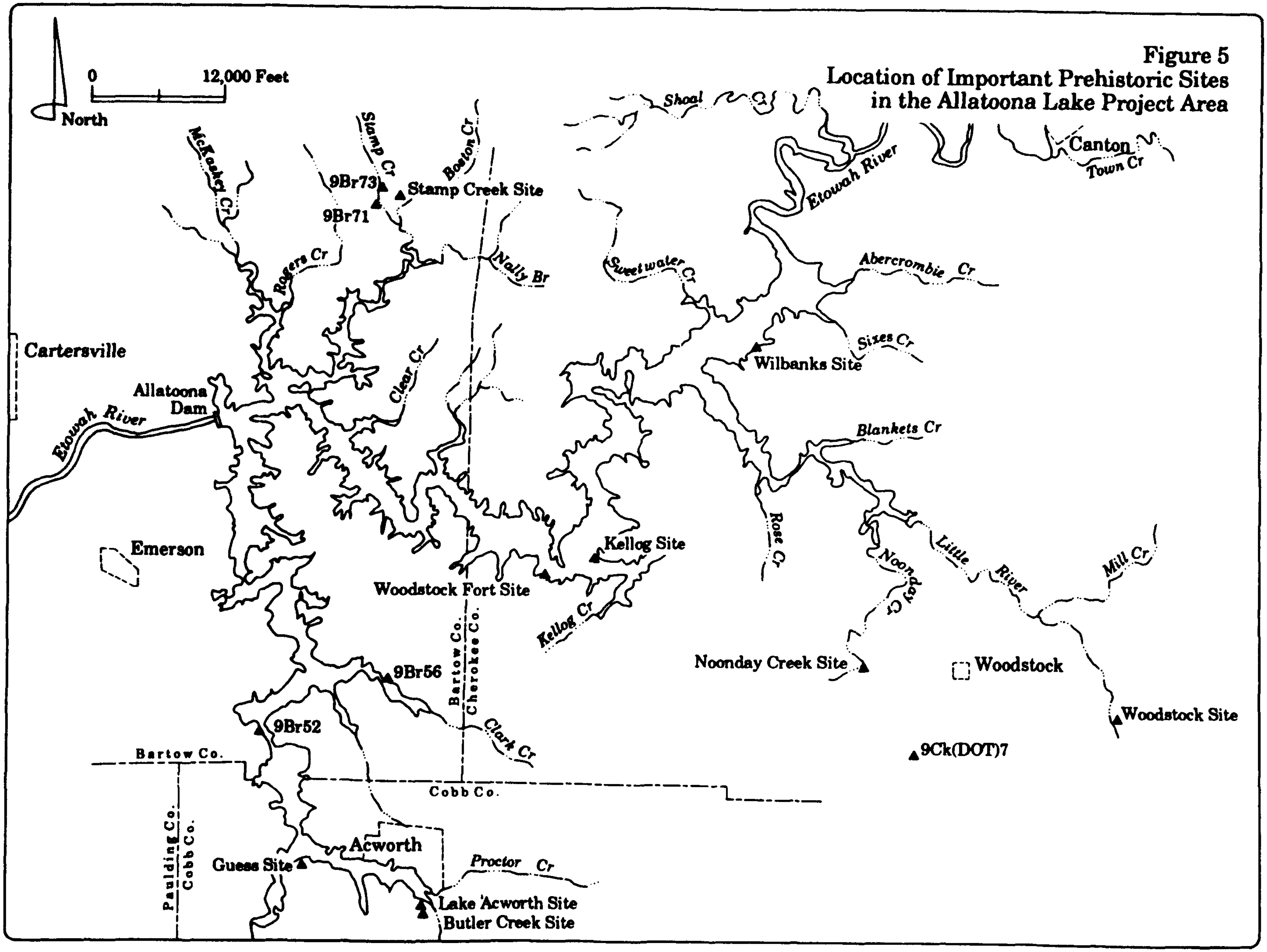


Figure 5
Location of Important Prehistoric Sites in the Allatoona Lake Project Area

Woodland and even later Mississippian period economies relied less on agricultural products than originally assumed (Ford 1985). To date, no real evidence for agriculture during Early Woodland times has been presented. However, a semi-sedentary adaptation, which an agricultural based economy would require, is well established during the Early Woodland Period (Caldwell 1957, Wauchope 1966, Blanton 1986). It is most probable that the Early Woodland inhabitants of north Georgia retained a hunting and gathering economy but experimented with various horticultural plant species.

The Middle Woodland Period (A.D. 200-600) is identified on the basis of Cartersville Check Stamped and Dunlap Fabric-marked pottery during the early part of this period (Caldwell 1957). The fabric-impressed pottery gradually disappears from the Middle Woodland assemblages and is replaced by the Cartersville Simple-stamped wares. Both the Cartersville Simple Stamped and Checked Stamped wares were used until A.D. 600. Hunting and gathering still played an important role in the daily economy of Middle Woodland groups, although the presence of large village sites along major rivers and streams suggest an increasing reliance on domesticated products. In the Allatoona Lake area, Middle Woodland sites have been discovered in both upland and floodplain settings. It was during this period that mortuary practices began to significantly change, with cremated and non-cremated burials being placed in earthen and stone mounds in some areas of northern Georgia (Jeffries 1976).

The Late Woodland Period (A.D. 600-900) is marked by the presence of Swift Creek and Napier Complicated Stamped pottery and small triangular and corner notched (Jack's Reef) projectile points. Swift Creek pottery is easily identified by the curvilinear stamped designs and has been dated in north Georgia from A.D. 500 to 750 (Rudolph 1986). Napier pottery, on the other hand, is identified by the use of rectilinear stamped designs and is believed to be slightly later in time, although the use of both Napier and Swift Creek ceramics may have overlapped in some regions (Rudolph 1986). In the Allatoona Lake area, very little information exists on Late Woodland occupations, except that sites which yielded Swift Creek sherds were always associated with Middle Woodland Cartersville Phase sites. Swift Creek sherds on the Allatoona Lake sites represented only a small percentage of the total sherd assemblage, which may suggest that these sherds were trade wares (Ledbetter et al 1986:IV-92).

The Mississippian Period (A.D. 900-1540)

The Mississippian Period has also been divided into three separate periods in the Allatoona Lake region. The Early Mississippian Period (A.D. 900-1200) can be identified by the presence Woodstock ceramics and small triangular projectile points. The excavations conducted before the inundation of Allatoona Lake provide most of the information we have concerning this time period. Excavations at Stamp Creek (9Br139) and Woodstock Fort (9Ck104-F) have yielded evidence of a diversified economy utilizing wild plant and animal food, fresh water mussels, and corn (Caldwell 1957).

Very little is known about the architecture or community plans of this period. However at Woodstock Fort, two parallel palisade walls and a ditch surrounded the village, which was estimated to be approximately 1 hectare in size (Ledbetter et al. 1986:IV-98). Other Woodstock sites in the lake vicinity appear to be smaller than the Woodstock Fort Site, however, larger Woodstock sites (1.6 hectares in size) have been reported along the Chattahoochee River approximately 50 kilometers southwest of Allatoona (Gresham 1986).

Following the Early Mississippian Woodstock Phase is the Etowah Culture, which marks the end of the Early Mississippian Period. Etowah Culture sites are identified on the basis of Etowah ceramics which are similar to the earlier Woodstock wares, but combine both rectilinear and curvilinear design motifs (Ledbetter et al. 1986:IV-102). Etowah sites have been divided into four categories based on geographical, temporal, and stylistic differences in assemblages (Hally and Rudolph 1986:37). These include the Etowah I, II, III, and IV Phases in the northern Georgia Piedmont. Etowah I and IV components are difficult to recognize because Etowah I ceramics tend to co-occur with earlier Woodstock wares while Etowah IV ceramics are often found with later Middle Mississippian Savannah wares (Ledbetter et al. 1986). Etowah II and Etowah III sites are differentiated by the proportional representation of design motifs in the assemblages. Etowah II sites exhibit almost a 50 percent representation of complicated stamped, 20 percent plain, 10 percent sixes plain, and 8 percent burnished plain assemblages while Etowah III sites exhibit 70 percent complicated stamped, 20 percent plain, 2 percent sixes plain, and 3 percent burnished plain assemblages (Hally and Rudolph 1986: 41).

Again, little is known about the architectural design of houses during the Etowah II Phase, however, excavations conducted at Stamp Creek, Guess, and Woodstock Fort uncovered evidence for Etowah III structures (Caldwell 1957, Miller n.d.). At these sites a number of square to rectangular wall trench structures were investigated. Also at Woodstock Fort, a rectangular and semi-subterranean structure was found. While relatively little is known about domestic structures during these times, much research has focused on the larger public architectural centers (mounds) which began to appear in the Etowah and Coosawattee River drainages during the Etowah III Phase.

After the close of the Early Mississippian Period, the Middle Mississippian Period began with the introduction of Savannah and Wilbanks ceramics. Some confusion exists concerning the association of these two pottery types and Hally and Rudolph (1986: 54) refer to Wilbanks ceramics as being only a regional variant of the Savannah Culture in the Etowah River Valley. The Savannah Culture includes four pottery types: Savannah Complicated Stamped, Etowah Complicated Stamped, Savannah Check Stamped, and Savannah Plain. The two complicated stamped types, as defined here, differ from each other primarily in stamping execution and stamp motifs. Etowah Complicated Stamped is characterized by concentric diamond motifs like the one bar and two bar diamond and by the herringbone motif; Savannah Complicated Stamped is characterized by the concentric circle, two bar concentric circle, and two bar cross concentric circle (Hally and Rudolph 1986:51).

It is interesting to note that during the recent survey conducted by Southeastern Archeological Services (SAS), a large percentage of Savannah sites were located in upland environments (Ledbetter et al. 1986:IV-112). This suggests that populations inhabiting the region during this period were not as confined to the floodplain settings as the preceding Woodstock and Etowah populations. Interpreting the Savannah settlement pattern is difficult, but it would appear that the environmental settings of these sites indicate a diverse adaptation based on the exploitation of both upland and bottomland resources.

The Late Mississippian Period in the project area is represented by Stamp Creek ceramics. Stamp Creek ceramics exhibit an extra clay strip applied to the lip of the vessels. The diagnostic design elements of this pottery type were punctations, nodes, or finger pinching around the vessel rim and poorly executed complicated stamping of the exterior surfaces. A wattle and daub house dating to this time period was excavated at Site 9Ck139 by Caldwell (1958), in addition to burials and refuse pits containing corn remains. Contrary to the preceding Savannah Culture, Stamp Creek sites appear to be orientated along the floodplains, following a settlement pattern similar to those established for the earlier Woodstock and Etowah Periods (Ledbetter et al. 1986:IV-116).

Towards the end of the Late Mississippian Period (approximately A.D. 1500-1600), another change in the pottery tradition occurred which is recognized archeologically as the Brewster Phase. During this Phase incising on bowls becomes more prevalent through time (Hally and Rudolph 1986):

> The incised lines began as bold and simple motifs. Through time, the lines got narrower and more numerous, creating more complex motifs on the vessels. Complicated-stamped pottery continued to be made, but the execution of the design was poor and motifs are not recognized easily. Rim strips were still added to jars, as in the preceding Stamp Creek phase, but during Brewster they become wider and more likely to be pinched than noded or punctated. (Ledbetter et al. 1986: IV-116)

Besides the noticeable changes in the pottery designs, excavations conducted at the Stamp Creek Site indicate a change in the domestic architecture as well. At this site, a Brewster Phase structure was excavated by Caldwell (1958: 50-51), who reported that houses were constructed with central roof supports with no daub applied to their exterior surfaces. Little information exists for reconstructing the Brewster Phase economy, however research suggests that hunting and gathering remained as an important element in the food procurement system (Rudolph 1985). Agricultural products such as corn, beans and squash are believed to have been grown as supplementary food items.

The last aboriginal occupation of the Allatoona Lake area was by the Historic Cherokees (A.D. 1800-1838). Sites dating to these occupations are identified by the presence of Galt ceramics in the assemblages. Galt ceramics include check stamped, complicated stamped, roughened, and plain varieties. Little is known about the origin of these ceramics except that they are similar to types found in eastern Tennessee on Overhill Cherokee sites. Usually, Galt ceramics are found in association with early European wares (i.e. pearlwares, creamwares, and whitewares), but it is difficult to say if these wares were used by the aboriginal populations themselves or by the early European settlers who spread into the area after the Indian removal.

II. INVESTIGATIONS AT 9Co46: THE BUTLER CREEK SITE

The Butler Creek Site (9Co46) was initially discovered and recorded by Joseph Caldwell (1957) during the flood pool survey of the Allatoona Lake in 1946 and 1947, conducted through the combined efforts of the Smithsonian Institution and the National Park Service. Only a small surface collection of non-diagnostic ceramic and lithic material was recovered at that time, and no further evaluative and definitional work was undertaken since the site rested well above the flood pool elevation. Southeastern Archeological Services revisited the site during the 1985-1986 intensive survey of the lands within the Allatoona Lake project area located at elevations above the maximum flood pool (Ledbetter et al. 1986:III-144). Shovel testing at that time revealed that the site had not sustained extensive erosion and that prehistoric features might be preserved below the rather deep plowzone. However, due to the thick undergrowth of brush and vines a complete evaluation of site significance could not be made at this time. Despite this obstacle, a small collection of prehistoric ceramics (n=11) was recovered from the site and indicated the presence of a Middle Woodland component. The intensive testing project undertaken by New South Associates in July and August of 1990 as part of the contract reported herein completes the history of investigation at the Butler Creek Site . The results of the current project indicate that the site contains three occupational components: a major Cartersville/Swift Creek occupation, and less extensive preceramic and Woodstock (Proctor Focus ?) occupations. The presence of architectural remains, food preparation or storage facilities, and a dense and diverse artifact assemblage further argue that the site was characterized by intensive habitation during at least part of its occupational history. The precise nature of this habitation (i.e. seasonal, temporary, permanent, etc.) cannot be determined from current evidence, but various perspectives on this issue will be presented below as the results of the investigation are considered. This discussion of 9Co46 will be divided into eight sections including: (1) the site setting, (2) testing methodology,(3) artifact density distributions and site boundary definition, (4) unit excavation descriptions, (5) feature descriptions, (6) artifact descriptions, (7) subsistence data and analysis, and (8) synthetic interpretations of site occupational chronology and settlement function.

SITE SETTING

The site is situated on the gentle toe slope of a ridge finger overlooking Butler Creek, approximately 365 meters (1,200 ft) west of the creek bed and ca. 1.2 km (4,000 ft) southeast of the confluence of this stream and Proctor Creek (see Figure 1). The gentle slope of the ridge toe suggests that it has been modified over a long period of time by planation from overbank flooding and that the topographic situation may be more properly referred to as a ridge terrace. At the time of the investigation the site was vegetated in sparsely distributed pine woods consisting of 30 to 40 year-old trees (Figure 6). The thick underbrush encountered in 1986 by

Figure 6
Butler Creek Site 9Co46, July 1990

Site 9Co46, looking southwest from road.

Southeastern Archeological Services, Inc. had been graciously, and intrepidly, removed by the Corps of Engineers-Mobile over an area measuring ca. 95 meters by 45 meters prior to fieldwork (Figure 7). Elevation within this area ranges from a maximum of slightly more than 272 meters N.G.V.D. (ca. 892 feet N.G.V.D.) at the apex of the toe to a minimum of 266.5 meters N.G.V.D. (ca. 874 feet N.G.V.D.) in the bed of a dirt road bordering the eastern perimeter of the site. The general slope of the land rises to the west until the top of a large ridge finger is reached, about 240 meters outside of the Corps of Engineers property line. The only observable artificial modification to the site appears to have been a small agricultural terrace located between the 271.5 and 271 meters contours (Figure 7).

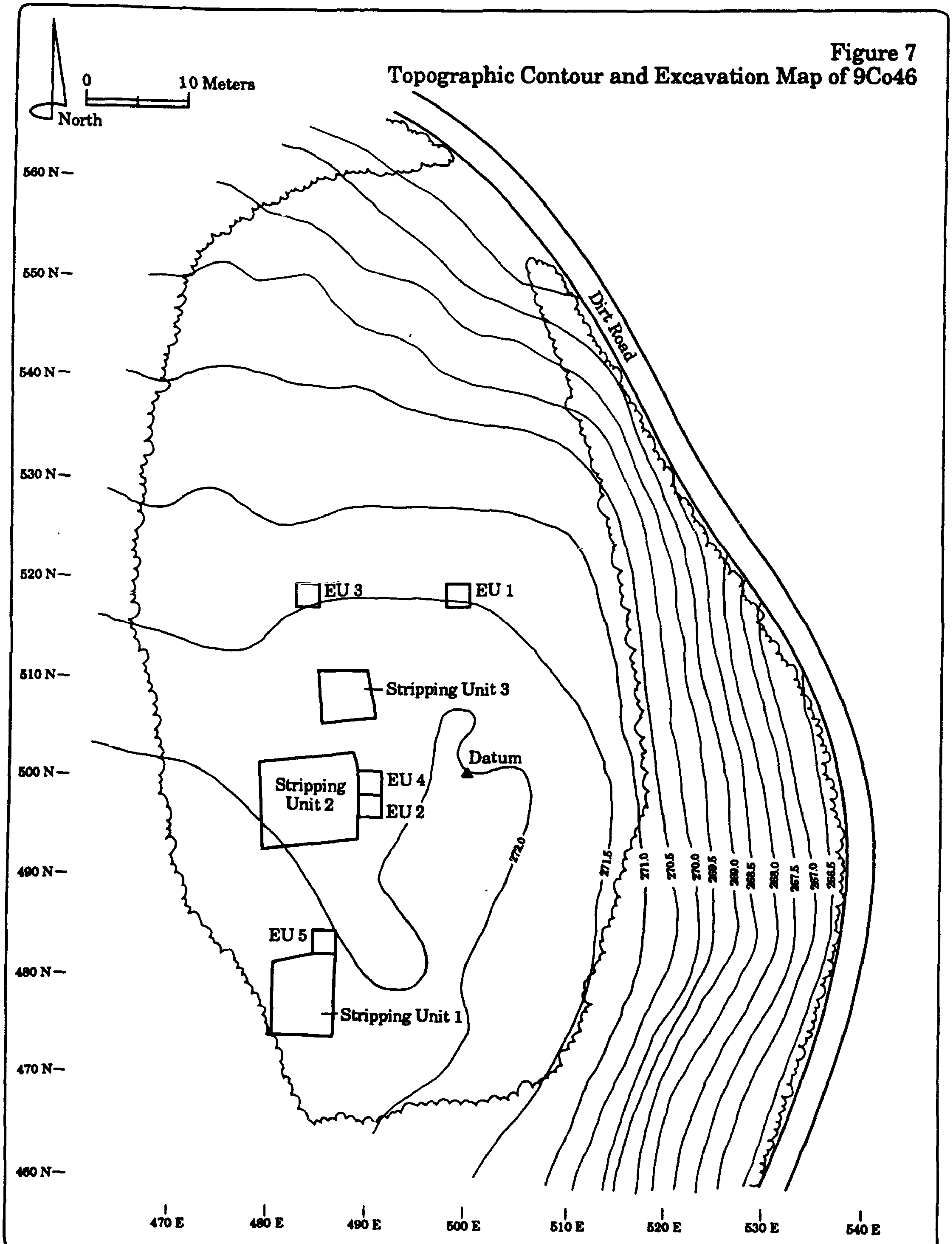
TESTING METHODOLOGY

Investigation of the site was initiated with the establishment of a map reference grid across the area cleared by the Corps of Engineers-Mobile. This was accomplished with a transit and meter tape. The grid measured 100 meters north-south by 50 meters east-west and grid points were established at 5 meter intervals along main baselines and at 10 meter intervals on other grid lines. The site datum was established at grid coordinates 500 N-500 E. Ultimately, grid points were set at each 5 meter interval by pulling a meter tape between points shot-in with the transit. Elevational data were collected at each of these grid points and a topographic contour map of the ridge toe was generated at 0.5 meter intervals (Figure 7). Topographic features located outside of the main grid were mapped using transit angles and distance readings off of a stadia rod.

Field investigation at the Butler Creek Site was designed to be implemented in three stages. The first stage involved short interval shovel testing across the expanse of the site to define site boundaries and to identify site structural characteristics as reflected by artifact density distributions. Shovel tests were excavated at 5 meters intervals within a grid measuring 80 meters north-south by 40 meters east-west, resulting in a sample of 118 soundings. This information, in turn, was used to develop a plan for a second stage of investigation based on hand-excavated test squares. Both artifact distributions and soil depth data were closely monitored to determine the placement of the test squares. The primary objectives of this second stage were to recover an artifact sample large enough to evaluate the occupational history of the site, to evaluate the stratigraphic composition of the site, and to search for preserved features. The final stage of investigation involved machine areal stripping to more fully evaluate the character of feature distributions over selected portions of the site. Data generated from the earlier two stages of investigation provided the basis for selecting the configuration and locations of areal stripping units.

Figure 7 depicts the locations of the various test squares and stripping units excavated during the investigation. Five 2 by 2 meter excavation units (EUs 1 through 5) and three machine stripped areas (Stripping Units 1 through 3)

Figure 7
Topographic Contour and Excavation Map of 9Co46



were excavated. Standard hand excavation levels in the plowzone were arbitrary and measured 10 centimeters in thickness. In several instances, natural strata were encountered below plowzone and were segregated from the plowzone levels. Because no internal stratigraphy could be discerned within the natural strata, these layers were also excavated in arbitrary 10 centimeter levels. Initial levels were justified by the highest elevation at ground surface, which generally resulted in an averaged level thickness of less than 10 centimeters. Because deposits above plowzone were generally less than 25 centimeters below surface, this meant that most units contained only one level (Level 2) that consistently approached the ideal 10 centimeter thickness. The bottom depth of the EUs ranged between 16.5 and 35.5 centimeters below ground surface and it is estimated that a combined total of 5.3 m^3 of deposit was removed from these units. The deposit was screened through 1/4 inch mesh hardware cloth and all artifacts recovered during screening were collected. Approximately 157 m^2 of combined area was exposed in the three SUs and it is estimated that this resulted in the removal of another 37.0 m^3 of overburden. The standard shovel test measured 0.3 meters in diameter and each was excavated to sterile substrate. The fill from the shovel tests was also screened through 1/4 inch mesh hardware cloth and artifacts recovered through screening were collected and provenienced by shovel test number. It is estimated that shovel testing resulted in the excavation of an additional 2.5 m^3 of deposit.

Twenty-seven prehistoric features were identified during the testing project, five of which were found in excavation units and the remainder of which were located during machine stripping. Seven of these features were subsequently excavated, either in part or in whole. The standard excavation procedure involved the following steps. First, the feature was bi-sectioned to expose a vertical profile. This was either accomplished in a single level or in arbitrary 10 centimeter levels depending upon the size and depth of the feature. It was stipulated in the scope of work that if internal stratigraphy was observable in the vertical profile of any feature, then the remaining half would be excavated in natural stratigraphic levels. None of the features excavated, however, exhibited discernible stratigraphic breaks. The remaining half of the feature fill was retrieved in arbitrary 10 centimeter levels when possible. Fill from features was sifted through 1/4 inch mesh hardware cloth and all ecofactual and artifactual material recovered through screening was collected. Flotation samples were collected prior to screening to avoid damage to subsistence remains. Ideal sample volumes of 6 to 10 liters were collected for flotation when possible, although some features contained considerably less fill than this. In these latter cases, all of the fill from the feature was collected for flotation. Collection procedures for flotation samples followed the standard column (for whole feature sampling) and dispersed (for level sampling) techniques.

The provenience system employed in the recovery of material in the field involved the use of a sequential bag number assignment. All artifact and ecofact material recovered from a specific provenience (i.e. EU 3, Level 2; Shovel Test Pit 5; Ground Surface; Grid Point 500 N-500 E; etc.) was assigned a provenience number identified as a "bag number." This number later served as the primary link between different artifact analysis categories in the computerized relational data base management system (i.e. 4th Dimension).

INITIAL SITE STRUCTURAL MODEL

One of the main objectives of the shovel testing program was to derive an initial picture of the structural characteristics of the Butler Creek Site by monitoring the spatial distributions of a number of artifact and deposit variables. Eight variables were selected for study including: 1) soil depth to sterile substrate, 2) soil color (Munsell values), 3) total chert debitage, 4) total quartz debitage, 5) total debitage, 6) total lithic tools, 7) total ceramics, and 8) total artifacts. Frequency and categorical data by individual shovel test for these variables are presented in Appendix II.

It was noted very early in the shovel testing program that the soil matrix of certain portions of the site was composed of a very dark and rich clay loam, not unlike the black, organic midden soil that is characteristic of prehistoric habitations. The Munsell color values recorded for each shovel test were combined into two groups to monitor the distribution of the darkest soil at the site and to further evaluate its possible anthropic origin (Eidt 1985:155). The dark soil group (Munsell color values: 10YR2/1, 2/2, 2/4, 2/6, 3/1, 3/2, 3/3) was found to concentrate on the flat portion of the ridge top, a location thoroughly consistent with where one would expect an occupational midden to form, while the light soil group (Munsell color values: 10YR3/4, 4/2, 4/3, 4/4, 5/6) was distributed along the northern and eastern perimeter of the site in the area where the slope began to descend off of the ridge top (Figure 8). As will be seen below, the dark soil distribution also conformed with the areas of highest artifact density and greatest soil depth, further supporting the identification of the darker soil group as midden. Two linear areas of lighter soil, one running along the 500 N grid line and the other running along the southern portion of the 500 E grid line, cross-cut portions of the dark soil distribution and gave the appearance of being artificially formed either as a consequence of some agricultural and/or erosional process during the historic period, or by some type of construction undertaken during the prehistoric occupation of the site.

An examination of the other variables monitored during shovel testing provided a more detailed picture of certain aspects of the spatial organization and structure of the site. Table 1 provides statistical summaries for these variables. Soil depth, which is principally a measure of the amount of plowzone remaining above sterile clay substrate in this instance, was found to be relatively substantial for an archeological site in an upland location. Moreover, the small coefficient of variation indicated that depth was relatively constant across the site and that erosion due to plowing had been very slight. The greatest degree of erosion had taken place on the lower slopes, at the northern and eastern perimeter of the ridge toe, as is indicated by the soil depth contour map in Figure 9. Soil depth generally ranged between 20 and 29 centimeters on the upper portion of the ridge, although small pockets of both greater and lesser depths were also documented. It was hypothesized at this time, and later confirmed, that many of the deeper pockets might represent partially preserved prehistoric features. The areas where the two linear distributions of the light soil group cross-cut sections of the dark soil concentration, also tended to contain slightly shallower depths.

TABLE 1. Mean Values for Shovel Test Variables, 9Co46.

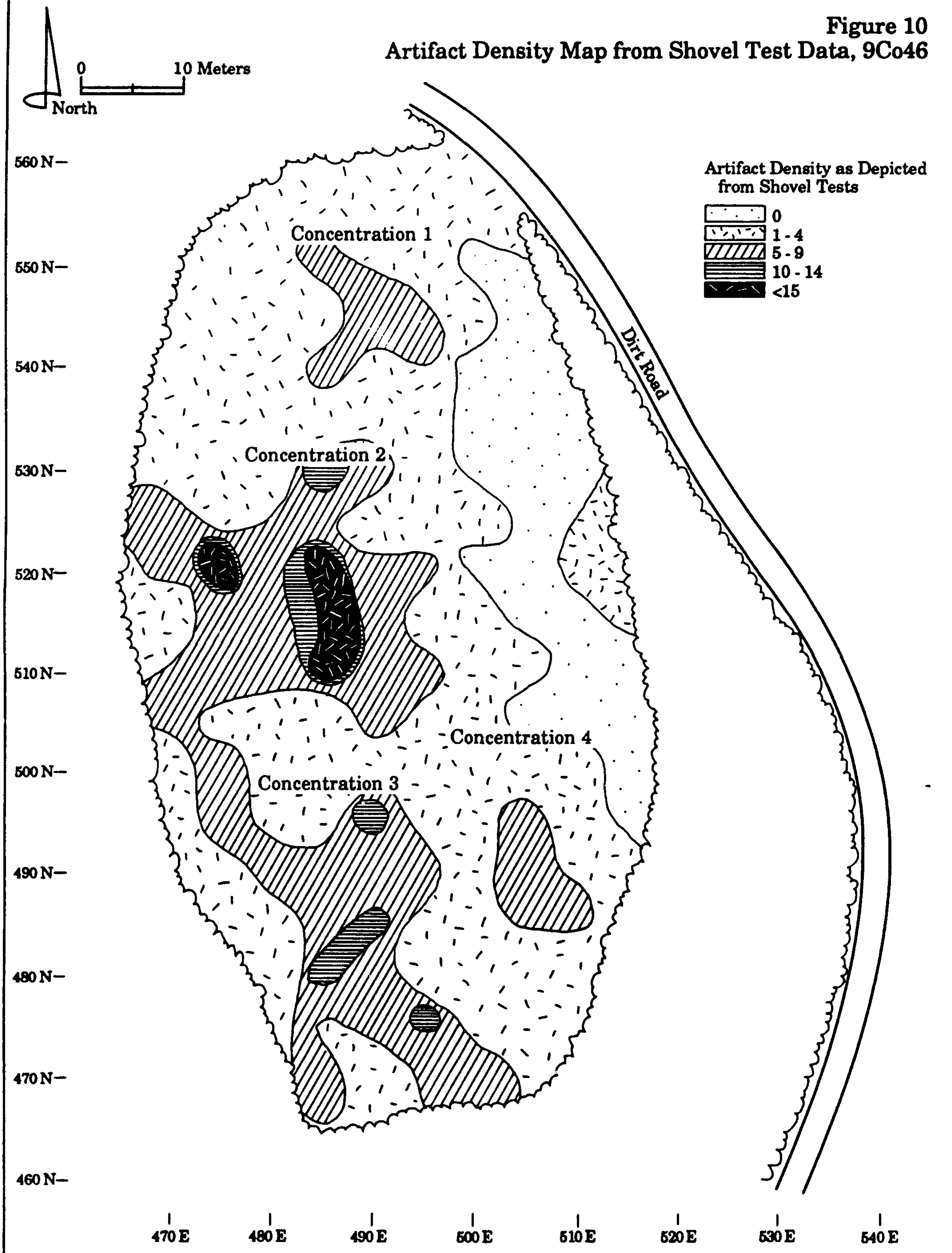
Variable	Mean	Standard Dev.	Range	CV
Soil Depth	23.59 cm	± 6.08 cm	9-49	25.76
Chert Debitage	1.00	± 1.24	0-5	124.74
Quartz Debitage	0.95	± 1.35	0-8	141.72
Total Debitage	1.95	± 2.02	0-12	104.00
Total Lithic Tools	0.04	± 0.20	0-1	477.42
Total Ceramics	1.78	± 2.43	0-12	136.48
Total Artifacts	3.76	± 3.62	0-20	96.21

CV: Coefficient of Variation

Artifact density also appeared to be quite high for an upland site. Approximately 85 percent of the shovel tests (100 out of 118) produced artifacts and the overall average per shovel test was nearly four total artifacts. The coefficient of variation values for the artifact variables, however, were much larger than that of the soil depth data, indicating a greater tendency for clustering and spatial variation. Separate contour maps were generated for each artifact variable, but comparisons of the resulting maps indicated little difference in distributional characteristics. The greatest density of artifacts occurred along the central spine of the ridge toe, principally in four variably discrete locations (Concentrations 1 through 4). The density contour map for total artifacts shows the locations of these concentrations most clearly (Figure 10), although a similar pattern was found when the various artifact categories were broken out individually. The locations of these concentrations corresponded closely with both darker soils and deeper soil depths, but was particularly correlated with the latter. The area of greatest artifact density (Concentration 2) was also the location of the largest areal concentration of soil depths greater than 29 centimeters. Again, the linear formations of lighter and shallower soil contained much lighter densities of artifacts.

An overall evaluation of this information in the field led to the conclusion that the dark soil distribution represented a prehistoric occupation midden representative of intensive habitation and that the four concentrations of high artifact density and greater soil depth corresponded to habitation loci within this larger matrix of midden. It was hypothesized further that these loci contained habitation-related features (i.e. house patterns, storage structures, etc.) and

Figure 10
Artifact Density Map from Shovel Test Data, 9Co46



facilities (i.e. roasting pits, storage pits, etc.) which might still be partially preserved below the plowzone. In addition, it was speculated that the spatial distributions of artifacts might reflect discrete activity areas within these loci, the areas of highest density representing secondary refuse heaps and the areas of lighter density corresponding to shelters and domestic plazas. The relatively small size of the site suggested that it probably represented a specialized habitation function such as a seasonally reoccupied or short-term, permanently occupied hamlet or farmstead. Although a portion of the site along the western perimeter was outside of the area cleared by the Corps of Engineers-Mobile, and hence not tested, the distributional data suggest that this area represented a relatively small portion of the site and that a close approximation of the core of the site could be obtained by measuring the distribution of the midden deposit. This deposit extended over an area of ca. 40 by 80 meters (0.24 acres). The four hypothesized habitation loci varied considerably in overall artifact density and size. Concentrations 1 and 4 were small, respectively covering areas of ca. 100 m^2 and 180 m^2, and exhibited only moderate artifact densities, while Concentrations 2 and 3 were significantly larger (ca 450 m^2 and 625 m^2) and contained much higher artifact densities. These observations suggested that the two groupings of loci were either functionally distinct or comprised of different social unit sizes, or that the larger concentrations contained much more complex occupational histories. Several sherds of Swift Creek Complicated Stamped and Cartersville Simple Stamped ceramics had been identified in collections from shovel testing, as well as additional examples of Cartersville Check Stamped sherds, suggesting that the occupational history of the site might have extended over a relatively long period of time and providing further support for the suggestion that some sections of the site might have been heavily reoccupied.

EXCAVATION UNITS

A total of five 2 by 2 meter excavation units (EUs) were placed at various locations within the core of the site to search for preserved features and to begin to address some of the questions generated by the shovel testing program. EU 1 was placed at the eastern edge of Concentration 2 to investigate an area of relatively high lithic debitage accumulation on the periphery of a habitation locus. EU 2 was placed at the northern edge of Concentration 2 to examine an area of unusually greater soil depth that was regarded as a possible feature location. EU 3 was situated over an area of extremely high artifact density in Concentration 2 to help evaluate the occupational history of this locus. EU 4 was placed contiguously to EU 2 to further expose a complex of features. The final unit, EU 5, was placed in the southern portion of Concentration 3 in an area of higher artifact density to further evaluate the occupational history of this habitation locus. Stratigraphic data collected in the field for each of these test squares will be discussed below and is summarized in Table 2. A detailed accounting of the artifactual material and feature descriptions will be presented later in the chapter.

TABLE 2. Stratigraphic Summary Data for Excavation Units, 9Co46.

EU	Size	Level	Level Type	Level Thick.*	Soil Texture	Munsell Color
1	2X2m	1	A	4.75 cm	Sandy Loam	10YR 4/4
		2	A	9.25 cm	Sandy Loam	10YR 4/4
		3	A	5.25 cm	Sandy Loam	10YR 4/4
		F-1	N	6.00 cm	Sandy Clay Loam	10YR 3/6
2	2X2m	1	A	10.12 cm	Sandy Loam	10YR 2/2
		2	A	8.25 cm	Sandy Loam	10YR 2/2
		3	N	1.75 cm	Sandy Loam	10YR 2/2
		F-2	N	9.50 cm	Clay Loam	10YR 3/4
		F-3	None		Oxidized Clay	5YR 4/6
3	2X2m	1	A	4.50 cm	Sandy Loam	10YR 4/4
		2	A	10.00 cm	Sandy Loam	10YR 4/4
		3	A	6.00 cm	Sandy Loam	10YR 4/4
		4	N	6.25 cm	Fine Sandy Clay	5YR 4/6
4E	1X2m	1	A	7.25 cm	Sandy Loam	10YR 2/2
		2	A	9.25 cm	Sandy Loam	10YR 3/1
		F-2	None		Clay Loam	10YR 3/4
		F-3	None		Oxidized Clay	2.5YR 4/8
4W	1X2m	1	A	10.50 cm	Sandy Loam	10YR 2/2
		2	A	6.75 cm	Clay Loam	10YR 2/2
		F-2	None		Clay Loam	10YR 3/4
		F-3	None		Oxidized Clay	2.5YR 4/8
		F-4	N/A	27.50 cm	Clay Loam	10YR 2/1
5	2X2m	1	A	8.25 cm	Sandy Clay Loam	10YR 3/4
		2	A	6.75 cm	Sandy Clay Loam	10YR 3/4
		3	A	3.50 cm	Sandy Clay Loam	10YR 3/4
5SW	1X1m	4	N/A	10.00 cm	Sandy Loam/Clay	10YR 3/4, 4/6
		F-5	N	7.00 cm	Clay Loam	10YR 3/4
		5	N/A	2.00 cm	Sandy Loam/Clay	10YR 3/4, 4/6
5SE	1X1m	4/5	N/A	11.75 cm	Sandy Loam/Clay	10YR 3/4, 4/6
		6	N/A	11.50 cm	Fine Sandy Clay	10 YR 4/6

Legend:

Level Type (A=Arbitrary; N/A=Undisturbed Deposit Excavated in Arbitrary Levels; None=Not Excavated).

* Level Thickness Values are Averaged from Closing Level Elevations Taken at Each Corner of the Excavation Unit.

Excavation Unit 1

EU 1 was located between grid coordinates 515-517 N/498-500 E at the extreme eastern edge of Concentration 2. This unit was excavated in three arbitrary levels as indicated in Table 2. It was determined that the plowzone extended all the way to sterile red clay substrate at an averaged depth below surface of 19.25 centimeters . The plowzone consisted of a dark yellowish brown (10 YR 4/4, i.e. light soil group) sandy loam and contained numerous small to medium sized quartz rock. The substrate was also rocky and consisted of a strong brown (7.5 YR 4/6) clay matrix. A small subcircular stain (Feature 1) measuring approximately 16 centimeters in diameter was identified at the plowzone-substrate contact along the northern wall of the unit. The fill of the stain consisted of a loose, dark yellowish brown (10 YR 3/6) sandy clay loam that was very distinct from the overlying plowzone. Upon excavation it was shown that the feature had the twisting shape of a root hole or rodent run and therefore probably did not represent a cultural feature.

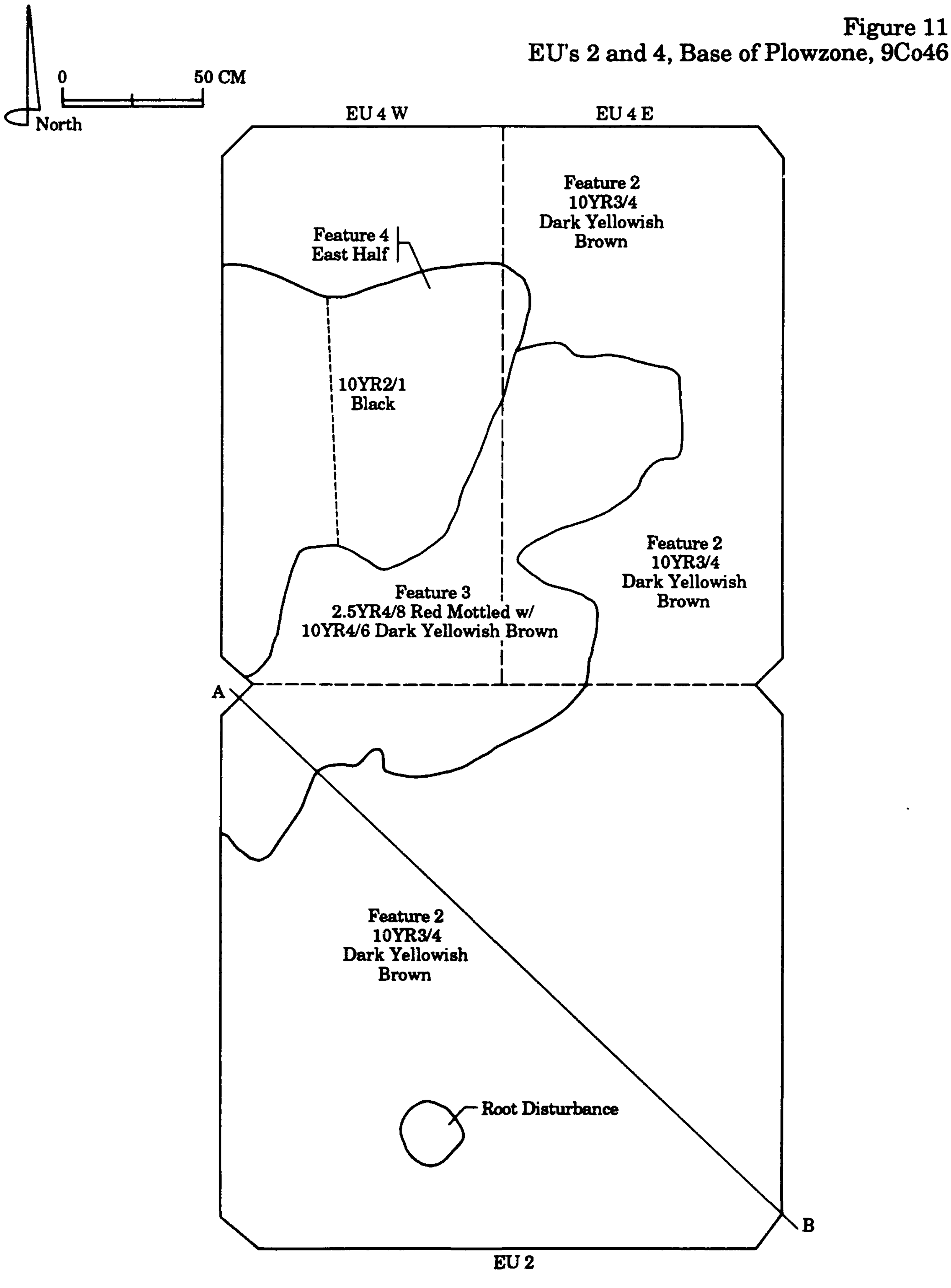
Excavation Units 2 and 4

These two units are treated together for ease of discussion. EU 2 (494-496 N/489-491 E) was initiated over a shovel test pit that had revealed the presence of a very deep and rich deposit suggestive of a cultural feature. Subsequent excavation demonstrated the presence of a complex of features, the further delineation of which required exposing the adjacent area to the north. This was accomplished with EU 4, which was excavated as two contiguous 1 by 1 meter units (4W: 498-500 N/489-490 E, 4E: 498-500 N/490-491 E) located immediately to the north of EU 2 (see Figure 7; Table 2).

Levels 1 and 2 of EU 2, which were excavated as arbitrary 10 centimeters levels, consisted of a very dark, nearly black (10YR 2/2), sandy loam that appears to represent a plow-disturbed midden deposit. Nearing the bottom of Level 2, an area of resistant oxidized clay was encountered in the northwestern corner of the unit (Figure 11). It was speculated that this might represent a burned house floor or other plow-impacted prehistoric feature, but there was still no indication of a soil change in the rest of the unit that would suggest the termination of the plowzone. Nonetheless, Level 2 was closed out at this point and Level 3 was initialized. The oxidized clay material was pedestalled while excavations continued in the other portions of the unit. Within 2 centimeters of the base of Level 2, changes were noted in both the texture and color of the soil. It had become noticeably more clayey in consistency and the color had lightened to a dark yellowish brown (10YR 3/4). Level 3 was closed out at this point and the undisturbed deposit in the floor of EU 2 was assigned a feature number (F-2) and interpreted as a basal remnant of the prehistoric midden. The remainder of the deposit was then removed from this feature in three arbitrary 5 centimeter levels. The base of the midden was irregular and sloped from ca 5 centimeters below the base of Level 3 in the northeast corner of the unit to 14 centimeters below this elevation in the southwest corner (Figure 12).

A concern for economy resulted in the decision to initiate an extension to the north of EU 2 with a 1 by 2 meter unit rather than a 2 by 2 meter one. The

Figure 11
EU's 2 and 4, Base of Plowzone, 9Co46



results of this excavation, however, indicated the advisability of extending further to the east and another 1 by 2 meter unit was excavated contiguous to the first. These units were ultimately designated EU 4W and EU 4E. The base of the plowzone was soon shown to be very shallow in these units as well. The average depth to the basal plowzone contact in EU 2 was 18.37 centimeters , while in EU 4W it was 17.25 centimeters and in EU 4E it was 16.50 centimeters . Again, the plowzone soil was very dark (10YR 2/2, 3/1) and loamy in composition, while the undisturbed basal midden (Feature 2) was much more clayey and lighter in color (10YR 3/4). In addition to undisturbed midden, the base of EU 4 also contained the larger portion of the oxidized clay feature (Feature 3) and an irregular, oval shaped pit (Feature 4). The pit contained a very rich, black (10YR 2/1) clay loam fill that distinctively contrasted with the lighter undisturbed midden (Figures 11 and 12). The upper portion of the pit had been truncated by plowing and the smearing of its upper fill probably explains the extremely dark coloration of the plowzone in this area of the site. The oxidized clay material was shown to be limited to an area of only slightly more than 2 meters and it was concluded that it probably represented the truncated base of an interior house hearth, as no trace of a basin could be identified. The floor of the house, which must have rested on midden, would also have been destroyed by plowing. The feature complex exposed in these two units evidences a rather developed sequence of superposition. A portion of the midden (Feature 2) had formed prior to the construction of the house represented by the truncated hearth (Feature 3), which, in turn, was abandoned prior to the excavation of the pit (Feature 4). This pit clearly intrudes the hearth, as portions of the latter were removed during its construction. These features and their chronological relationships will be more fully discussed later in the chapter.

Excavation Unit 3

EU 3 (515-517 N/483-485 E) was placed in the area of highest artifact density in Concentration 2 to derive a clearer picture of the history of occupation in this habitation locus (Figure 7). The plowzone was excavated in three arbitrary levels (Table 2) and extended to an average depth of 20.50 centimeters below ground surface. The base of the plowzone contacted clay substrate at this point. The soil was a dark brown (10YR 4/4) sandy loam and contained abundant rock float. The top of the substrate exhibited a diffuse mottling indicative of mixture with either the plowzone or the remnants of the undisturbed prehistoric midden. This transitional zone (Level 4) was excavated to an average depth of 6.25 centimeters below the base of the plowzone (Level 3), at which point most of the mottling had disappeared and the deposit was definitely sterile. No features were detected at the base of Level 3 despite careful troweling and inspection.

Excavation Unit 5

EU 5 was placed in the southern portion of Concentration 3 in an area of high artifact density to further delineate the occupational history of this locus (Figure 7). The plowzone in this unit consisted of a dark, yellowish brown (10YR

Figure 12
EU's 2 and 4, 9Co46

EU's 2 and 4, partial exposures of Features 3 and 4 and base of Feature 2, 9Co46.

3/4) sandy clay loam and extended to an average depth of 18.50 centimeters below ground surface. A transitional zone similar to that observed in EU 3 was detected at the base of Level 3. A small circular stain was identified in the southwest quarter of the unit at this point and was determined to represent the base of a small post hole (Feature 5). The southern half of the unit was excavated below the plowzone contact to derive a sample of artifacts that might be representative of the earliest period of occupation at the site. The southwest one-quarter (5SW) was excavated to a depth of 12 centimeters below the plowzone contact, while the southeast one-quarter (5SE) was taken to a depth of 23.5 centimeters below the contact. Cultural material was not recovered below Level 5 in either of these subunits.

MACHINE STRIPPING

Machine stripping was accomplished with the use of a backhoe. This was not the ideal tool for the purpose, but it was the only available mechanized equipment at the time fieldwork was undertaken, at the peak of summer construction schedules. A small, finish grader or a backhoe equipped with a 5 foot wide, flat, stripping bucket would have been much easier to control. The contact between the dark brown plowzone and the yellowish red substrate was so dramatic, however, that careful application of a common backhoe bucket with teeth was sufficient to expose and identify features. When contact with substrate neared, final stripping and definition was accomplished with a combined technique consisting of alternate leveling with flat-nosed shovels and light combing with the backhoe bucket teeth. This procedure insured that very little damage impact occurred in the subplowzone fill of features.

The placement of stripping units (SUs) was determined in such a manner as to strike a balance between information retrieval and concerns for preservation. The total area ultimately stripped (157 m^2) amounted to only about 5 percent of the site core (3,200 m^2), but had the stripped areas been situated over the highest artifact density concentrations it is estimated that more than 60 percent of the material culture inventory of the site would have been displaced. The rather discrete artifact density distributions revealed during shovel testing indicated that much of the spatial integrity of the artifacts was still preserved in spite of plowing impacts, and it was felt that it would be in the best interest of the cultural resources to preserve much of the high density area. The primary purpose of the stripping stage was to evaluate the potential of the site to contain preserved features below plowzone and, if features were determined to be present, to generate a degree of understanding concerning their variety and distributional characteristics. A chief concern in this regard was the relationship between artifact density and feature distributions. At the outset, it was not known whether feature density would be conterminous with artifact density, or whether the greatest concentrations of features would, in fact, occur outside of high artifact density zones. The latter condition would indicate that the previously identified artifact concentrations represented discrete secondary refuse zones adjacent to habitation areas, while the former would indicate a much more complex and overlapping relationship. This question, then, became the focus of the machine stripping investigation.

Three different locations were subjected to machine stripping to further evaluate the relationships between artifact and feature densities and the nature of feature preservation at the site. SU 1 (Figure 13) was excavated south of EU 5, at the southern edge of Concentration 3. This was an area of moderate to light artifact density that had been demonstrated to contain the potential for feature preservation by the discovery of a small post hole (Feature 5) in EU 5. This unit covered an area of approximately 48 m^2, but produced only two additional features, two small post holes (Features 13 and 14). SU 2 was extended west of EU 2 and EU 4 in an attempt to further define the house plan associated with the truncated hearth (Feature 3) and to examine another area of light to moderate artifact density. The total area of exposure in this unit approximated 81 m^2. Feature density, again, was relatively low, as only 5 additional features were defined at contact with substrate (Figure 14), and a house plan associated with the hearth was not discernible. SU 3 was placed several meters north of SU 2, at the southern edge of Concentration 2 in an area of moderate to heavy artifact density. This unit, which resulted in the exposure of an additional 28 m^2 of area, produced the highest feature density of the stripping effort. Twelve post holes and an additional truncated, clay-lined hearth were identified (Figure 15).

The results of stripping indicated, with some certainty, that artifact and feature density distributions were highly correlated. The feature complex in EUs 2 and 4 is situated at the extreme northern edge of the highest artifact density contour in Concentration 3, and SU 3, which contains a feature density of $0.46/m^2$ is located in the southern portion of the highest artifact density contour at the entire site, in Concentration 2 (see Figures 7 and 10). SU 2 corresponds to a gap in artifact density between Concentrations 2 and 3 and exhibits a feature density of only $0.06/m^2$. Similarly, SU 1 is situated in an area of only light to moderate artifact density and exhibits a feature density of only $0.04/m^2$. The character of feature composition in these various stripping units and exposures does not seem to be appreciably different. All are dominated by architectural features (i.e. prepared clay hearths and post holes), indicating that variation in feature density is probably not the result of functionally distinct activities. Instead, it would appear that high artifact densities reflect the specific loci of intensive habitation and that the lower artifact densities correspond to the effective boundaries of such activities. The low feature density in SU 2, may be somewhat underinflated because this area contained a lense of undisturbed midden ranging between 2 and 10 centimeters above sterile substrate that may have hidden some small post-holes. This deposit, however, was carefully levelled and troweled before proceeding to clay substrate and it is not likely that the actual feature density value is significantly higher than the one derived from monitoring the substrate contact. A similar midden deposit was identified at the base of the plowzone in SU 3, but did not seriously impact the ability to distinguish a number of features at substrate contact.

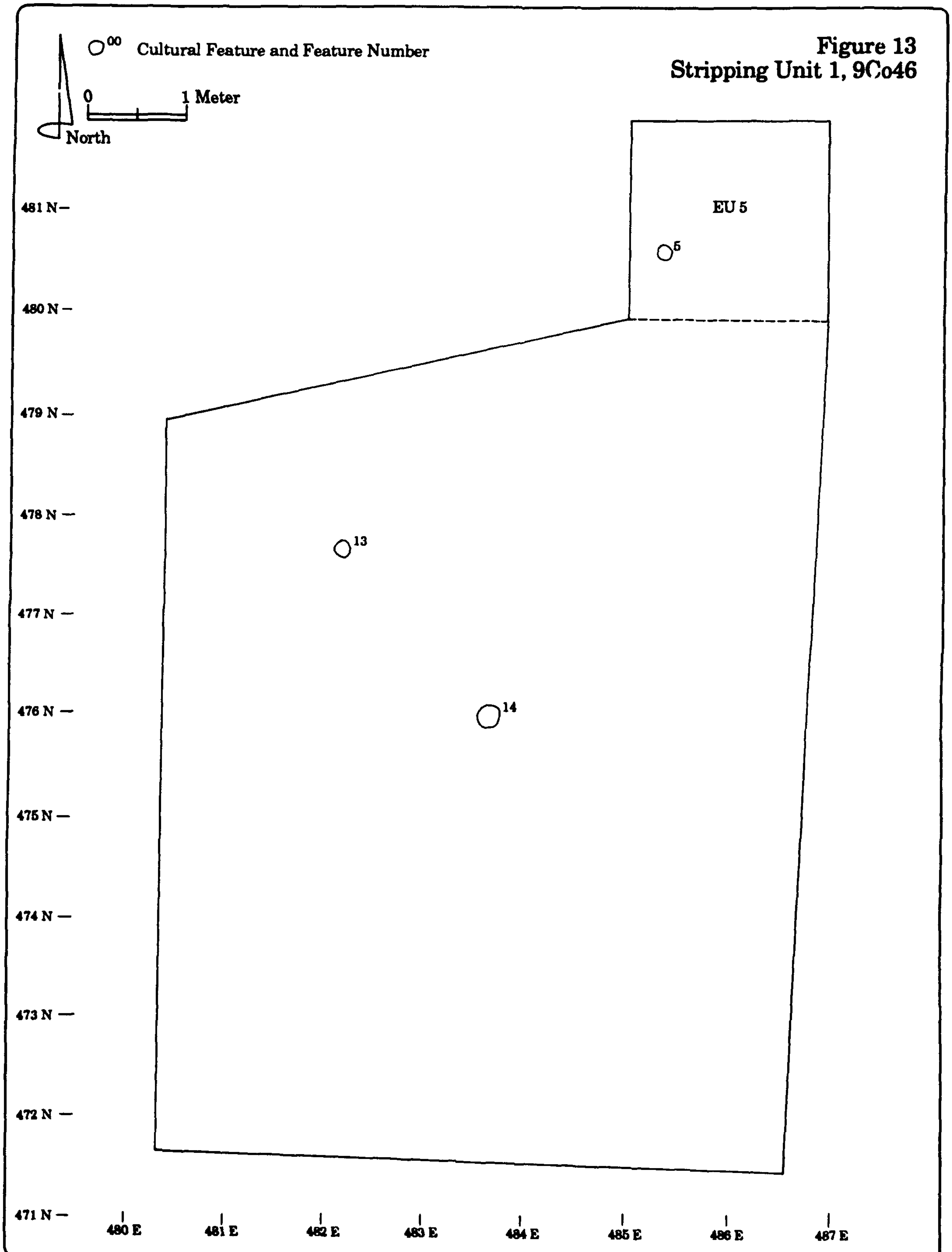


Figure 13
Stripping Unit 1, 9Co46
00 Cultural Feature and Feature Number
0
1 Meter
North
EU 5
5
13
14
481 N
480 N
479 N
478 N
477 N
476 N
475 N
474 N
473 N
472 N
471 N
480 E
481 E
482 E
483 E
484 E
485 E
486 E
487 E

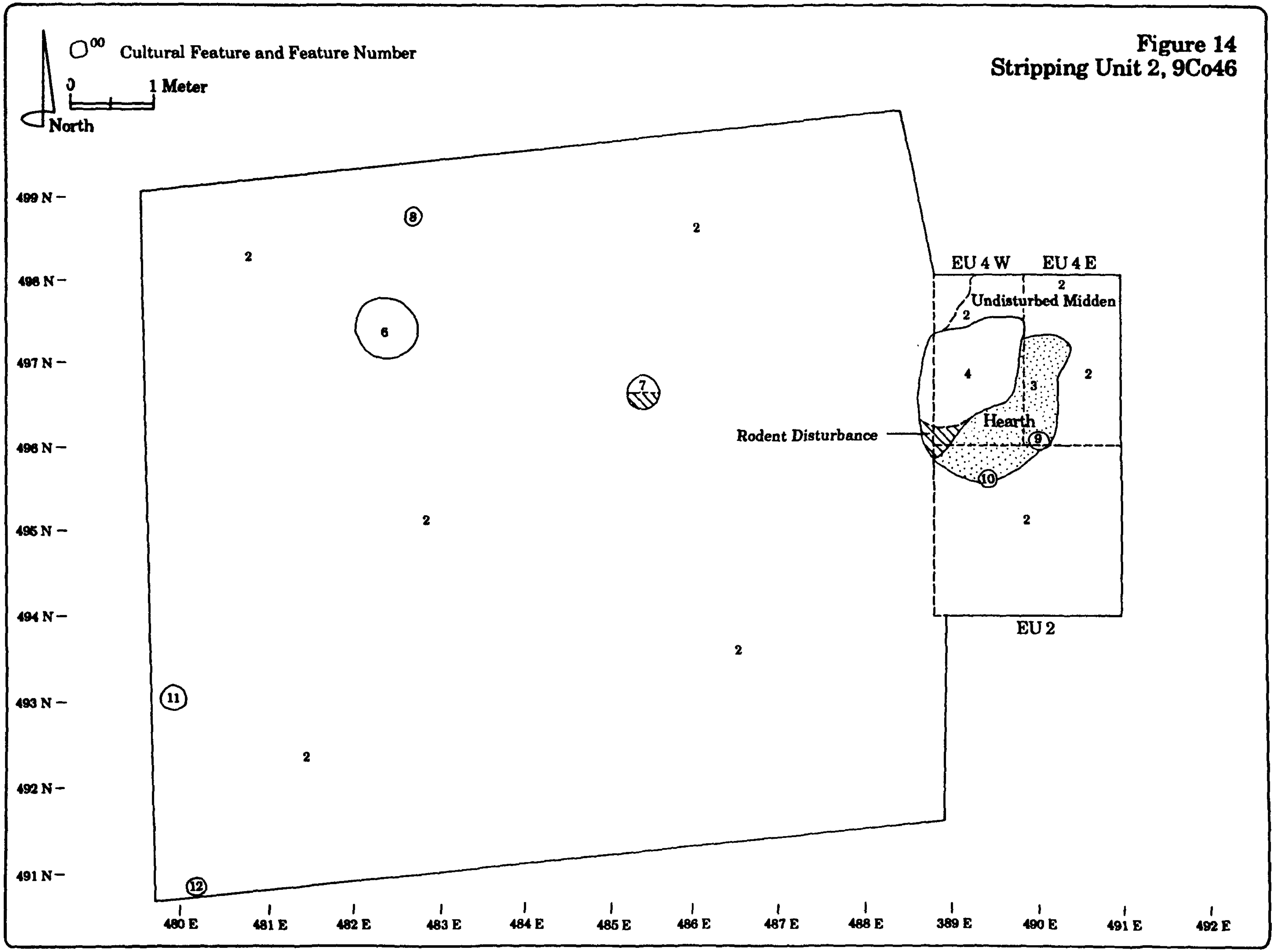
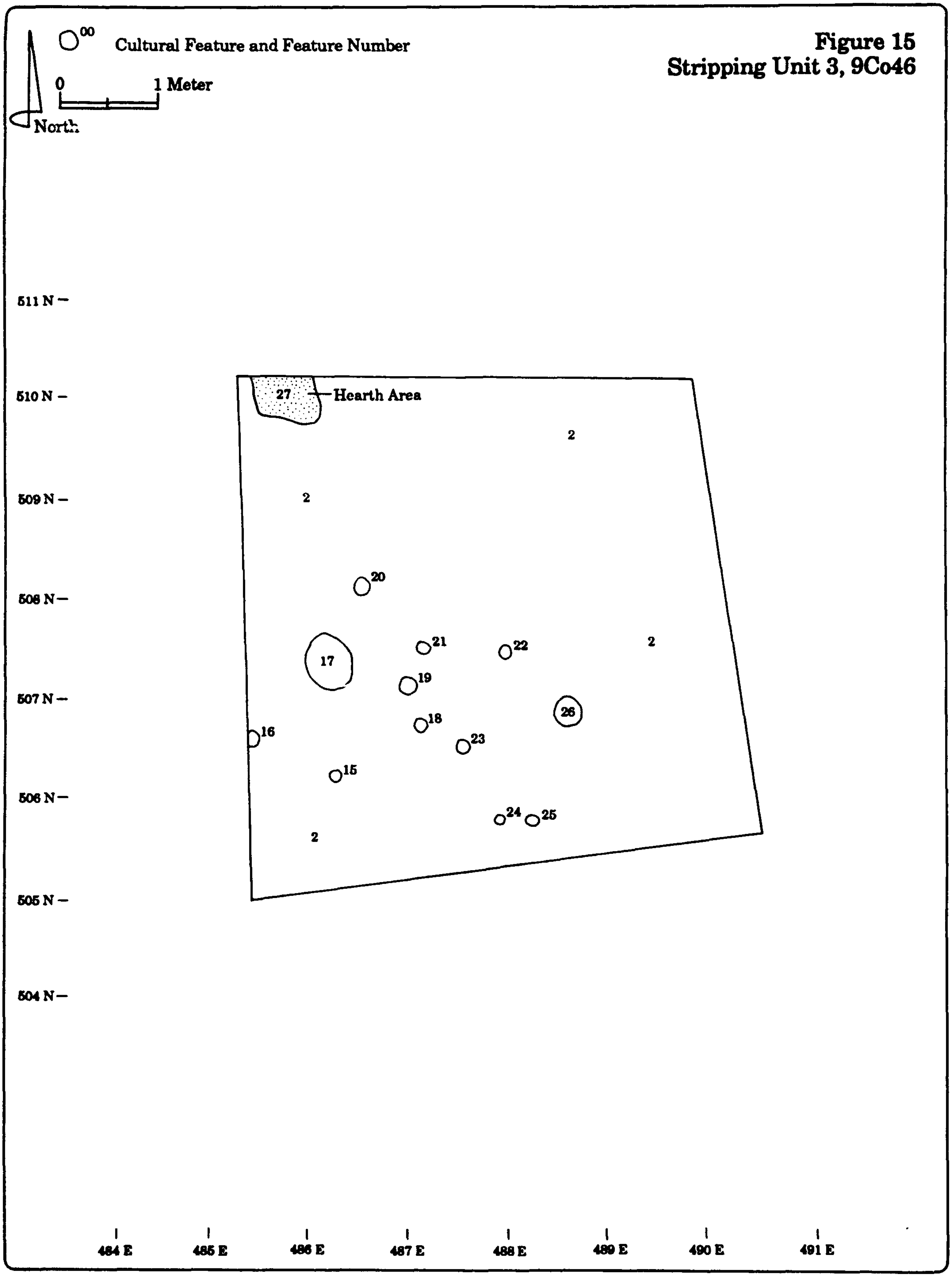


Figure 14
Stripping Unit 2, 9Co46



00 Cultural Feature and Feature Number
0 1 Meter
North
Figure 15
Stripping Unit 3, 9Co46
511 N
510 N
509 N
508 N
507 N
506 N
505 N
504 N
27
Hearth Area
2
2
20
17
21
22
2
19
26
18
16
23
15
24
25
2
484 E
485 E
486 E
487 E
488 E
489 E
490 E
491 E

FEATURE DESCRIPTIONS

Twenty-seven features were identified during testing at the Butler Creek Site , including 21 post holes, 2 truncated, prepared clay hearths, 2 pits, an undisturbed midden deposit, and a feature later determined to represent a tree root hole or rodent run. A complete listing of all of these features, along with their proveniences and their plan dimensions, is presented in Table 3. The northing and easting coordinates provide grid locations in the approximate center of each feature and plan dimensions are reported in centimeters. Descriptions of each feature category, and of individual features when appropriate, are presented below.

TABLE 3. Listing of Features, Feature Proveniences and Feature Plan Dimensions, 9Co46.

Feature	Feature Type	Unit Provenience	Northing	Easting	Length	Width
1	Rodent Burrow	EU 1	517.0	498.9	16	12
2	Undisturbed Midden	EU 2/EU 4	496.0	490.0	-	-
3	Truncated Clay Hearth	EU 2/EU 4	496.2	489.6	211	76+
4	Oval Pit	EU 4	496.9	489.2	198	109
5	Small Post Hole	EU 5	480.7	485.4	20	15
6	Shallow, Circular Pit	SU 2	497.4	482.4	89	81
7	Medium Large Post Hole	SU 2	496.6	485.4	39	34
8	Small Post Hole	SU 2	498.7	482.7	22	21
9	Small Post Hole	SU 2	496.1	490.0	22	20
10	Small Post Hole	SU 2	495.6	489.4	21	20
11	Medium Post Hole	SU 2	493.0	479.9	30	27
12	Small Post Hole	SU 2	490.8	480.2	22	20
13	Small Post Hole	SU 1	477.7	482.1	18	16
14	Small Post Hole	SU 1	476.0	483.6	21	20
15	Small Post Hole	SU 3	506.2	486.3	13	11
16	Small Post Hole	SU 3	506.6	485.5	16	15
17	Large Post Hole	SU 3	507.4	486.2	58	46
18	Small Post Hole	SU 3	506.7	487.1	13	13
19	Small Post Hole	SU 3	507.1	487.0	18	16
20	Small Post Hole	SU 3	508.1	486.5	16	15
21	Small Post Hole	SU 3	507.5	487.1	13	13
22	Small Post Hole	SU 3	507.4	488.0	14	13
23	Small Post Hole	SU 3	506.5	487.6	13	13
24	Small Post Hole	SU 3	505.8	487.9	10	9
25	Small Post Hole	SU 3	505.8	488.2	11	11
26	Medium Post Hole	SU 3	506.9	488.6	31	28
27	Truncated Clay Hearth	SU 3	510.0	485.7	65	45+

Feature Dimensions are reported in centimeters.

Midden (Feature 2)

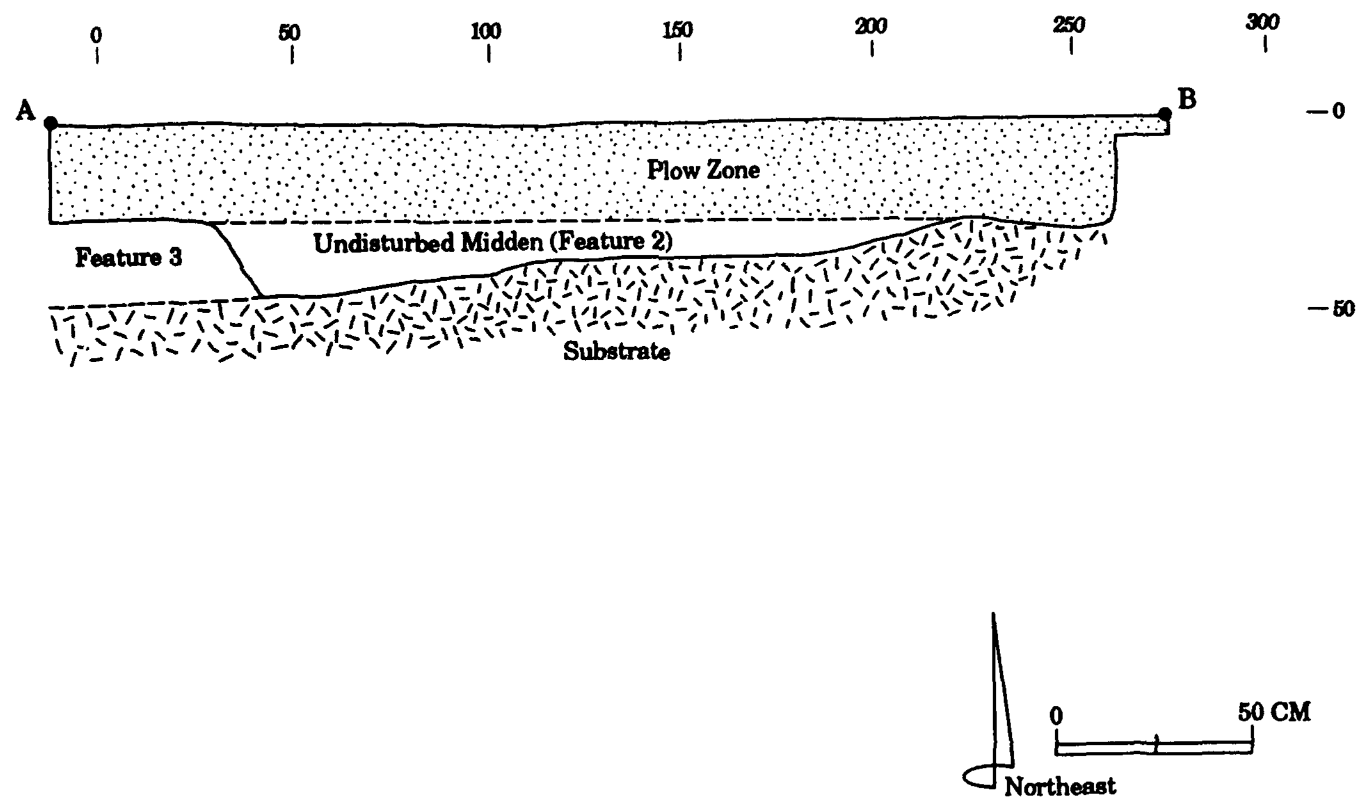
The basal portion of the original occupation midden of the site was first discovered during the excavation of EU 2 (Figure 11). This midden remnant, which had been substantially truncated by plowing, exhibited a slightly lighter coloration (dark yellowish brown, 10YR3/4, 4/4) than the overlying plowzone (very dark brown, 10YR2/2), and it was concluded that this contrast was probably due to the plow mixing of dark, blackish fill from a nearby pit (Feature 4) with lighter occupation midden. The unit of undisturbed midden (below plowzone) in EU 2 was designated Feature 2 and was excavated in three 5 centimeter arbitrary levels. The base of the midden was irregular and sloped downward from east to west (Figure 16). Depths below plowzone ranged from a minimum of 7 centimeters in the east to a maximum of 14 centimeters at the extreme western side of the unit. The fill consisted of a clay loam ranging in color from 10YR3/4 in the center of the unit, to 10YR4/4 along the eastern edge. Two small, circular, dark brown stains (10YR3/2 and 10YR2/1) were identified within this lighter matrix at the plowzone contact, but were interpreted as root hole or rodent disturbance features rather than post holes, since the fill was loose in each and the darker coloration indicated that both features were formed after plowing had been initiated at the site. Neither of these features were assigned numbers.

The midden fill consisted of a compact clay loam containing a moderate amount of rock float, some of which may have been fire-cracked. Artifact density within Feature 2 was relatively light, as would be expected at the basal portion of an occupation midden. The entire collection of artifacts consisted of 3 pieces each of quartz and chert debitage and 27 sherds, yielding an estimated (averaged) volumetric density of 78.6 artifacts/m^3. This is compared with a mean volumetric density of 177.1 artifacts/m^3 for the shovel test sample and a combined density of 764.4 artifacts/m^3 for Levels 1-3 in the overlying the midden in EU 2. The precise dimensions of the remnant midden were not determined during the testing project, but it was encountered in a number of units and it is possible to make a tentative size estimate. It was encountered throughout SUs 2 and 3, but it was not detected, or was detected only as an extremely thin remnant of less than 2 centimeters in thickness in SU 1 and EU 5, and it was definitely absent in EUs 1 and 3. This suggests that the remnant midden extended over a maximum area of ca. 25 by 30 meters (750 m^2), primarily within Concentration 2 and the northern edge of Concentration 3, and that stripping and hand excavation removed approximately 15.6 percent of the remaining portions of the feature.

Pits

Two pits were identified and excavated during testing. Feature 4 was a relatively large, deep pit, while Feature 6 was smaller and apparently shallow (Table 3). Each of these features is described separately below.

Figure 16
Vertical Profile of Base of Midden (Feature 2), EU 2, 9Co46



Feature 4

Feature 4 was initially discovered at the base of EU 4 (see Figures 11, 12, and 14) where it appeared as a very dark brown (10YR 2/1), oval stain intruding the lighter, dark yellowish brown (10YR 3/4) matrix of the undisturbed occupation midden (Feature 2) and an irregular, yellowish red (2.5YR 4/8) prepared clay hearth (Feature 3). Excavation of the pit was initiated by establishing a north-south bisectional line and removing the fill from the east one-half (E 1/2) as a single level (Figure 17). This recovery unit was designated "Level 1, E 1/2" and it extended from 18 to 45 centimeters below the EU 4 datum. The section profile indicated that the fill did not contain discernible internal stratigraphy, and consequently the west one-half (W 1/2) of the pit was removed in three arbitrary levels (Levels 1-3). Similar depth readings were recorded for this western portion of the feature (18 to 46 centimeters below the EU 4 datum). The completed excavations revealed a large, deep pit of relatively regular, sub-oval outline with a steep basin-shaped cross-section (Figures 18 and 19). Maximum plan dimensions were 1.98 meters in length and 1.09 meters in width, with a maximum depth of 0.29 meters. Two areas of disturbance were noted. One was a subcircular stain located in the approximate center of the pit basin which contained loose fill from the darker plowzone matrix. Excavation revealed the feature to be a root hole. The other area of disturbance was located on the southern perimeter of the pit and was identified as a mottled fill consisting of broken hearth material and compact pit fill. This area terminated in an angular shape at the plowzone contact level and suggested that it might have originated as a cave-in of the pit wall occurring around the time of its abandonment. The absence of loose fill indicated that it was not a disturbance related to the recent historic use of the site, although no firm evidence definitely placed the timing of the event during the prehistoric occupation. Several fragments of large ungulate long bone were recovered from this area of the pit, however, which suggests that the disturbance could very well have been prehistoric in age.

The soil of the pit fill consisted of a very dark brown (10YR2/1, 2/2), clay loam and contained numerous small to medium-sized rocks, some of which appeared to be fire-cracked. Although occurring as a diffuse scatter within the matrix of the pit, the rock was definitely more concentrated in the pit fill than in the surrounding plowzone and midden (see Figure 17). The sides of the pit were not noticeably oxidized from exposure to fire, however, and as such it cannot be positively concluded that the feature represents a roasting pit. Nevertheless, Caldwell (1957) identified a number of such features during excavations in the Allatoona Reservoir which he interpreted as roasting pits. It should be noted that the application of heat to a pit or earth oven through the addition of heated stones would not necessarily result in oxidized pit walls, as a number of ethnographic accounts will attest (see Hough 1926; Powell 1875; Roth 1897). Certainly the very dark, almost black soil of the pit fill suggests the processing and cooking of food (and possibly heating of the stones over an open fire) in or near the pit, and as such a posited roasting function for the pit seems fairly reasonable.

Figure 17
Feature 4, East Half Removed, EU 4, 9Co46

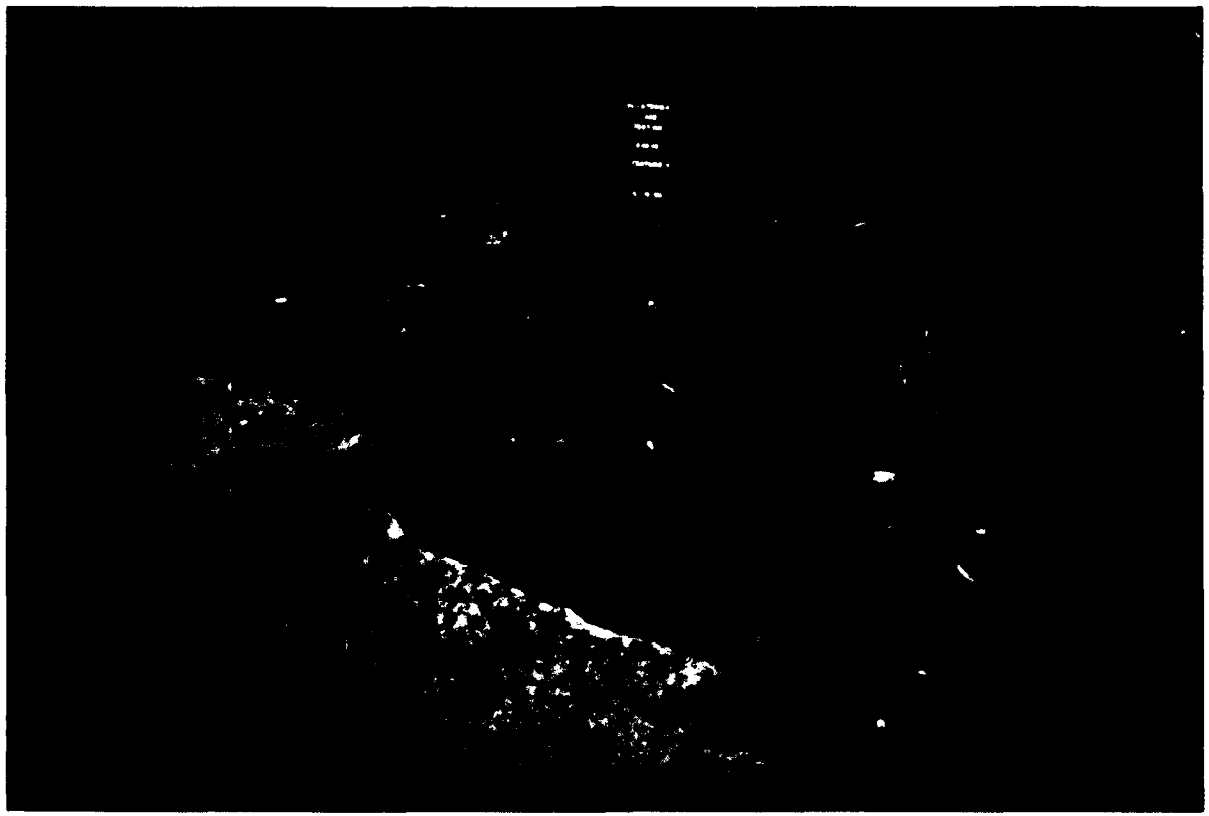


Figure 18
Feature 4, Totally Excavated, EU 4 and Stripping Unit 2, 9Co46

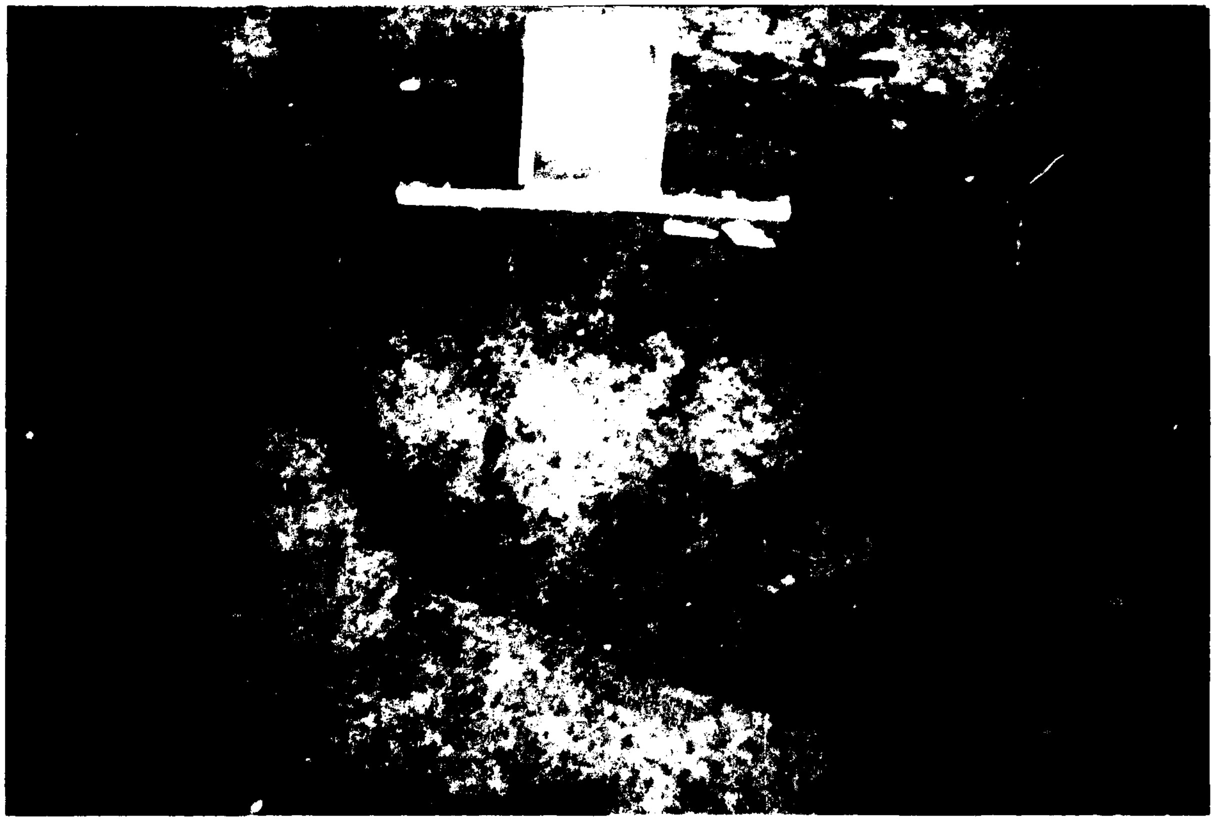
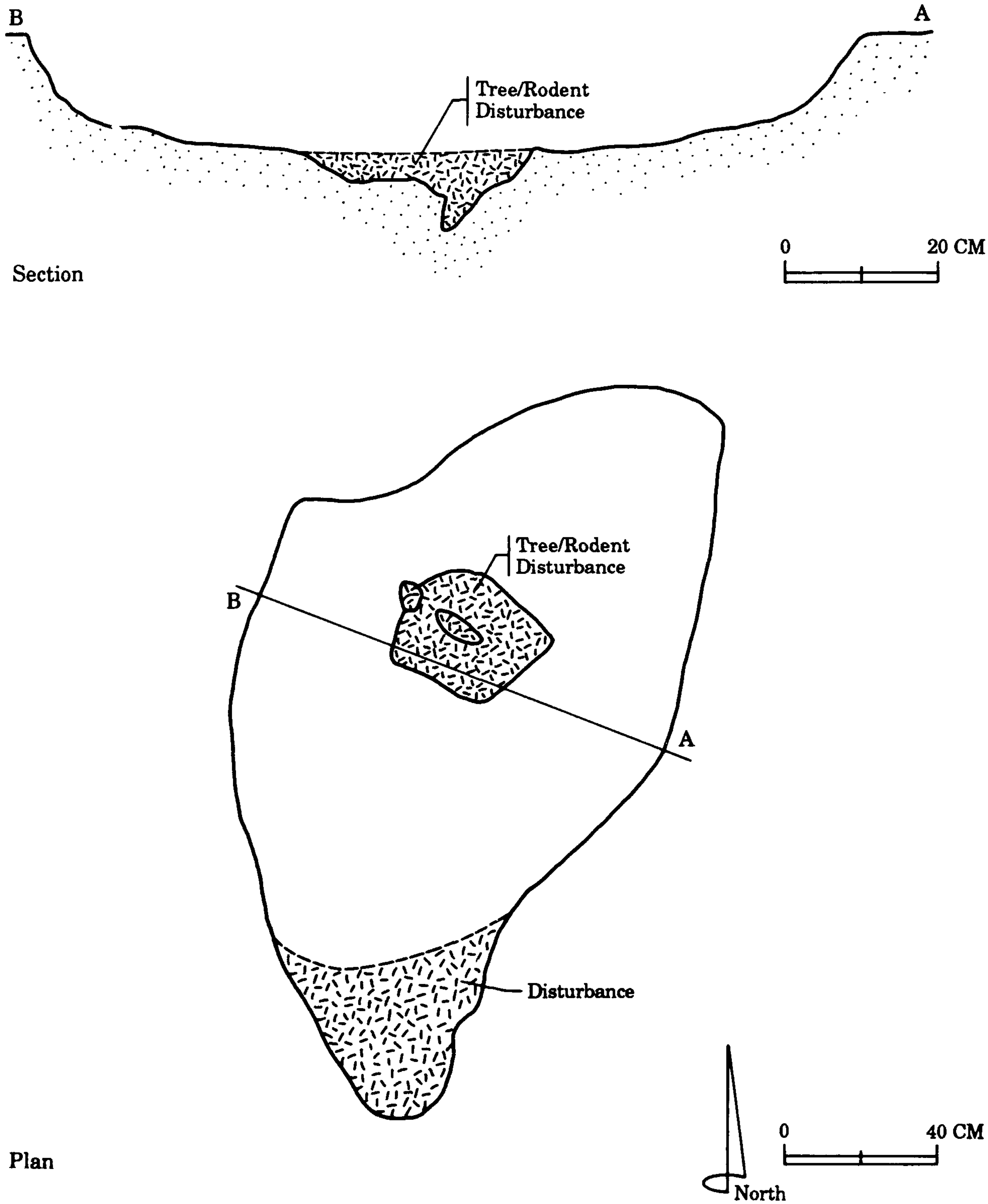


Figure 19
Plan and Section of Feature 4, 9Co46



References to earth ovens are rare in Southeastern ethnographies as Swanton's (1946:351-372) survey of food preparation techniques will testify, but a passage from Adair (1930:407-408) indicates that open baking in earth basins may have been a common practice prior to the introduction of European cooking utensils. The recovery of two pottery vessel fragments in the fill of Feature 4, moreover, might indicate that the pit was used as a boiling basin to cook vegetables or meat, or that large sherds were set down into the basin on the top of hot rocks to serve as parching platforms for nuts or seeds. A bulk flotation sample from the pit produced oak, pine, and elm wood charcoal and grape seed. In addition, a carbonized plum seed was recovered during screening. Swanton (1946:378) discusses several references regarding the drying of grapes, one of which was described by Speck (1909:45) who indicated that the Yuchi dried wild grapes on frames placed over a bed of embers until they turned to raisins. Plums were also dried and stored as prunes by various southeastern groups (Swanton 1946:373). A deer metatarsal and several fragments of unidentified large ungulate long bone were also recovered from the fill of the feature, suggesting the possibility that meat was either boiled or roasted over hot embers in the pit. Given the wide range of wild resources and domesticated crops that were exploited by groups occupying the site, it is quite likely that pits such as that represented by Feature 4 may have been the focus of any number of cooking functions over the period of their use.

Artifact density was relatively high in the pit fill, averaging 648.9 artifacts/m^3, and besides the larger sherds which exhibit Swift Creek and Connestee-like surface treatments, and are probably associated with the abandonment of the pit, numerous smaller sherds exhibit earlier Cartersville phase styles and probably represent incidental inclusions. Some of the macrobotanical specimens may also represent earlier contamination, but the much darker consistency of the pit fill suggests that much of the botanical sample was formed during the use of the pit. A more complete discussion of the cultural chronological association of the pit and its macrobotanical contents will be presented in later chapters.

Feature 6

Feature 6 is a shallow, nearly circular pit which extended only 4 centimeters below the midden-substrate contact in SU 2 (Figure 14). The pit measured 0.81 meters X 0.89 meters and the fill consisted of very dark brown (10YR 3/2), fine sandy loam. The dark coloration suggests that the pit probably originated in the upper stratum of the midden and generally equates in age with Feature 4. Very little macrobotanical material was recovered from the pit, 0.1 grams of wood charcoal and only 10 artifacts were recovered. However, the averaged artifact density of 346.8 artifacts/m^3 indicates that artifact density was relatively high in the pit . Not enough information was obtained from the feature to speculate about its original function.

Prepared Clay Hearths

Two prepared clay hearths of a style usually associated with house interiors were identified during testing. Both were severely impacted and truncated by plowing and only portions of the lower foundations of these features remained. The smoothed clay hearth basins normally associated with these kinds of features were totally destroyed by plowing and the house floors that normally extend from the edges of the clay aprons were also too high to be preserved. Each of the hearths will be described, in turn, below.

Feature 3

As described earlier, this feature was first recognized in EU 2 and was further exposed and defined in EU 4 (Figures 11 and 12). This hearth occupied a stratigraphically intermediate position in the feature complex exposed in these excavation units. It intruded the lower occupation midden (Feature 2) and was itself intruded and partially removed by a large, deep pit (Feature 4). The clay used to construct the hearth appeared similar in composition to the native substrate of the site and was probably derived from this source. However, the material had been reformed by mixing with water and had been poured into a foundation pit. The bright yellowish red coloration throughout (2.5YR4/8) also indicates that the hearth was initially subjected to a firing episode to harden the form upon completion of its construction. The remaining portion of the hearth measured 2.11 meters X 0.76 meters and it can be surmised that the original plan of the apron was slightly oval to circular. The foundation pit extended to a depth 3 to 5 centimeters below the plowzone contact.

Feature 27

This feature was identified along the northern wall of SU 3 (Figure 15). It was only partially exposed and measured 0.65 by 0.45(+) meters. The clay material used to construct this feature was similar to that described for Feature 3 and it was also heavily oxidized, probably as a result of initial firing and continued exposure to heat during its use. The hearth was not excavated, but was observed to have a stratigraphic position similar to Feature 3, as its foundation pit intruded a portion of the lower occupation midden (Feature 2).

Post Holes

Twenty-one features were identified as post holes in the testing exposures. These were grouped into four size classes based on the frequency distribution modes of plan area. Small post holes were the most numerous (n=17) and ranged between 90 and 462 cm^2 in area. Medium post holes, of which there were two, had respective areas of 810 and 868 cm^2. One medium large post hole (1326 cm^2) and one large post hole (2668 cm^2) rounded out the sample. Information on size class assignment, location, and dimensions for each post hole is contained in Table 3. Only two of these features were excavated, Features 5 and 7. Both were small and exhibited rounded and tapered cross-sections. The former extended to a depth of 8 centimeters below the plowzone contact, while the latter terminated at a depth of 13 centimeters below the midden substrate contact. The overall basis for distinguishing post holes from historic or non-cultural forms of disturbance was the character of the fill. All stains exhibiting a compact fill were identified as post holes, while those with loose fill were interpreted as rodent runs or root holes. All of the post holes contained dark yellowish brown (10YR3/4 and 4/4) fill similar to that of the undisturbed midden deposit. In combination with the presence of hearths, the post holes indicate that at least some of the occupation associated with the Butler Creek Site corresponded to habitation related functions. Although a concerted effort was made to define house patterns, a coherent pattern of post holes indicative of a house plan was not recognized.

ARTIFACT DESCRIPTIONS

Artifacts recovered during the test excavations consisted of only two primary categories, prehistoric ceramics and lithics. Lithic artifacts totalled 2,112 pieces of debitage and tools, while ceramic artifacts totalled 2,202 individual sherds. The results of analysis for each of these broad artifact categories will be discussed in turn below.

Prehistoric Ceramics

The recovered prehistoric ceramic collection from the Butler Creek Site testing project included 1,802 body sherds, 52 rim sherds, 7 tetrapods, 1 node, 327 eroded sherds, and 13 fragments of daub and fired clay. Decorative surface treatment was identified on 495 sherds, while 1,366 sherds were classified as plain. The surface treated sherds consisted of 474 examples of stamped decorations and 21 sherds with other surface treatments (3 brushed, 13 incised, 4 punctate, and 1 fabric impressed). Culture historic identifications could be confidently assigned to only 173 of the surface treated examples. The remaining decorated sherds were either too fragmentary or eroded to classify with any degree of assurance. Cartersville Check Stamped (42.77%) was the most abundant diagnostic ceramic identified at 9Co46. Lesser quantities of Cartersville Simple Stamped (32.37%), Swift Creek Complicated Stamped (15.03%), and Connestee-like Simple Stamped and Brushed (9.25%) were recovered. One sherd resembling Long Swamp Complicated Stamped was recovered from Feature 4.

The description and discussion to follow is broken into three parts. The first part will describe the various culture historic and analytic categories identified in the ceramic assemblage. This will be followed by a discussion of rim sherd morphologies and functional characteristics. The final part will then present a broader consideration of the culture historic position of the ceramic assemblage from the site within the Northwest Georgia regional sequence.

Analytical Ceramic Categories

Frequency data by provenience for the various generic categories of ceramic surface treatment are presented in Table 4, while frequencies of culture historic types by provenience can be consulted in Table 5. Each of the categories identified in the ceramic analysis are described and discussed below.

TABLE 4. Frequency Distribution of Ceramic Surface Treatment Categories.*

EU	Lev	Plain	CS	SS	ComS	UnidS	Incis	Punc	Brush	FI	Unid	Tot
1	2	27	1	-	-	7	-	-	-	-	-	35
	3	14	1	-	-	1	-	-	-	-	6	22
2	1	85	6	4	4	8	2	-	-	-	17	126
	2	92	5	2	8	21	-	-	-	-	-	128
	3	34	-	4	-	13	-	1	-	-	6	58
3	1	71	9	10	1	18	-	-	-	-	31	140
	2	197	17	10	9	30	1	2	-	-	39	305
	3	83	12	5	4	13	-	-	-	-	13	130
	4	18	1	-	1	2	-	-	-	-	-	22
4	1	150	4	3	10	28	2	-	-	-	56	253
	2	138	3	4	11	18	1	-	2	1	37	215
5	1	116	2	4	-	14	1	-	-	-	1	138
	2	55	5	3	4	15	-	-	-	-	23	105
	3	2	-	1	-	-	-	-	-	-	3	6
	4/5	4	-	-	-	-	-	-	-	-	-	4
	6	9	-	-	-	-	-	-	-	-	-	9
F2	1	6	-	1	1	3	1	-	-	-	3	15
	3	6	-	1	-	-	-	-	-	-	5	12
F4	1	66	4	4	11	12	1	-	1	-	20	119
	2	16	15	5	1	6	-	-	-	-	4	47
	3	29	-	3	2	12	1	-	-	-	7	54
F6	1	-	-	-	-	-	-	-	-	-	1	1
Totals		1,218	85	64	67	221	10	3	3	1	272	1,944

Key: Plain - Plainware; CS - Check Stamped; SS - Simple Stamped; ComS - Complicated Stamped; UnidS - Unidentified Stamped; Incis - Incised; Punc - Punctate; Brush - Brushed; FI - Finger Impressed; Unid - Unidentified

* Frequencies do not include ceramics recovered from shovel tests.

TABLE 5. Frequency Distribution of Culture Historic Ceramic Types, 9Co46.*

EU	Level	CCS	CSS	SCCS	ConnSS	ConnBR	LSCS	Totals
1	2	1	-	-	-	-	-	1
	3	1	-	-	-	-	-	1
2	1	6	4	2	-	-	-	12
	2	5	2	2	-	-	-	9
	3	-	4	-	-	-	-	4
3	1	9	10	-	-	-	-	19
	2	17	10	3	-	-	-	30
	3	12	5	2	-	-	-	19
	4	1	-	-	-	-	-	1
4	1	4	3	1	-	-	-	8
	2	3	2	4	2	2	-	13
5	1	2	4	-	-	-	-	6
	2	5	3	3	-	-	-	11
	3	-	1	-	-	-	-	1
F2	1	-	1	-	-	-	-	1
	3	-	2	-	-	-	-	2
F4	1	3	-	4	4	-	1	12
	2	-	-	-	5	-	-	5
	3	-	-	1	3	-	-	4
Totals		69	51	22	14	2	1	159

Key: CCS - Cartersville Check Stamped; CSS - Cartersville Simple Stamped; SCCS - Swift Creek Complicated Stamped; ConnBR - Connestee-like Brushed; ConnSS - Connestee Simple Stamped; LSCS - Long Swamp Complicated Stamped

* Frequencies do not include ceramics recovered from shovel tests.

Cartersville Series

The Cartersville ceramics from 9Co46 included 74 sherds classified as Cartersville Check Stamped (Figure 20) and 56 sherds classified as Cartersville Simple Stamped (Figure 21). This assemblage accounted for 75% of all diagnostic sherds, and suggests that the primary occupation of the site occurred during the Middle Woodland Period (Anderson 1985, 1988; Caldwell 1957; Garrow 1975; Wauchope 1966).

Cartersville Check Stamped (A-G),
Connestee-Like Brushed (H, I).

Figure 20
Cartersville Check Stamped and Connestee-Like Brushed, 9Co46

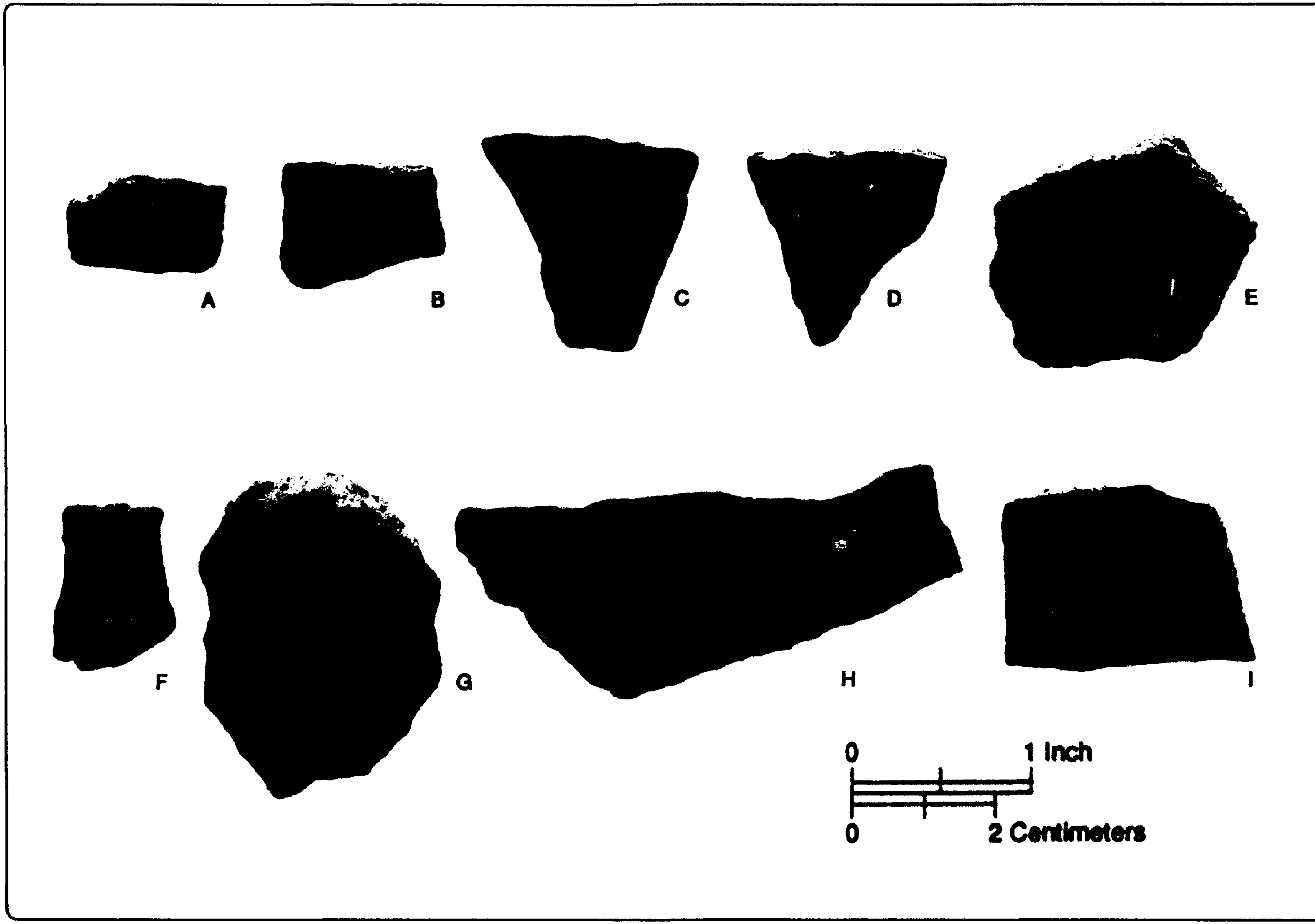
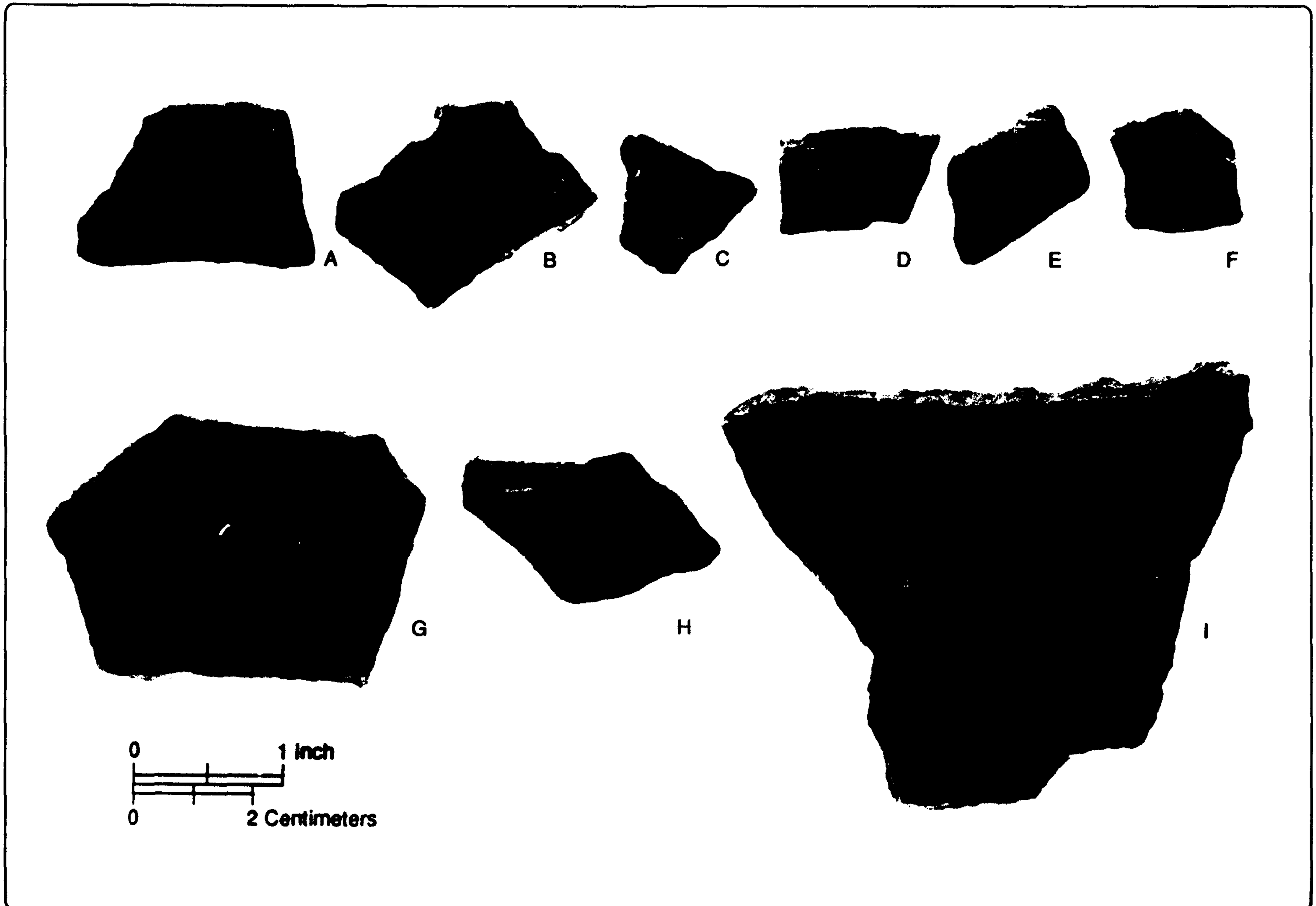


Figure 21
Cartersville and Connestee-Like Simple Stamped, 9Co46

Connestee-Like Simple Stamped (A, B, G-I),
Cartersville Simple Stamped (C-F).



Cartersville Check Stamped

The checked stamped ceramics included 69 body sherds, 2 simple rims, and 3 tetrapods. The predominant non-plastic inclusion in the paste of all 74 sherds was fine grit which was composed primarily of quartz sand. Abundant inclusions of biotite mica particles are also generally present. The majority of the sherds were reddish-brown in color. Four sherds had a linear check stamped surface treatment. The check stamped pottery from 9Co46 corresponds closely to Caldwell's (1957:168) original description of the Cartersville Check Stamped type.

Cartersville Simple Stamped

The Cartersville Simple Stamped sample consisted of 55 body sherds and 1 scalloped simple rim. Fifty-one of the sherds had substantial amounts of fine grit in their paste, while 5 sherds were tempered with mica and fine grit. The grit in all 56 sherds was predominantly quartz sand. Most of the sherds ranged from buff to reddish-brown in color. A few were dark brown. Caldwell's (1957:170) original description of Cartersville Simple Stamped is very similar to the simple stamped ceramics that are described here.

Connestee Series

Sixteen sherds from 9Co46 closely resemble the Connestee ceramic types that are described by Keel (1976), Anderson (1985, 1988), and Wood et al. (1986). The assemblage includes 14 Connestee-like Simple Stamped sherds (Figure 21) and 2 Connestee Brushed sherds (Figure 20). Seventy-five percent of the Connestee sherds were recovered from Feature 4. This pit feature also contained 5 Swift Creek Complicated sherds and 3 Cartersville Check Stamped sherds.

Connestee-like Simple Stamped

The Connestee-like sherds included 12 body sherds and 2 simple rims. The main non-plastic inclusion in the paste of 10 of these sherds (including both rims) was mica. Small amounts fine grit were also present. The paste of the remaining 2 sherds was mainly very fine quartz sand. All of these sherds exhibited a relatively dark brown coloration, though a few were reddish brown. Stamping was very finely executed. This was in marked contrast to the stamping on the Cartersville Simple Stamped sherds, which tended to be more variable in quality. Two sherds could be conjoined; one came from EU 4, Level 2, and it's mate was found in Feature 4, Level 3.

Connestee Brushed

Two Connestee Brushed body sherds were recovered from EU 4. Both sherds were very dark brown in color and the predominant aplastic inclusions were fine quartz sand grit and minute quantities of mica. These sherds represent classic examples of Keel's (1976:247-250) Connestee Brushed type description.

Swift Creek Complicated Stamped

Twenty-six Swift Creek Complicated Stamped sherds (Figures 22 and 23b) were identified in the sample. This collection included 23 body sherds, 1 simple rim, 1 scalloped simple rim, and 1 notched simple rim. The sherds were tempered with a variety of materials. Eighteen contained fine grit, 4 exhibited coarse sand, 3 contained both grit and grog, and 1 exhibited mica and grit. Surface treatments included 20 curvilinear motifs and 6 linear, or rectilinear, motifs. The carving and execution of the stamps was finely delicate and the lands were very shallow in relief. The curvilinear design motifs included snowshoes, or teardrops, and concentric circles. The linear (rectilinear) Swift Creek sherds (Figure 22a, b) were identified by David Hally of the University of Georgia, who has recently undertaken a reanalysis of the Swift Creek type site assemblage. These sherds contained coarse sand temper (mostly feldspar) and appear to represent portions of the same vessel. Two of these sherds came from EU 4, Level 2 and two were recovered from Levels 1 and 3 of Feature 4. The stamp motif appears to consist of a repeated herringbone design. Linear Swift Creek designs of this sort may very well represent a transitional stage of design development leading toward Napier and/or Woodstock, although Kelly and Smith (1975:48) report that linear complicated stamped examples were most prevalent in the lower levels of the Swift Creek mound. The examples with concentric circle motifs (Figure 23) were also somewhat unusual. This motif has often been considered transitional to Savannah Complicated Stamped (see Caldwell 1957:135-136), but some of the examples from the Butler Creek Site occur on vessels with diamond shaped zones of check stamping resembling typical Cartersville type checks. DePratter (personal communication 1990) has identified similar combinations of check stamping and complicated stamping on examples of Deptford Complicated Stamped on the Georgia coast. The association of these sherds with the rectilinear examples in Feature 4, suggests that all of these motifs may occur very late in Swift Creek development, but they are also clearly much earlier than Savannah Complicated Stamped. The snowshoe or teardrop motifs found in other locations at the site closely resemble the Swift Creek ceramics described by Anderson (1988:238-240), Wauchope (1966:56-57, 436), and Wood et al. (1986:77), and probably relate to early or middle Swift Creek.

Long Swamp Complicated Stamped

One body sherd (Figure 22) resembles Long Swamp Complicated Stamped as described by Wauchope (1966:69). The sherd was buff in color and it's paste contained fine grit non-plastic inclusions. The design motif was complex and contained both rectilinear and curvilinear elements. Alternatively, this sherd may very well represent a late Swift Creek variant.

Unidentified Check Stamped

Three unidentified check-stamped body sherds were found in Feature 4 (Figure 23). These sherds were decorated with large (8 millimeters x 14 millimeters), diamond-shaped checks organized in diamond-shaped zones. One

Figure 22
Swift Creek Complicated Stamped, 9Co46

Swift Creek Complicated Stamped (A-H),
Resembles *Long Swamp Complicated Stamped* (I).

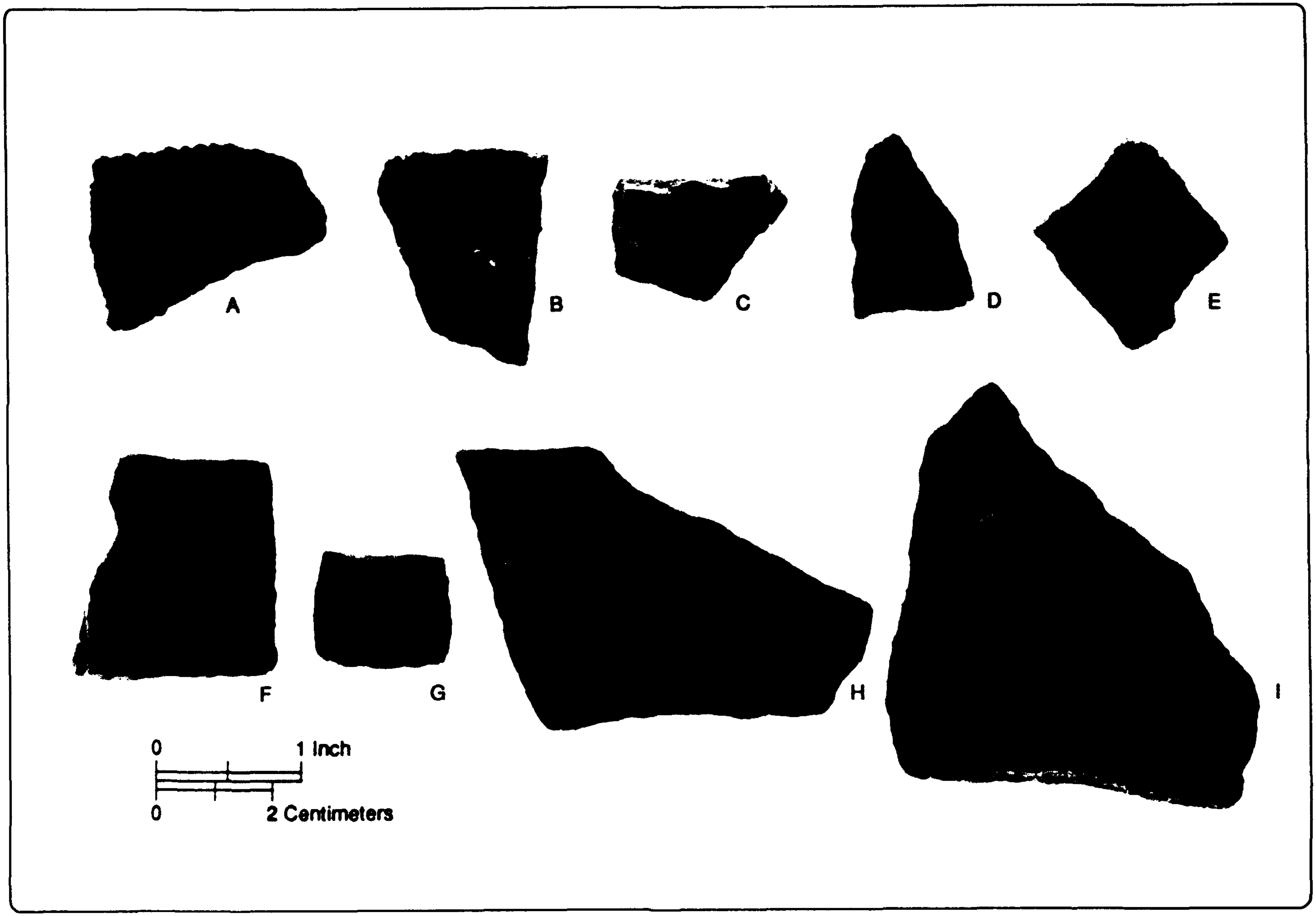
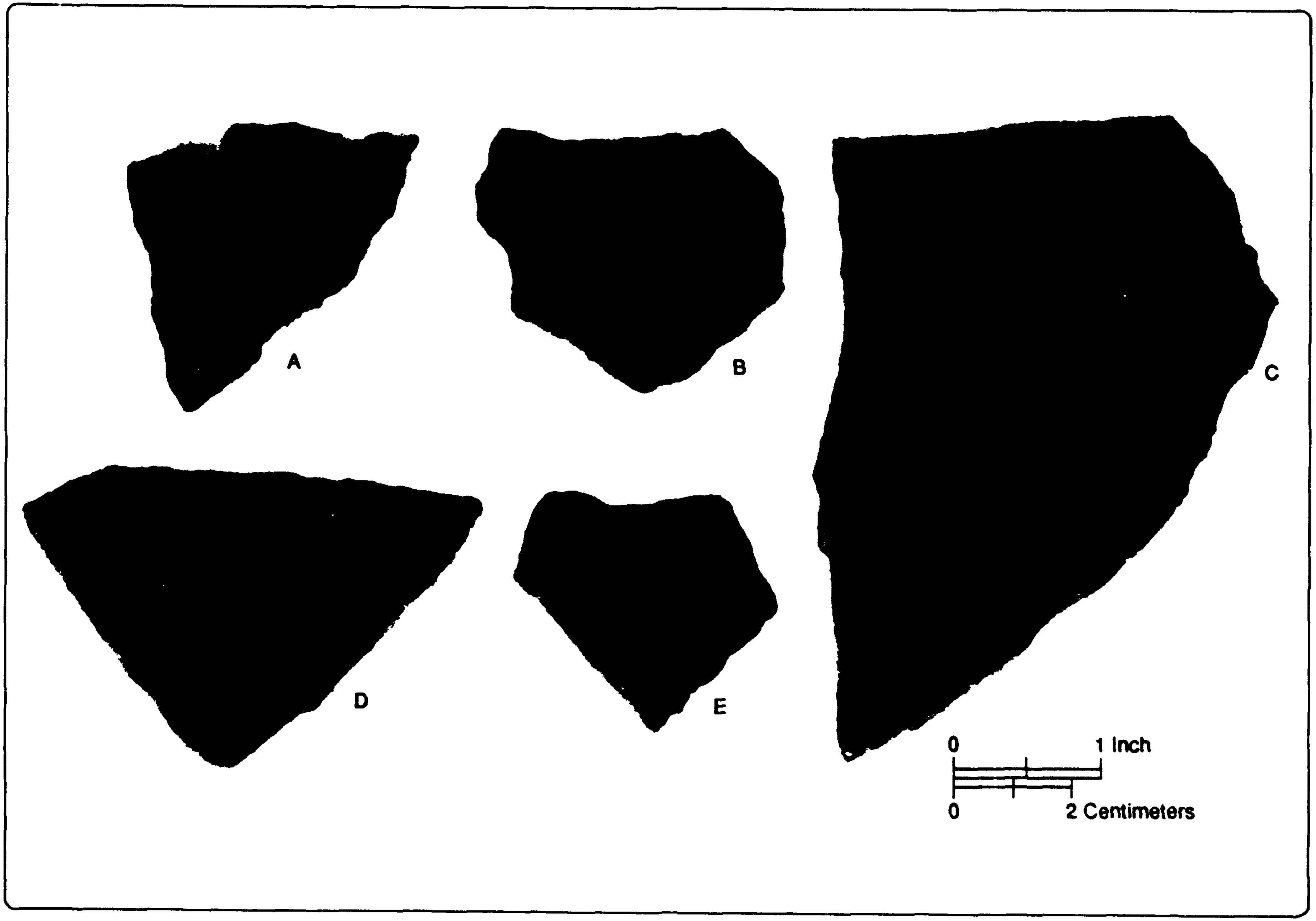


Figure 23
Unidentified Check Stamped and "Late Variant" Swift Creek Complicated Stamped, 9Co46

Unidentified Complicated Stamped (A), Swift Creek Complicated Stamped (B), Unidentified Check Stamped (C-E).



sherd also contained faint concentric circles and has been discussed above as a possible late variant of Swift Creek. The surface treatment on all three sherds, which probably derive from a single vessel, is characterized by faint stamping that was only visible in oblique lighting. The sherds were dark brown in color and their paste contained abundant mica and fine grit inclusions. These color and paste attributes are nearly identical to the Connestee Series sherds described earlier, and the mutual association of these different types in EU 4 and Feature 4 indicates that they are probably contemporary.

Unidentified Complicated Stamped

Forty-seven unidentified complicated stamped sherds were identified in the Butler Creek collection. This category included 45 body sherds, 1 simple rim, and 1 rolled rim. The main non-plastic inclusion in the paste of all 47 sherds was fine grit. Twenty-four sherds exhibited curvilinear complicated stamped motifs, 5 had rectilinear complicated stamped motifs, and 1 contained a combination of rectilinear and curvilinear elements. The nature of the motifs could not be determined on 17 examples. All of these examples, however, appear to be well within the paste and decorative range of variability noted for Swift Creek Complicated Stamped.

Unidentified Incised, Punctate, Brushed, and Fabric Impressed

Nineteen body sherds were included in this category, which included 13 incised sherds, 4 punctate sherds, 1 brushed sherd, and 1 fabric impressed sherd. All 19 of these unidentified decorated sherds were grit tempered.

Unidentified Stamped

Two hundred and fifty-three stamped sherds were too eroded to classify. This category included 9 simple rims and 244 body sherds. Ninety-three percent of the unidentified stamped sherds were tempered with fine grit. Additionally, 9 sherds contained coarse sand aplastic inclusions and 9 sherds were tempered with mica and fine grit.

Plainware

Thirteen hundred and sixty-six plain sherds were recovered from 9Co46, including 27 simple rims, 2 rolled rims, 2 scalloped simple rims, 1 unidentified rim, 4 tetrapods, 1 node, and 1,329 body sherds. The vast majority of the plainware was tempered with fine grit (92.09%). Most of this plainware can probably be characterized as Cartersville Plain, since the predominant tempering material is identical to that seen in the Cartersville Series decorated types.

Rim Sherd Analysis

Each rim sherd was classified according to three variables: (1) rim form, (2) surface treatment, and (3) a-plastic inclusions (temper). The data are summarized in Tables 6 and 7. Fifty-two rim sherds were identified in the ceramic assemblage. Of this total, 43 rims were classified as simple (Figure 21a), 4 rims were identified as scalloped simple, 1 was classed as notched simple (Figure 23a), 3 rolled rims were present, and 1 rim of unidentifiable morphology was identified. Sixty-one percent of the rim sherds were plain, while 36% exhibited stamped surface treatments. Stamping treatments included 2 checked stamped, 3 simple stamped, and 5 complicated stamped examples. The stamped impressions on 9 rims were too eroded to identify. Eighty-eight percent of the rim sherds contained grit as the main a-plastic inclusion in their paste, while 5 rims contained fine mica and grit inclusions and 1 rim contained coarse sand inclusions.

TABLE 6. Cross-tabulation of Rim Form by Surface Treatment, 9Co46.

Surface Treatment	Rim Form					
	Simple	Scalloped	Notched	Rolled	Unid	Totals
Check-Stamped	2					2
Simple-Stamped	2	1				3
Complicated Stamped	2	1	1	1		5
Unid. Stamped	9					9
Plain	27	2		2	1	32
Unidentifiable	1					1
Totals	43	4	1	3	1	52

TABLE 7. Cross-Tabulation of Rim Form by Temper, 9Co46.

A-Plastic Inclusions	Rim Form					
	Simple	Scalloped	Notched	Rolled	Unid	Totals
Grit	38	4		3	1	46
Mica & Grit	5					5
Coarse Sand			1			1
Totals	43	4	1	3	1	52

The vast majority of the rim sherds exhibited a simple form (82.69%). Sixty-two percent (N=27) of the simple rims were plain, and eight-two percent were tempered with fine grit (predominantly quartz sand). Simple rims with stamped surface treatments included 2 Cartersville Check Stamped sherds, 2 Connestee-like Simple Stamped sherds, and 1 Swift Creek Complicated Stamped sherd.

Four rim sherds had a scalloped simple rim form, including 1 Cartersville Simple Stamped sherd, 1 Swift Creek Complicated Stamped sherd, and 2 plain sherds. The rim sherd assemblage also included 3 rolled rims, one of which was unidentifiable complicated stamped and 2 of which were plain. Finally, 1 Swift Creek Complicated Stamped sherd exhibited a notched simple rim form. Anderson (1988:232) and Wood et al. (1986:339) find that notched and scalloped rims were common in Early Swift Creek ceramic assemblages. Later Swift Creek assemblages were characterized by a decline in the incidence of notched and scalloped rim forms, and a concomitant increase in folded rims. The presence of scalloped and notched Swift Creek series rims in the 9Co46 ceramic assemblage , and the corresponding absence of folded rims, suggests that much of the Swift Creek material at Butler Creek is probably associated with the earlier portion of the Swift Creek Phase.

Interpretation of the Butler Creek Ceramic Assemblage

The majority of the recovered ceramic assemblage from the Butler Creek Site is assignable to what Caldwell (1957:305) referred to as the Cartersville Ceramic Period. Approximately 75.5 percent (n=120) of the diagnostic pottery recovered represents either Cartersville Check Stamped (n=69) or Cartersville Simple Stamped (n=51). The ceramic complex associated with the period was identified in the upper levels of the Kellog Site (9Ck62) and in a stratigraphic test pit at 9Br73 on Stamp Creek and was characterized by the initial appearance of Cartersville Simple Stamped and the continuation of Cartersville Check Stamped from the Post-Kellog Period (see Caldwell 1957 for a discussion of period and focus terminology, his use of period is roughly equivalent to the modern usage of phase). Some sites exhibiting this complex also contained Dunlap Fabric Impressed, but Caldwell was hesitant to include this type in the definition of the Cartersville Period because clear stratigraphic associations of contemporaneity had not been demonstrated in the Allatoona Reservoir, or elsewhere. Later investigations have confirmed that Dunlap Fabric Impressed predates the Cartersville Period (Anderson 1985, 1988; Garrow 1975), and its absence at the Butler Creek Site provides additional support for this pattern.

Another important characteristic of the Butler Creek ceramic assemblage is the presence of Swift Creek Complicated Stamped, which comprises ca. 13.8 percent (n=22) of the diagnostic sherds recovered during testing. Caldwell (1957:312) noted that a "few" Cartersville period sites in the Allatoona Reservoir, particularly where Cartersville Simple Stamped was well represented, contained a variety of Swift Creek Complicated Stamped which he characterized as belonging to the "early range" of the Swift Creek seriation as it had been defined in central Georgia (see Kelly and Smith 1975). Archeological evidence concerning the character of occupations producing Swift Creek ceramics in the reservoir, however, was very scant and Caldwell therefore avoided the temptation to speculate further about the temporal relationships of these ceramic types, or to devise a ceramic period to bridge the gap between the Cartersville and Woodstock Periods. In fact, it was Caldwell's (1957:315-316) position that there was probably a hiatus between these two periods, as the entire range of middle Swift Creek design evolution was apparently absent from the reservoir. This conclusion, of course, would suggest that Caldwell regarded the early Swift Creek variant as a possible terminal Cartersville period type, although proper application of the taxonomic system he had devised for the earlier periods would dictate that he identify Cartersville period complexes with Swift Creek Complicated Stamped as a Post-Cartersville phenomenon.

The chronological and associational position of Swift Creek Complicated Stamped pottery in northern Georgia has never been sufficiently resolved. Investigations in the Richard B. Russell Multiple Resource Area (Russell Reservoir) on the Savannah River have provided an important comparative data set for the general region. Two sites, in particular, are of interest to this discussion, Simpson's Field (Wood et al. 1986:49-107) and Rucker's Bottom (Anderson and Schuldenrein 1985:340-373). At Simpson's Field a relatively large assemblage of Swift Creek (n=298) and Napier (n=59) Complicated Stamped ceramics was recovered in the absence of any "Cartersville" types, while at Rucker's Bottom over 2,000 sherds (n=2,237) assigned to the Cartersville Period or series (i.e. plain, check stamped, and simple stamped) were recovered in assumed temporal association with a small number (n=74) of Swift Creek and Napier Complicated Stamped. Anderson (Anderson and Joseph 1988:245-246) argues that the ceramic patterns manifested at these two sites quite plausibly indicates the geographic overlap of two distinct cultural entities, one based in central and southwest Georgia which manufactured Swift Creek ceramics and one based in the Piedmont and Appalachian Summit area which produced Cartersville and Connestee ceramics. Alternatively, he suggests that the low incidence of Swift Creek in the northeast Georgia Piedmont may indicate that these ceramics represented special ceremonial pottery traded into the area and used by local populations that manufactured Cartersville and Connestee ceramics.

It is just as feasible, however, that the patterns at Russell Reservoir represent a continuum of local ceramic development. Some of the Swift Creek examples from Simpson's Field exhibit noticeably "late" (see Kelly and Smith 1975:38-55) seriational characteristics such as folded rims, plain collars below the rim, and combinations of rectilinear and curvilinear motifs. As such, the absence of Cartersville and Connestee ceramics at this site could be easily explained as a natural replacement within a locally evolving ceramic sequence. The co-occurrence of Napier Complicated Stamped, which is generally viewed as the antecedent of the early Mississippian Woodstock and Etowah styles, with this late Swift Creek assemblage also supports a continuum model. Moreover, none of the ceramic types described for the early Mississippian ceramic complexes in the Russell Reservoir contradict such a development (see Rudolph and Hally 1985:261-280). Simple stamped types are absent and the primary representatives of the complex include Etowah and Savannah complicated stamped (9%), Savannah Check Stamped (8%), plain (67%), and plain burnished (11%). Plain and plain burnished were also dominant types within the Simpson's Field assemblage. Although the presence of check stamping may seem somewhat contradictory, it should be noted that Savannah Check Stamped represents a very different ceramic tradition than Cartersville Check Stamped, exhibiting Mississippian vessel forms and generally being heavily burnished on the interior (Caldwell and McCann 1941).

The Butler Creek assemblage has a direct bearing on this issue and it is quite possible that it represents a relatively pure Middle-to-Late Woodland transitional complex in which early Swift Creek Complicated Stamped was added to a Cartersville period complex of check and simple stamped. Several lines of evidence support this contention. First, no stratigraphic break between these three types can be demonstrated. Complicated stamped ceramics occur in association with simple stamped sherds in the lowest levels of the midden deposit excavated in EU 2 (see Feature 2, Table 4). Moreover, complicated stamping is actually the second most frequent surface treatment at the site, occurring on 28.8 percent of the sherds with identifiable surface treatments. In addition, there is virtually no difference in the paste characteristics between the Swift Creek material and the Cartersville series sherds, suggesting that they were both locally manufactured. Finally, one sherd (Figure 23c) described earlier had both Swift Creek and zoned check stamped motifs on it, suggesting partial contemporaneity. Much more stratigraphic and chronological data would need to be generated from the site before this association could be confirmed, but all of the preconditions for the definition of such a transitional phase are met at Butler Creek

Feature 4 contains a somewhat different looking assemblage and appears to represent a later manifestation of Swift Creek than that extensively documented across the site. The stratigraphic position of the pit has been shown to be relatively late in the site occupational sequence. It intrudes the lower levels of the midden and also a prepared clay hearth (Feature 3). A number of large sherds were recovered from the feature that exhibited relatively crisp edges, a characteristic probably indicating that they were deposited at the time the pit was abandoned. These sherds exhibited a darker, finer paste than typical of the "Cartersville" series at the site, and exhibited both simple stamped and Swift Creek surface treatments. The simple stamped material closely resembles Connestee series material from the Appalachian Summit area of North Carolina (Keel 1976:225), and may be related to the Late Woodland simple stamped horizon posited by Anderson (1985:41-43, Anderson and Joseph 1988:246-247) for the Piedmont and Coastal Plain of South Carolina. An eventual replacement of check stamping with simple stamping has also been posited for sites throughout northern Georgia at the end of the Cartersville (ceramic) Period (Caldwell et al. 1952:320; Wauchope 1966:226; Wood 1981:29).

The paste of the Swift Creek material from the pit resembles that of the Connestee sherds, further arguing for their contemporaneity. The complicated stamp designs on these examples are also unusual for the overall assemblage of Swift Creek at the site. Two of the sherds (Figure 22a, b) exhibit herring bone or chevron motifs indicative of advanced Swift Creek ceramic development that may presage the development of rectilinear styles such as Woodstock or Etowah. One of the sherds (Figure 22h) contained a complex and overstamped design similar to that of Long Swamp Complicated Stamped (Wauchope 1966:69-70). Two of the sherds (Figure 23b, d) exhibited concentric circle designs and may correspond to Caldwell's (1957:135) late variant of Swift Creek which he assigns to the Woodstock ceramic period. One of these sherds also had a diamond shaped zone of diamond checks (Figure 23d), which probably derived from the same vessel as two other large sherds in the collection from the pit (Figure 23c, e) that contained similar diamond shaped zones of diamond checks identified as Cartersville Check Stamped in Table 5. These examples may very well anticipate the development of Woodstock design motifs. A Radiocarbon date of 970 ± 70 B.P. with a corrected mean of A.D. 1025 was obtained from wood charcoal in the pit, further attesting to the relative lateness of the feature.

Prehistoric Lithics

The recovered Butler Creek lithic assemblage consisted of 2,022 pieces of chipped stone debitage, 82 chipped stone tools and manufacturing discards, 2 quartzite cobble tools, and 1 shaped schist slab. Five categories of lithic raw material were recognized in the chipped stone analysis. These included: 1) Ridge and Valley chert, 2) vein quartz, 3) granular quartz, 4) quartz crystal, and 5) chlorite schist. The chipped stone tools and manufacturing discards were predominantly made from chert (n=67 or 81.7%), while 9.8 percent (n=8) were composed of granular quartz and 8.5 percent (n=7) consisted of vein quartz. The chipped stone debitage, however reflected a much more even utilization pattern between chert and the various subgroups of quartz. Chert comprised 49.1 percent (n=991) of the debitage compared to a 50.8 percent (n=1,027) representation for quartz. The remaining 4 pieces of debitage were composed of chlorite schist. The various subgroupings of quartz and the schists were almost certainly obtained from local sources. Ledbetter et al. (1986:IV-120 to -130) have documented a large number of quartz outcrops and quarry sites within the Allatoona Lake, especially in the Proctor's Bend area of the Etowah Valley and in the middle reaches of Allatoona Creek within 4 to 5 km of the Butler Creek Site . No sources of Ridge and Valley chert have been located within the reservoir (Goad 1979), but the unusual abundance of this raw material at the Butler Creek Site suggests that sources may have been very near. According to Ledbetter et al. (1986:IV-121) only 28 percent of the entire chipped stone assemblage collected during the SAS survey was composed of Ridge and Valley chert. This percentage stands in stark contrast 50 percent contribution made by chert in the Butler Creek assemblage. The chert assemblage from the site is dominated by very hard, light to dark gray specimens that correspond closely to Goad's (1979:14) descriptions of the Knox Group of Ridge and Valley cherts, sources of which are abundant in nearby Floyd County.

Chipped Stone

Debitage

The chipped stone debitage analysis, which was applied in total only to the excavation unit and feature context material, broke the assemblage down into four raw material categories (ie. Ridge and Valley chert, quartz, quartz crystal, and chlorite schist) and into six morphological categories. These latter categories were: (1) primary flakes, (2) secondary flakes, (3) interior flakes, (4) thinning flakes, (5) unidentifiable flakes, and (6) shatter. The first three categories correspond to flakes derived from core types other than bifaces, as is evidenced by relatively perpendicular striking platform angles and flat or non-curved longitudinal cross-sections. The categories are internally differentiated by the degree of cortex present on their dorsal surfaces. Cortex covers greater than 75 percent of the dorsal surface of primary flakes, while secondary flakes contain between 25 and 75 percent cortex and interior flakes exhibit less than 25 percent cortex. Much of the chert flakes placed in these categories possessed attributes common to bipolar reduction assemblages such as inverted cones of percussion, double cones, and faceting at each termination point or striking platform (see Binford and Quimby 1963; Kobayashi 1973). Several small, tabular cores were also identified in the assemblage that exhibit evidence of having been reduced with a bipolar technique to produce flakes. Thinning flakes were identified as those flakes with noticeably acute striking platform angles, curved longitudinal sections, and frequent well developed lipping on the neck of the striking platform. Flakes with this morphology are commonly derived from biface thinning (House and Ballenger 1976:89-90; Newcomer 1971) and represent wastage. The category "shatter" was applied to any angular piece of lithic material that did not exhibit the typical attributes of percussion flaking. Finally, an unidentifiable flake category was applied to all debitage that appeared to possess the attributes of a flake, but could not be further categorized due to breakage. Appendix III tabulates debitage data for all excavation units and features by level.

Table 8 presents a breakdown of this information for all excavation units (n=1,647). Thinning flakes dominate all four raw material categories and comprise ca 71.7 percent of the entire assemblage. The frequencies on non-thinning flakes are nearly equal for chert and quartz, but this may mask some very real differences that are reflected in the relative proportions of flake categories. The chert sample contains much higher proportions of primary and secondary flakes, a pattern which would be expected if bipolar flake production was being undertaken on small cobbles. The quartz sample, however, is comprised primarily of interior flakes which probably indicates other flake production strategies involving directional cores. The overall lithic reduction system at Butler Creek, then, appears to consist of three major elements: (1) a chert bi-polar flake producing subsystem directed toward the exploitation of small cobbles, (2) a quartz flake producing subsystem involving the reduction of directional cores using traditional percussion techniques, and (3) a bifacial reduction system to manufacture bifacial tools.

The tool and core data from the site substantiate these inferences. Quartz cores are represented only by directional fragments and a single flake blank derived from such a core. The chert cores, by contrast are exclusively of the tabular, bi-polar type. Both raw materials were utilized to produce bifacial tools, and the abundance of thinning flakes in the debitage assemblage indicates a biface-dominated industry. This too is substantiated by the chipped stone tool assemblage. Of the 75 non-core items, 70 represent whole or fragmentary projectile points, projectile point preforms, or bifacial discoids. The remainder consist of expediently used and/or modified flake tools.

TABLE 8. Breakdown of Debitage Categories by Raw Material for All Test Units, 9Co46.

Raw Material	Prm. Flake	Sec. Flake	Int. Flake	Thn. Flake	Und. Flake	Shatter	Totals
Chert	55	45	49	598	3	44	794
Quartz	9	21	134	513	3	90	770
Quartz Crystal	0	1	5	69	3	4	82
Chlorite Schist	0	0	0	1	0	0	1
Totals	64	67	188	1,181	9	138	1,647

Cores

Seven cores or core fragments were identified in the Butler Creek testing assemblage (Table 9). These consisted of one quartz flake blank, 3 quartz directional core fragments, and 3 tabular Ridge and Valley chert bi-polar cores (see Figure 24). Flake blanks are defined as large, thick flakes removed from directional cores which served as blanks for tool manufacture. The example recovered from Butler Creek was relatively large, measuring 51 by 41 by 17 millimeters, and exhibited a perpendicular striking platform angle indicative of removal from a non-biface core type such as a directional core. Directional cores are formed from a fortuitous flake producing strategy in which the angular characteristics of an unaltered piece of raw material are used to set up locations of optimal flake detachment. During the process of reduction, flake scars from earlier flake removals can be used to provide more optimal opportunities for flake detachment until the core is reduced below the range to produce desired flake sizes. Flake scars can originate from a number of directions on the core face and exhausted cores of this type generally assume a globular shape when discarded whole. The three, tabular bi-polar cores were relatively small, averaging 20 by 39 by 18 millimeters in size.

Discoids

Four bifacially flaked tools with circular to subcircular outlines were identified as discoids (Figure 24). The recovered sample averaged 38.6 millimeters in length, 33.3 millimeters in width, and 11.3 millimeters in thickness (Table 10). Three were made of granular quartz and one of Ridge and Valley chert. Mean edge angles ranged between 43° and 59°, a range which Wilmsen (1970:70) would place within his general functional category appropriate for skinning, hide scraping, plant fiber shredding, and heavy duty bone, wood, and horn cutting. The absence of a haft furthermore suggests that these tools were hand-held during use.

TABLE 9. Core Data, 9Co46.*

Bag No.	STP	EU	Lev	Core Type	Raw Material	Length	Width	Thickness
137		5	1	Flake Blank	Gran Qtz	51.0	41.0	17.5
128		3	2	Directional	Vein Quartz	56.0	33.0	34.0
131		3	3	Directional	Vein Quartz	47.0	21.0	20.0
128		3	2	Directional	Vein Quartz	28.0	25.5	17.0
139		5	2	Bipolar	Chert	25.0	38.0	16.0
61	61			Bipolar	Chert	18.0	36.0	25.0
121		1	2	Bipolar	Chert	17.0	44.0	12.0

* Metric data reported in millimeters.

TABLE 10. Metric, Provenience, and Categorical Data on Discoids, 9Co46.*

Bag No.	EU	Lev	Raw Material Type	Length	Width	Thickness	Edge Angle
121	1	2	Granular Quartz	46.0	34.0	13.5	59.0°
128	3	2	Granular Quartz	37.0	34.0	9.5	43.0°
121	1	2	Granular Quartz	37.5	34.0	12.0	56.0°
137	5	1	Chert	34.0	31.0	10.0	56.0°

* Metric data reported in millimeters.

Flake Tools

This category includes all non-bifacially retouched items with evidence of utilization and/or unifacial retouch and shaping (Figure 24). The recovered collection from the Butler Creek Site included 4 utilized flakes and a denticulate (Table 11). The utilized flakes were unretouched and exhibited small unifacial nibbling scars along the sharper flake margins. One specimen (Bag No. 136) represented the reutilization of a biface fragment. Edge angles ranged between 26° and 55°, indicating that these specimens performed both specialized cutting functions and more general purpose functions according to the Wilmsen (1970:70) edge angle classification. The denticulate was made by the removal of 2 large percussion flakes to produce a deeply notched or denticulated edge consisting of three rounded teeth. Semenov (1964:151-153) suggests that such edges were optimal for sawing bone or wood. Edges of this sort might also have been enlisted in shredding fibers. The large size and durability of the specimen indicates that it was used in some heavy-duty capacity.

Preforms (A-F), Discoids (G-J), Utilized Flakes (K-L), Denticaulate (M),Tabular Bi-polar Cores (N-P), Shaped Schist Slab (Q), Cobble Hammerstone (R).

Figure 24
Chipped Stone and Other Stone Tools, 9Co46

TABLE 11. Metric, Provenience, and Categorical Data on Flake Tools, 9Co46.*

Bag	EU	Lev	Tool Description	Raw Material	Length	Width	Thickness	Edge °
128	3	2	Utilized Flake	Chert	35.0	14.5	7.5	55.0°
142	4	2	Utilized Flake	Chert	23.0	13.0	4.5	40.0°
136	4	2	Utilized Flake	Chert	46.0	26.0	7.0	26.0°
136	4	2	Utilized Flake	Vein Quartz	36.0	36.5	15.0	53.0°
128	3	2	Denticulate	Granular Quartz	43.0	27.0	18.0	61.0°

* Metric data reported in millimeters.

Projectile Point Preforms

Fifteen bifaces and biface fragments appeared to represent rejects and breakage from aborted attempts to manufacture projectile points through bifacial reduction, and were categorized as preforms (Figure 24). One specimen was made of vein quartz, while all others were composed of Ridge and Valley chert (Table 12). Cross-sections perpendicular to the medial axes of the more complete specimens ranged from bi-convex to plano-convex, the latter shape being the more prevalent. As is indicated in Table 12, the preform sample is primarily represented by blade fragments that originated during the later stages of bifacial trimming and shaping. Three whole specimens were identified, however, that appear to have been rejected early in the reduction process due to step fracturing along the edges or to situations where the removal of large masses of material further out on the blade was impeded by mistakes made in trimming the lateral margins. The predominant shapes of the blade outlines of the preforms were ovoid and ovate.

TABLE 12. Metric, Provenience, and Categorical Data on Projectile Point Preforms, 9Co46.*

Bag	STP	EU	Fea	Lev	Raw Mat.	Length	Width	Thick.	Fragment Type
126		3		1	Chert	37.5	15.0	11.0	Lateral Blade
128		3		2	Chert	20.5	25.0	10.0	Lateral Blade
136		4		2	Chert	18.0	11.5	10.0	Lateral Blade
140		4		1	Chert	26.0	14.5	9.0	Lateral Blade
126		3		1	Chert	23.0	18.0	8.0	Lateral Blade
123		2		1	Vein Qtz	19.0	23.5	11.0	Basal
123		2		1	Chert	14.0	17.5	6.0	Basal
123		2		1	Chert	32.0	24.5	12.0	Upper Blade
128		3		2	Chert	18.0	22.0	9.0	Upper Blade

Table 12. (Continued).

Bag	STP	EU	Fea	Lev	Raw Mat.	Length	Width	Thick.	Fragment Type
142		4		2	Chert	11.0	17.0	7.0	Upper Blade
123		2		1	Chert	38.0	27.0	13.0	Lower Blade
140		4		1	Chert	21.0	23.0	9.0	Lower Blade
23	23				Chert	39.0	16.0	8.0	Whole
137		5		1	Chert	45.0	21.0	13.5	Whole, Step Base
151			4	2	Chert	31.0	12.5	8.0	Whole

* Metric data reported in millimeters.

Projectile Points

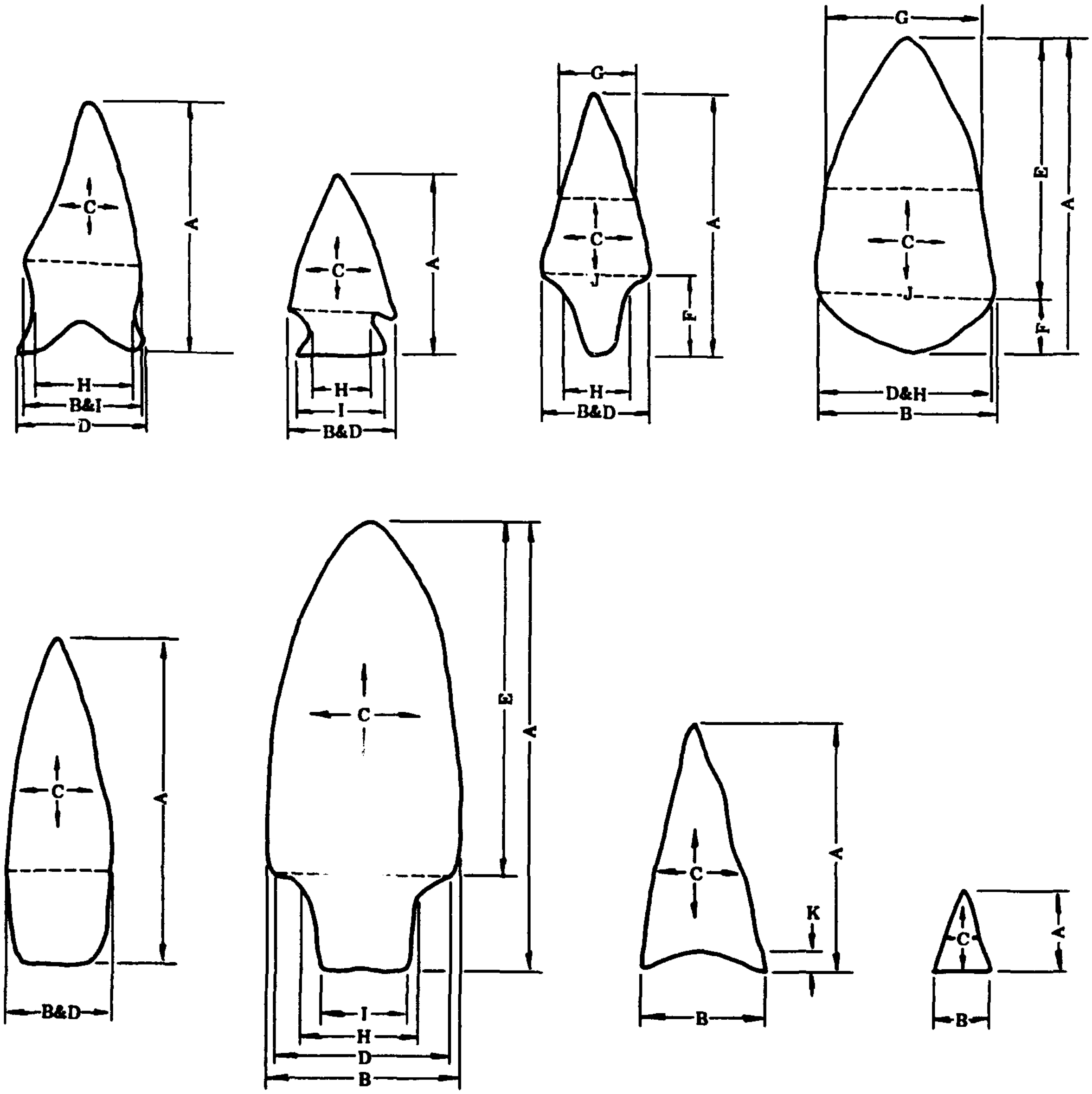
Projectile points represent the most numerous category of chipped stone tools recovered from the Butler Creek Site (9Co46). Forty whole or fragmentary specimens could be assigned to culture historic typological categories, while 11 additional specimens were too fragmentary for these purposes. Data recorded for the unidentifiable fragments are listed in Table 13, while categorical and metric data for the diagnostic group are presented in Appendix IV. As was true of the preforms, the projectile points are overwhelmingly represented by chert. Chert comprises 90 percent (n=36) of the diagnostic sample and 91 percent (n=10) of the unidentifiable fragments. Descriptions and summary data for each diagnostic culture historic type are discussed below. A graphic illustration of the manner in which metric attributes were measured on the projectile point assemblage is presented in Figure 25.

TABLE 13. Metric, Provenience, and Categorical Data on Unidentifiable Projectile Point Fragments, 9Co46.*

Bag	EU	Lev	Diagnostic Type	Raw Mat.	Length	Width	Thick.	Frag. Type
126	3	1	Unidentified	Chert	15.5	11.5	6.0	Tip
128	3	2	Unidentified	Chert	18.0	8.0	6.5	Tip
126	3	1	Unidentified	Chert	15.5	10.0	5.0	Tip
128	3	2	Unidentified	Gran Qtz	23.0	17.0	8.0	Upper Blade
145	5	5	Unidentified	Chert	29.0	17.0	7.0	Upper Blade
136	4	2	Unidentified	Chert	21.0	18.0	5.0	Upper Blade
139	5	2	Unidentified	Chert	15.5	14.5	5.5	Upper Blade
128	3	2	Unidentified	Chert	15.0	14.0	8.0	Upper Blade
128	3	2	Unidentified	Chert	26.0	16.0	7.5	Mid-section
128	3	2	Coosa Notched ?	Chert	13.0	14.0	6.0	Base
121	1	2	Bradley Spike ?	Chert	16.0	13.0	6.0	Base

*Metric data reported in millimeters.

Figure 25
Projectile Point Dimensional Measurements



A Maximum Length
B Maximum Width
C Maximum Thickness
D Shoulder Width
E Blade Length
F Haft Element Length
G Maximum Width Halfway Up Blade
H Distal Haft Element Width
I Proximal Haft Element Width
J Maximum Thickness at the Blade/Haft Intersection
K Basal Concavity Depth

Camp Creek

Two small to medium sized triangular projectile points from the collection are similar in overall morphology to the Camp Creek type (Cambron and Hulse 1975:22; Kneberg 1956:23) identified originally at the Camp Creek Site in Tennessee. Justice (1987:229) includes the type in his Hamilton Incurvate Cluster along with a number of geographically proximate triangular types such as the Caraway, Clarksville, and Roanoke types in the North Carolina Piedmont (Coe 1964:49-50, 110, 112), the Connestee and Pisgah types from the Appalachian Summit area of North Carolina (Keel 1976:131-133), and the Haywood type (Chapman 1973:83) from Ice House Bottom, Tennessee. This cluster is purportedly associated with Late Woodland manifestations dating between about A.D. 500 and 1000. Although Justice identifies incurvate blades as a salient characteristic of the cluster, most of the types he lists within it more commonly exhibit straight to slightly excurvate lateral margins. The Camp Creek point is one such type. The examples from Butler Creek had straight margins and straight to slightly excurvate bases. The upper blades of both specimens were broken off and consequently total length measurements could not be made. Maximum width at the bases ranged from 15 to 19 millimeters and thickness ranged from 3.5 to 5.0 millimeters respectively. Both were manufactured from a hard, light gray chert probably derived from a deposit closely related to the Copper Ridge formation of the Knox Group. This type may correspond to the isosceles triangular points Caldwell (1957) reports as a common element of the Kellog, post-Kellog, and Cartersville foci in the Allatoona Reservoir.

Coosa

Three small, short stemmed specimens were identified as Coosa points (Figure 26). This type was first identified as a result of the Weiss Reservoir investigations on the Coosa River (DeJarnette et al. 1963). Cambron and Hulse (1975:29) indicate that examples of this point type have been recovered from the Camp Creek Site in Tennessee as well and that it is associated with Middle Woodland manifestations. Metric summary data for the three Butler Creek specimens are presented in Table 14. The coefficient of variation indicates that the sample from the site is relatively homogeneous in size, the greatest amount of variation being associated with use and maintenance variables (i.e. blade length) and manufacturing contingencies (i.e. width). The blades are slightly outcurved and the stems are slightly contracting toward the base. The small size and irregular shape of the points suggests that they may represent late life stage Coosa Notched points that have been reduced and extensively repaired. All three examples are manufactured from hard, light to dark gray and pink chert resembling descriptions of the Knox Group.

Madison Small Triangular (A-C), Camp Creek (D), Copena (E-F), Coosa Notched (G-J, L-Y), Coosa (K), Jacks Reef Corner Notched (Z), Gary Stemmed (Aa-Bb), Pickwick (Cc-Dd).

Figure 26
Projectile Points, 9Co46

TABLE 14. Metric Data for Coosa Points, 9Co46*.

Measurement	n	Mean	Standard Dev.	Coeff. of Var.
Length	3	19.33	±1.53	7.90
Width	3	16.83	±1.89	11.25
Thickness	3	6.00	±1.80	30.05
Shoulder Width	3	16.83	±1.89	11.25
Blade Length	3	15.50	±3.91	25.19
Dist. Haft Width	3	11.00	±1.32	12.03
Pro. Haft Width	3	10.83	±1.61	14.84

* Metric data reported in millimeters.

Coosa Notched

By far the most abundant type represented in the Butler Creek assemblage is the Coosa Notched point (Figure 26). Again, this type was originally identified as a consequence of the Weiss Reservoir investigations on the Coosa River in Alabama (DeJarnette et al. 1963) and is considered to occupy a coeval chronological position with the Coosa point according to Cambron and Hulse (1975:30). Although not specifically mentioned by him, this type may be a member of Justice's (1987:211-212) Bakers Creek Cluster, which includes a number of expanding stemmed, broadly side-notched points from Tennessee, Georgia, Kentucky, Mississippi, and Louisiana. The Bakers Creek Cluster is assigned a middle and terminal Middle Woodland association, which would fit well with the transitional Cartersville-Swift Creek ceramics that appear to dominate the Butler Creek assemblage as well. Metric summary data for the Coosa Notched assemblage are presented in Table 15. The coefficient of variation for each of the measurements is relatively low, indicating a homogeneous collection of points. The greatest variation, again, is due to use life and maintenance variability (i.e. length, blade length, and thickness), while other characteristics, most notably those of the haft, which would correspond more closely with a shared style template, are less variable. Bases are typically excurvate, although a small minority exhibits flat bases as a result of step breakage at the proximal end of the haft. Blades were generally excurvate in outline, although a number of the points were characterized by asymmetrical sharpening patterns on opposing lateral margins. The side-notches were generally broad and shallow, extending an average of only 3.5 millimeters in from the shoulder. All 24 examples from the site were manufactured out of Knox Group chert ranging in coloration from whites, yellows and reds, to browns, light and dark grays and black.

TABLE 15. Metric Summary Data for Coosa Notched Points, 9Co46. *

Measurement	n	Mean	Standard Dev.	Coeff. of Var.
Length	8	30.94	±6.20	20.03
Width	20	17.63	±2.31	13.08
Thickness	24	7.04	±1.36	19.30
Shoulder Width	20	17.48	±2.34	13.40
Blade Length	8	20.38	±5.48	26.87
Dist. Haft Width	24	13.65	±1.70	12.48
Pro. Haft Width	23	16.24	±2.23	13.73

* Metric data reported in millimeters.

Copena Triangular

Two relatively large triangular points with excurvate blade tips and straight blade sides were identified as representative of the Copena Triangular type (Figure 26). Cambron (1958:10) first described the type and differentiated it from the closely related Copena point on morphological grounds. Justice (1987:207) suggests that the Copena Triangular point was technofunctionally tied to the Baker's Creek point, representing the preform of the latter. A similar relationship may obtain between the Butler Creek examples and the Coosa Notched point which is morphologically very similar to the Baker's Creek point. It is further stated by Justice (1987:207) that this point type is diagnostic of Middle Woodland and Walthal (1972:144) indicates a temporal range of A.D. 150 to 500. There is some evidence to suggest that the type extended into the Late Woodland period in some areas of the midcontinent (Pace and Apfelstadt 1978:39, 80). The Butler Creek examples were whole and respectively measured 35 and 37 millimeters in length, 18 and 17.5 millimeters in width, and 8 and 6 millimeters in thickness. One exhibited a straight base, while the other had a slight concavity of about 1 millimeters at its maximum intrusion. Both were fashioned from a dark gray chert.

Gary Stemmed

Three large, slightly contracting stem points were identified as the type Gary Stemmed (Figure 26), defined originally by Newell and Krieger (1949:164-165). Justice (1987:189-188) includes the type within his Dickson Cluster and suggests a Late Archaic-Early Woodland transition association. Gary Stemmed points have been reported in the upper levels of the Stanfield-Worley Bluff Shelter in Late Archaic and Woodland deposits (DeJarnette et al. 1962) and Jenkins (1975) has argued that the point type represents the diagnostic style in the Middle Woodland along the middle Tombigbee (see also Cambron and Hulse 1975:57). There are a number of regional, and possibly sequential, variants associated with the Gary Stemmed type and it has been suggested that the type may be characterized by a good deal of temporal variability (Justice 1987:190). Clearly the pronouncedly larger size of these points in comparison to the more numerous types discussed above may indicate an earlier time range for this style in the

Butler Creek occupational sequence. Since, Dunlap Fabric Impressed is not present at the site, the Gary Stemmed points may represent either a preceramic, Late Archaic occupation, i.e. Caldwell's (1957) Stamp Creek Focus, or an earlier Cartersville occupation. Table 16 summarizes the metric data for the Butler Creek sample of Gary Stemmed points. As is true of the other point types discussed, the greatest metric variation occurs in the measurements of length and blade length, but significant variation also occurs in the dimensions of the haft.

TABLE 16. Metric Summary Data for Gary Stemmed Points, 9Co46*.

Measurement	n	Mean	Standard Dev.	Coeff. of Var.
Length	3	50.50	±11.05	22.05
Width	2	22.25	± 0.35	1.59
Thickness	3	9.50	± 1.00	10.52
Shoulder Width	3	22.25	± 0.35	1.59
Blade Length	3	35.67	± 9.02	25.29
Dist. Haft Width	3	19.17	± 3.40	17.58
Pro. Haft Width	3	15.83	± 3.18	20.06

* Metric data reported in millimeters.

Jacks Reef Corner Notched

A single, medium-sized corner notched point was identified as the type Jacks Reef Corner Notched (Figure 26). This type was originally defined by Ritchie (1971:26) based on examples recovered from the Jack's Reef Site in the State of New York. It nevertheless represents a very widely distributed point style associated with terminal Middle and Late Woodland sites throughout the eastern United States (Cambron and Hulse 1975:68; Justice 1987:217). The Butler Creek example was 38 millimeters long, 23.5 millimeters wide, and 6 millimeters thick, within the mean range of examples from Limestone County, Alabama reported by Cambron and Hulse (1975:68). Additional metric data can be consulted in Appendix IV. The blade was excurvate at the top, but straightened near the shoulders and the corner notches were extremely deep. The base was expanded and excurvate in shape and the overall haft appearance resembled that of the Coosa Notched type with the exception of the deep corner notches. Obviously the two types are closely related, but their temporal and cultural associations are not well understood at present. Ritchie (1961) obtained a radiocarbon date of 1056 ± 250 B.P. from the White Site in New York state which purportedly is associated with Jack's Reef Corner Notched points, suggesting the possibility that the Butler Creek example might associate with the late Swift Creek/Woodstock occupation at Butler Creek, represented primarily by Feature 4. Other date associations, however, indicate earlier ranges within the terminal Middle Woodland (see Cambron and Hulse 1975:68) Period.

Madison

Three small, straight-sided isosceles triangular examples were identified as Madison points (Figure 26). The type was initially defined by Scully (1951:14) and is included within Justice's (1987:224-227) Late Woodland/Mississippian Triangular Cluster, which is distributed throughout the eastern United States. The cluster also has a rather broad temporal distribution, ranging from A.D. 800 to historic contact. Table 17 presents summary metric data on the Butler Creek sample. All three specimens were very thin, finely retouched across the blade face with pressure flaking, and exhibited slight to extreme basal concavities ranging between 1 and 3 millimeters in depth. All three were manufactured from chert.

TABLE 17. Summary Metric Data for Madison Points, 9Co46. *

Measurement	n	Mean	Standard Dev.	Coeff. of Var.
Length	3	17.00	± 1.73	10.19
Width	3	3.17	± 0.29	9.12
Thickness	3	2.00	± 1.00	50.00

* Metric data reported in millimeters.

Pickwick

Two specimens from the Butler Creek assemblage were identified as representative of the Pickwick type, first defined by DeJarnette et al. (1962:66) at the Stanfield-Worley Bluff Shelter (Figure 26). Justice (1987:153-154) includes the type in his Ledbetter Cluster and associates it with the Late Archaic period. The Pickwick type is a large, straight to slightly contracting stemmed point with a diagnostic recurvate blade (see also Cambron and Hulse 1975:103). The epicenter of its distribution is apparently in the Tennessee River Valley, but examples have been documented throughout Georgia, Mississippi, Alabama, Kentucky, and portions of Indiana, Illinois, and Louisiana. As was true of the Gary Stemmed points, the Pickwick points probably document an earlier occupation than that represented by the ceramic assemblage at Butler Creek. Table 18 summarizes the metric data for the Pickwick points. They are distinguished from the Gary Stemmed examples by their noticeably more squat, broader blades and shoulders as well as their recurvate blade outline. The haft dimensions of the two types are, however, almost identical and both types show a tendency for slight stem contraction. The similarities in morphology suggest close, if not contemporary, cultural relationships, and it is possible that both types represent a single, preceramic occupational component.

TABLE 18. Summary Metric Data for Pickwick Points, 9Co46. *

Measurement	n	Mean	Standard Dev.	Coeff. of Var.
Length	3	39.50	±1.41	3.58
Width	2	32.50	±3.54	10.88
Thickness	3	9.00	± 0.00	0.00
Shoulder Width	3	32.50	±3.54	10.86
Blade Length	3	29.00	±1.41	4.88
Dist. Haft Width	3	19.75	±2.48	12.53
Pro. Haft Width	3	16.00	±1.41	8.84

* Metric data reported in millimeters.

Other Stone Tools

In addition to the chipped stone material, three other stone artifacts were recovered during testing. These included 2 quartzite cobble hammerstones and a shaped schist slab fragment (Figure 24). Metric and categorical data for these artifacts are summarized in Table 19. The hammerstones exhibited low to medium edge abrasion and faceting, and one (Bag 137) also contained very small and light faceting marks on one face, suggesting use as an anvil stone for bipolar reduction or nut cracking. The schist slab fragment represented one end of a tool or object that had been partially chipped and ground to form a uniform rounded or steeply concave edge. The original object may have been treated in a similar way at the other end, which would have produced an elongated oval. Faceting and other signs of grinding were not detected on the broad faces of the object and it is therefore improbable that it represents a mano or grinding stone fragment.

TABLE 19. Metric and Categorical Data for Other Stone Tools, 9Co46. *

Bag	EU	Lev.	Tool Type	Raw Material	Length	Width	Thick.
128	3	2	Hammerstone	Quartzite	63.0	62.0	48.0
137	5	1	Hammerstone	Quartzite	57.0	53.0	40.0
128	3	2	Shaped Slab	Mica Schist	75.0	54.0	14.0

* Metric data reported in millimeters.

SUBSISTENCE REMAINS FROM THE BUTLER CREEK SITE

Bulk soil samples were collected from two features at 9Co46. The sampled features were both pits, Features 4 and 6. Twenty liters of soil were floated and yielded a total of 241.4 grams of light fractions and 4,642.1 grams of heavy fractions (Table 20). The light fractions from these two features, along with a

349.0 gram sub-sample of two heavy fractions (see Appendix V for discussion of ethnobotanical methods), form the basis of this analysis. In addition, a small amount of faunal bone was recovered from Feature 4. The analysis and interpretation of the Butler Creek subsistence data will be discussed below.

Macroplant Analysis

The recovery of charred macroplant remains through flotation at 9Co46 can be characterized as light. Only 3.8 grams of wood charcoal and 0.3 grams of charred nutshell were recovered from the greater than 2 millimeters portion of the light fractions, whereas 29.7 grams of modern, uncharred organic material was collected (Table 21). Additionally, the four light fractions contained hundreds of uncharred, modern seeds. The species density of charred plant remains from the greater than 2 millimeters fractions of the sampled features was low; 0.19 grams of wood charcoal was recovered from each liter of processed soil and 0.02 grams (1.35 fragments per liter by count) of nutshell was recovered (Tables 22 and 23). The charred seed assemblage from the flotation light fractions included one grape seed, one virginia creeper seed, and twenty-seven fragments of nutshell. Additionally, two Prunus sp. seeds (probable plum) were recovered from the Feature 4 fill during excavation screening.

TABLE 20. Proveniences, Sample Volumes, and Sample Weights for the Flotation Samples from 9Co46.*

Provenience	Sample Volume	Lt. Fraction Wt.	Heavy Fraction Wt.	Feature Type
9Co46 Fea. 4, center	5.0	92.7	1235.1	Basin-shaped pit
9Co46 Fea. 4, near edge	5.0	48.0	1194.9	Basin-shaped pit
9Co46 Fea. 4, gen. fill	5.0	46.5	977.3	Basin-shaped pit
9Co46 Fea. 6	5.0	54.2	1234.8	Basin-shaped pit

*NOTE: Sample volumes are in liters and sample wieghts are in grams.

TABLE 21. 9Co46 Macroplant Remains (Greater Than 2 millimeters in Size).

Provenience	Uncharred Organic	Wood Charcoal	Nutshell	Seeds
Fea. 4, Center	10.9	1.7	5/0.1	--
Fea. 4, Near Edge	4.7	1.0	3/*	--
Fea. 4, General Fill	5.2	1.0	19/0.2	2/*
Fea. 6	8.9	0.1	--	--

NOTE: Uncharred Organic and Wood Charcoal are recorded by weight in grams and Nutshell and Seeds are recorded as number/weight in grams.
* = <1 gm

TABLE 22. 9Co46 Identified Wood Charcoal, Tabulated by Count.

Taxon	Fea. 4, Center	Fea. 4, Near Edge	Fea. 4, Fill	Fea. 6
Oak	--	--	2	--
Elm	3	--	2	--
Pine	--	3	1	--
Conifer	2	2	2	--
Ring-Porous	1	--	2	--
Diffuse-Porous	1	3	--	--
Unidentified Dicot	3	2	1	--

TABLE 23. 9Co46 Charred Seeds, Tabulated by Count.

Taxon	Fea. 4, Center	Fea. 4, Near Edge	Fea. 4, Fill	Fea. 6
Grape	--	1	--	--
Virginia Creeper	--	--	1	--
Hickory Nutshell	5	3	2	--
Walnut Fam. Nutshell	--	--	17	--
Unidentifiable	1	--	1	--

Seeds

Five charred seeds were recovered from Feature 4. This assemblage included one grape seed, one virginia creeper seed, two Prunus sp. seeds and two unidentifiable seed fragments. The fleshy fruits of all three identified taxa are edible. Grapes ripen from September through October (Radford et al. 1968:695) and were frequently dried and stored by Historic Indians in the Midwest (Yarnell 1964:65). Virginia creeper fruits are available for harvest from July to August and Prunus sp. drupes ripen from May through September (Radford et al. 1968). All three taxa were also used for a wide variety of medicinal purposes by historic Indian groups (Moerman 1986). The presence of these three late summer and fall bearing fleshy fruit producing species suggests that Butler Creek may have been occupied in the fall, though it must be kept in mind that all three species can be stored for later use.

Nutshell

Ten fragments of hickory nutshell and 17 fragments of Walnut family nutshell were recovered from the Feature 4 light fractions. The ratio of nutshell to wood charcoal by weight in the greater than 2 millimeters fraction of Feature 4 was 2:25, which suggests that nutshell was not abundant in this Late Woodland feature. This pattern is similar to that noted by Johannessen (1984:202) in prehistoric sites in the American Bottom, where she found that the "proportion of nutshell in the total charcoal assemblage decreases from earlier levels, suggesting a decline in the relative use of nuts, or a change in processing techniques." Yarnell and Black (1985:97) similarly note a gradual decline in the quantity of hickory nutshell from the Middle to Late Woodland Periods in their summary of Southeastern Archaic and Woodland period plant remains. The presence of hickory nutshell suggests that the site was, minimally, occupied in the fall. Hickory nuts are available for harvest in October (Radford et al. 1968).

Wood

Thirty fragments of wood charcoal from Feature 4 were placed into seven categories (Table 23). Eleven fragments were identified to genus, while nineteen were placed into the more general categories of conifer, ring-porous dicot, diffuse-porous dicot, and unidentifiable dicot. Three of these categories (ring-porous, diffuse-porous, and unidentified dicot) represent dicot woods that could not be specifically identified because the charcoal fragments were poorly preserved or were too small to precisely identify. Six fragments were classified as conifer because they lacked critical features (such as entire annual rings) that would allow more specific identifications. The specifically identified wood charcoal fragments included two oak, five elm, and four pine specimens.

All of the trees that were represented in the wood charcoal assemblage are present in the Etowah River drainage today. The Etowah drainage falls within the southeastern mixed forest province. The climax vegetation is "medium to tall forests of broadleaf deciduous and needleleaf evergreen trees" (USDA 1980:25). The most common trees in this forest type are oak, hickory, sweetgum, blackgum, red maple, winged elm, and a variety of pines. Dogwood and woody vines are common understory vegetation (USDA 1980:25).

Faunal Analysis

Forty-nine bone fragments were recovered during excavation screening at 9Co46 (Table 24). Forty-three fragments were taken from Feature 4, and six fragments were recovered from three test units. The bone included six deer metapodials, one unidentified large mammal humerus fragment (distal end of the diaphysis), thirteen unidentified mammal bones, twenty-eight fragments of unidentified bone, and one unidentified tooth fragment. The unidentified distal end of a humerous may represent either a large white-tailed deer or possibly an elk (Bobby Southerlin, personal communication 1990).

TABLE 24. Identified bone from 9Co46 (identified by Robert Southerlin personal communication 1990).

Provenience	Species	Count	Type
Feature 4, General Fill	Unidentified bone	23	unknown
Feature 4, Level 3	White tailed deer	6	metapodials
Feature 4, Level 3	Unid. large mammal	1	distal end of humerous
Feature 4, Level 3	Unid. mammal	13	unknown
T.U. 2 (496N489E)	Unidentified bone	2	unknown
T.U. 4 (498N489E), L. 2	Unidentified bone	3	unknown
T.U. ? (517N483E)	Unidentified tooth	1	tooth

Summary and Conclusions

This analysis attempted (1) to evaluate the extent and quality of macroplant preservation at Butler Creek; (2) to document human-plant interactions at the site in Middle to Late Woodland times; and (3) to use the recovered macroplant assemblage to explore such questions as potential plant uses and the seasonality of the site occupation. The relative abundance of wood charcoal and nutshell that was recovered in the greater than 2 millimeters fractions of the sampled features suggests that the potential for macroplant preservation at 9Co46 is, at best, moderate. Additionally, the high recovery of uncharred, modern seeds indicates that there is a significant amount of bioturbation at the site. The poor recovery of charred seeds and nutshell precludes a definitive discussion of the subsistence practices of the site inhabitants. The recovery of three species of late summer to fall ripening fleshy fruits and fall ripening nut taxa suggests that the site was probably occupied in the fall, but other seasons of occupation cannot be ruled out.

CHRONOLOGY, STRUCTURE AND FUNCTION OF THE BUTLER CREEK SITE (9Co46)

The testing investigation at Butler Creek was designed to collect and generate data pertinent to yielding inferences concerning the nature, age, association, and function of the prehistoric occupation of the site. It should come as no surprise that conclusions concerning one aspect of the occupation can affect interpretations of other aspects and that inferences derived from such a study are sometimes unavoidably circular. Hopefully the synthesis to follow will guard sufficiently against the temptation to weave circularity into the inferences offered by serving proper homage to alternative interpretations. In addition, it will be necessary to discuss the Allatoona cultural sequence in its original form, which Caldwell constructed using the format of the Midwestern Taxonomic Method (McKern 1939), rather than in the more standard terminology later proposed by Willey and Phillips (1958). Certainly the Allatoona sequence is deserving of an update, and such should be attempted at an appropriate time, but for the current discussion it seems more advisable to retain the older terminological structure to avoid potential confusion.

Chronological Position of the Butler Creek Site

The ceramic assemblage recovered from the site consists of three principal types, Cartersville Check Stamped, Cartersville Simple Stamped, and Swift Creek Complicated Stamped. These types may be chronologically related to each other in two possible ways. First, the Cartersville series material and the Swift Creek material could represent distinctive, sequential components. Alternatively, the association of these types could indicate a pure assemblage representative of the little known and understood Swift Creek occupation in the Allatoona Lake region.

Caldwell (1957:312) recognized a similar association at a "few" other sites in the reservoir, particularly where Cartersville Simple Stamped was well represented, but was hesitant to provide a definitive statement concerning the cultural definition of this ceramic complex. He thought that the Swift Creek ceramics in this association belonged to the early range of the Swift Creek seriation and that the Cartersville sites which contained this material were presumably late. He did not, however, provide a construct to differentiate these sites from the earlier Cartersville complex (Caldwell 1957:315). In fact, the whole range of occupations leading up to the Etowah ceramic period in the Allatoona region is only very hazily reconstructed. A close reading of Caldwell's statements concerning these sites, and his reconstruction of the Woodstock (ceramic) Period, however, indicates that he felt that a rather complex and detailed cultural sequence would be developed in the future for this time period in northwest Georgia. Summarizing the character of occupation in the region during this period, Caldwell (1957:315-316) stated that:

> ...what we have at Allatoona is a chronological hiatus between the Cartersville Period and the succeeding Woodstock Period and complete desertion of the area is a distinct possibility. The entire middle range of the Swift Creek chronology is absent, and at present we cannot point to any other ceramic manifestation which we can definitely say was at Allatoona at this time.[1]

In the footnote cited above he goes on to say that there was, in fact, at least one candidate to bridge the perceived gap:

> [1]...Certain sites of the Woodstock Period which we distinguish as the Proctor Focus have associated in the pottery complex a simple stamped type and a check stamped type. The fact that these two are analogous though not identical with Cartersville Check Stamped and Cartersville Simple Stamped might require the Cartersville ceramic complex to have lasted somewhat longer in this area....

The Proctor Focus ceramic complex, defined at the Woodstock Fort Site (originally 9Ck85-F, now 9Ck104-F), consisted of Woodstock Diamond Stamped, Woodstock Line Block Stamped, Woodstock Check Stamped, possibly some simple stamped, Woodstock Plain, and "a relatively late variety of Swift Creek Complicated Stamped" (Caldwell 1957:313). This ceramic complex was distinguished from the closely related Woodstock Focus, defined at the Woodstock type site (Wauchope 1966), by the absence of check stamped, simple stamped, and the late variant of Swift Creek Complicated Stamped and the presence of Woodstock Incised. Through a circuitous path of proof, then, it can be argued that Caldwell recognized the possibility of three sequentially related ceramic complexes in the Allatoona Reservoir during this time range, a late Cartersville complex including early Swift Creek variants; an intermediate complex represented by the Proctor Focus which contained unidentified check stamped and simple stamped types, a late variant of Swift Creek and Woodstock stamped types; and a later occurring complex represented by the Woodstock focus in which the check and simple stamped types and the late variant of Swift Creek were no longer present. Caldwell (1957:321-322) further maintained that the hiatus between the late Cartersville complex and the Proctor Focus in the Allatoona Reservoir was effectively filled by a complex identified in the Buford Reservoir (Caldwell 1953:14-17) which included Napier, middle variety Swift Creek, and possibly an early variety of Woodstock.

Similar associations of Swift Creek and check and simple stamped ceramics have been documented throughout Georgia and northern Florida, and the interpretations of such assemblages have met with very similar problems to those encountered in the Allatoona region (see Anderson and Joseph 1988:245-247; DePratter 1979; Fairbanks and Keel 1966; Milanich 1973; Rudolph 1986; Sears 1956; Smith 1975; Thomas and Campbell 1985; Waring and Holder 1968; Willey 1949; Wood et al. 1986). The general consensus is that the check stamped-dominated complexes (i.e. Deptford and Cartersville) were ancestral to Swift Creek, but the details of just how this transition occurred have been debated at some length. The Mandeville site in southern Georgia provides an excellent example of such a dispute. The preliminary analysis of the site resulted in the identification of check stamped, simple stamped and Swift Creek ceramics and it was inferred that these types represented a sequence of two separate components, late Deptford and early Swift Creek (Kellar et al. 1962). Very little temporal overlap between the Swift Creek ceramics and the former two types was recognized. Smith's (1975) reanalysis of the stratigraphy, however, failed to produce any significant differences in the upper and lower levels of the Middle Woodland deposits and on this basis she subsumed all of the material within an Early Swift Creek ceramic complex composed of early Swift Creek Complicated Stamped and the Crooked River Series, which included complicated, check and simple stamped, cord marked, and plain surface treatments. A similar approach to defining a "transitional" check stamped-Swift Creek complex was undertaken more recently at the Pirates Bay site on the northwest Florida Gulf Coast (Thomas and Campbell 1985). Excavations revealed that the site was dominated by Deptford and Santa Rosa/Swift Creek series ceramics, but the precise chronological relationship between these series was not immediately obvious. A thorough study of the ceramic associations of 72 features and the half meter thick midden, however, indicated a remarkably constant co-association of all three series across the entire site. On this basis it was concluded that the types represented a single ceramic complex which was identified as the Okaloosa Deptford phase. A late Deptford designation was chosen over an early Swift Creek assignment because Deptford series material was numerically dominant and because the Swift Creek design elements were heavy and crude, suggesting an earlier time frame than that of the ceramics Willey (1949) initially described as early Swift Creek.

Stratigraphic and distributional evidence also support the single component option for the bulk of the material at the Butler Creek Site. Theoretically, one might anticipate a certain degree of spatial disjunction between the check and simple stamped, on the one hand, and the complicated stamped on the other, if these ceramics were the product of discrete occupational components. Their spatial distributions, however, are co-associated and relatively constant from one location of the site to the next, as can be seen in Table 25. The unusually high occurrence of complicated stamped sherds in EU 4 is no doubt the result of smearing and breakage of large sherds originally situated in the top of Feature 4 with the advent of plowing at the site. The larger sherds found in this pit were noticeably different from those recovered from the rest of the site area. It can be demonstrated both stratigraphically and ceramically that these larger sherds are associated with the terminal occupation at the site and probably correlate with Caldwell's (1957) Proctor Focus. The remainder of the recovery units with adequate ceramic samples, including the fill of Feature 4 which contained numerous smaller, eroded sherds that were probably incidentally included and therefore can be considered to pre-date the pit, contain very constant percentages of the three surface treatments. Although a weak inference due to small sample size, the presence of a complicated stamped sherd in the lowest part of the midden (Feature 2) also favors the single component option.

The temporal ranges of the Cartersville and Swift Creek ceramic series in northwest Georgia have not been well documented through the independent dating of strong cases of association. This problem is further compounded by the lack of a clear picture of the stages of ceramic development that transpired during this time horizon. The traditionally defined Cartersville series (i.e. Cartersville Check and Simple Stamped) is thought to have extended from ca. 300 or 200 B.C. to A.D. 300 or 400 (see Anderson 1985:32, Anderson and Joseph 1988:230), while the occurrence of the Swift Creek series is believed to have spanned the period from A.D. 100 or 200 to A.D. 750 or 800 (see Anderson 1985:32; Anderson and Joseph 1988:231). Presumably, then, if Butler Creek primarily represents a single component Cartersville-Swift Creek complex, it should date to the time of temporal overlap between these two ceramic series. Following conventional wisdom, this would suggest an occupation date somewhere between A.D. 100 and 400.

TABLE 25. Relative Proportional Distributions of Check, Simple, and Complicated Stamped Ceramics by Recovery Unit, 9Co46.

EU/Fea	Check Stamped	Simple Stamped	Complicated Stamped
EU 1	100% (n=2)	- (n=0)	- (n=0)
EU 2	33% (n=11)	30% (n=10)	37% (n=12)
EU 3	49% (n=39)	32% (n=25)	19% (n=15)
EU 4	20% (n=7)	20% (n=7)	60% (n=21)
EU 5	39% (n=7)	39% (n=7)	31% (n=4)
Fea 4	42% (n=19)	27% (n=12)	31% (n=14)
Fea 2	- (n=0)	67% (n=2)	33% (n=1)

No radiocarbon dates were obtained from the hypothesized Cartersville-Swift Creek component at Butler Creek and consequently the issue of its dating is somewhat moot at this time. Nevertheless, some further discussion is merited based on the meager chronological and developmental ceramic information available from other regions. Perhaps the best dated and documented transitional check stamped-Swift Creek occupation in the Southeast is the Okaloosa Deptford component at the Pirate's Bay site on Santa Rosa Sound near Fort Walton Beach, Florida. Here, four radiocarbon samples were derived from three different features with demonstrably homogeneous cultural deposits composed of both Deptford and Swift Creek/Santa Rosa series pottery (Thomas and Campbell 1985:118). The resultant dates were remarkably tight, ranging between 50 B.C. and A.D. 140, and this is the minimum time range currently acknowledged for the Okaloosa Deptford phase in northwest Florida. This range would be quite compatible with the predicted occupation interval for the Cartersville-Swift Creek complex hypothesized to exist at Butler Creek. However, there are aspects of the Okaloosa Deptford ceramic assemblage which would indicate that it represents an earlier phase of Swift Creek ceramic development. Thomas and Campbell (1985:117) argue that the Swift Creek Complicated Stamped ceramics from the Pirate's Bay site are earlier than the examples Willey (1949; 1973:378-383) describes as early Swift Creek. They are characterized by heavy, much cruder designs and applications and the diagnostic "pie crust" or scalloped rim is absent. Notched rims are present, but exhibit odd or "incipient" morphologies and only rarely occur. Moreover, examples of Crooked River Complicated Stamped, which served as an integral part of the Early Swift Creek Complex defined by Smith (1975) at the Mandeville site in southwest Georgia, were not present at Pirate's Bay. These were the principle reasons that Thomas and Campbell (1985:117-118) placed the Pirate's Bay component in the late Deptford period rather than suggesting an early Swift Creek association.

Clearly, the Swift Creek material from Butler Creek is much more "advanced" than that of the Okaloosa Deptford phase, and it would seem likely, as well, that it would post-date it. Just how "advanced" the Swift Creek ceramics from the site are, however, is a critical but difficult question to answer. The development of Swift Creek in northwest Georgia never reached the magnitude of elaboration that became manifest in the later stages of design evolution in southern Georgia and Florida (see Kelly and Smith 1975; Schnell 1975; Sears 1956; Snow 1975; Willey 1949, 1973) and, as a result, it is difficult to calibrate the trajectories of change in the two areas. There is also the suggestion that there might be a temporal lag of design style development in northern Georgia as a function of trait adoption and diffusion processes that resulted in the incorporation of Swift Creek pottery into local ceramic complexes (Caldwell 1958:37).

Caldwell (1957:312-313) officially characterized the Swift Creek material in the Allatoona Reservoir found in association with the Cartersville series as "early," but it is interesting to note that in his original manuscript this evaluation is seen to be a slightly amended characterization. The originally typed statement read (words in brackets now scratched out): "The Swift Creek sherds in Cartersville may be subjectively stated to belong to the early [middle] range of the Swift Creek seriation, [and certainly they are neither exceptionally early nor exceptionally late]." This quote is not intended to expose any hidden scandal concerning cultural reconstruction in the reservoir, only to show that Caldwell had difficulty reconciling the Swift Creek material he found with the established south Georgia seriation. This seriation, based on Kelly's stratigraphic test excavations at the Swift Creek type site (Kelly and Smith 1975), allowed for three developmental stages. Early Swift Creek was characterized by small, simple and open curvilinear design motifs, all-over stamping, and notched and scalloped rim elaboration. Middle Swift Creek stamps were more carefully and skillfully carved, their application was better executed, and small rim folds were common. Finally, Late Swift Creek designs became larger, were more carelessly carved and applied, and rim folds increased in size. The Swift Creek examples from the Lake Sidney Lanier region (Buford Reservoir) were classified in the middle range of the seriation due to the presence of small rim folds and a tendency toward finer and more elaborate designs (Caldwell 1957:322). Since the sherd sample from Butler Creek is characterized by a predominance of small, eroded sherds, it is best to avoid the tenuously subjective procedure of evaluating design quality to calibrate the Swift Creek material. This leaves only the rim data to approach such an endeavor. Table 6 indicates that simple rims dominate the assemblage, but that the complicated stamped sample (n=5) also includes a variety of other types, including scalloped, notched, and rolled. The latter type is equivalent to the small folded rim referred to in the Swift Creek seriation. In addition, scalloped rims were recorded for plain and simple stamped surface treatments and a relatively small number of rolled rims were also present in the plain category. Thus, rim morphologies ascribed to both Early and Middle Swift Creek are present in the Butler Creek assemblage and it seems quite plausible to conclude from these observations that the Swift Creek sample from the site represents just what Caldwell (1957:312-313) originally described for the reservoir in general: early middle Swift Creek, "neither exceptionally early nor exceptionally late."

Sites of expressly middle range Swift Creek have not been documented through excavation in northwest Georgia and it is not possible to discern how closely this aspect of ceramic development parallels the Swift Creek seriation of south-central Georgia. Throughout northwest Georgia there are assemblages, however, that contain middle and/or late Swift Creek and Napier ceramics that are viewed as representative of Late Swift Creek and which have been more thoroughly documented (see Anderson and Joseph 1988:232). Simpson's Field in the Russell Reservoir is one of these (Wood et al. 1986). Folded rims are much more abundant in this assemblage than they are at Butler Creek, occurring on approximately 83 percent of the identified rims. Moreover, plain rim strips are present and some of the rim folds are very large, traits specifically associated with the late end of the Swift Creek seriation. Most importantly, Cartersville Series ceramics were absent, at least in significant amounts. Certainly this component, which has been assigned a date range of A.D. 600 to 750, should post-date Butler Creek. The dating of the component, however, is not particularly straightforward and is not based on direct associations of radiocarbon dates from the site itself. The information used to date the site, instead, derives from the Annawakee Creek site in northwest Georgia, which contains similar Swift Creek/Napier ceramics (Dickens 1975). Two uncorrected radiocarbon dates of A.D. 605±85 and A.D. 755±110 were derived from two features resting on an apparent platform mound at the site. It should be noted that the dating of this mound is quite controversial, as is true of all early platform mound prototypes in Georgia. The opportunities for mixing and spurious associations are immense in these kinds of features due to the fact that the earth used to construct the mounds often derives from occupation midden composed of both earlier ceramic styles and charcoal. In spite of these problems, the Annawakee Creek dates are commonly used to calibrate the chronological position of Late Swift Creek in Georgia. Two corrected radiocarbon dates were actually obtained from pits containing Swift Creek/Napier ceramics at Simpson's Field. The resultant dates, however, were unexpectedly late (A.D. 1260±40 and A.D. 1230±50), ranging in the late thirteenth century when corrected (Wood et al. 1986:105). Understandably, these dates were considered anomalous and were ultimately viewed as derivative from the later Mississippian component. Neither radiocarbon scenario provides a very satisfying date for the Late Swift Creek ceramic complex at Simpson's Field and, certainly, the dating of the site is by no means resolved.

The other dates commonly relied on to date Swift Creek derive from Mandeville and Russell Cave in northern Alabama (Kelly and Smith 1975:113-114). The Mandeville Site, which is regarded as Early Swift Creek in age (see Smith 1975), produced two radiocarbon dates from the later levels at Mound A, A.D. 490 ± 150 and A.D. 530 ± 150 (see Crane and Griffin 1962:190). Russell Cave yielded three radiocarbon dates (A.D. 450 ± 175, A.D 740 ± 100, and A.D. 800 ± 110) from Layer C which contained Napier and Swift Creek ceramics (see Griffin 1974:13-14). None of the contexts are particularly ideal for dating ceramic associations, and the dates themselves were the product of early, less accurate methods of radiocarbon analysis. In addition, the dates as reported have not been subjected to modern tree-ring correction formulae. When such corrections are undertaken, however, they tend to push the dating of Swift Creek upward one or two centuries. The calibrated midpoints of the Early Swift Creek levels at Mandeville become A.D. 600 and A.D. 640 respectively, while the Late Swift Creek dates from Annawakee Creek have midpoints of A.D. 665 and A.D. 780 to 853

(Stuiver and Becker 1986:889-890). Moreover, the one sigma ranges for the Mandeville dates extend as late as A.D. 680 to 730 and those of Annawakee Creek are as late as A.D. 770 and A.D. 980. The Russell Cave dates are the least reliable in terms of cultural association, but generally reflect this same temporal range. The latest of the dates from the cave has a calibrated midpoint range of A.D. 892 to 936. Clearly, Swift Creek cannot be effectively dated on the basis of this suite of radiocarbon assays, but modern calibration methods indicate that this ceramic complex may occupy a substantially later chronological position in Georgia than originally thought. Given these calibrations, it is also possible to suggest that the Cartersville/Swift Creek component at the Butler Creek Site, which should post-date or correspond to the same time period as the later levels of the Mandeville Site, dates after A.D. 600.

The single radiocarbon date from Butler Creek was obtained from Feature 4 (Table 26), which produced a number of ceramics that appear to post-date the more ubiquitous Swift Creek/Cartersville component. The corrected mean date according to the Stuiver and Becker (1986) calibration is A.D. 1025, with a one-sigma range of A. D. 984-1186. The carbon sample was derived from the heavy flotation fraction of Feature 4 and care was taken to include only wood charcoal. In addition, a C13/C12 ratio was calculated for the sample to control for potential isotopic fractionation variability that could result from the mixing of organic material with different photosynthetic pathways (Browman 1981). The calculated ratio was slightly larger than the average for the C3-pathway plants (i.e. most trees) and resulted in an upward adjustment of 40 years for the uncorrected mean.

TABLE 26. Radiocarbon Date and Calibration* for Charcoal from Feature 4, 9Co46.

Lab No.	C-14 Age	C13/C12	Adj.C-14 Age	Cal. Mean	1-Sigma	2-Sigma
Beta-41374	1010±90	-27.2	970±90	A.D. 1025	A.D. 984-1186	A.D. 890-1234

* Source: Stuiver and Becker (1986).

Feature 4 represents, in Schiffer's (1986) terms, a "strong case" for chronology building because the ceramic material associated with the time of its filling is easily distinguished from earlier material that became incidentally included in the pit as a consequence of formation processes related to its initial excavation and abandonment filling. Moreover, the pit represents one of the last activities performed at the site and as such there was very little opportunity for later cultural material to work its way into the fill. The ceramic composition and stratigraphy of the pit have been discussed at some length, but a synthetic review is presented here to facilitate discussion. Feature 4 occupied a relatively late position in the stratigraphy of the site, it intruded a prepared clay hearth of an undefined house and the lower portion of the occupation midden. The upper stratigraphy was obliterated by plowing, but it can be concluded from the nature of the ceramic assemblage that the top of the pit was stratigraphically higher than most, if not all, of the formerly undisturbed deposits at Butler Creek. The sherds from the pit exhibited two preservational conditions, moderately to heavily eroded with blunted edges or crisp with sharp edges. The eroded sherds were invariably small, while the crisp sherds were generally larger and appeared to belong predominantly to three partial vessels. The eroded group consisted of the ubiquitous Cartersville-Swift Creek material, while the crisp group comprised a rather unique assemblage of ceramics generally considered to occupy a later chronological position in the local and regional sequences of northwest Georgia.

The partial vessels were classified as Connestee Simple Stamped, Unidentified Check Stamped/Complicated Stamped, and Swift Creek Linear Complicated Stamped. The fine, dark grayish brown, micaceous paste in all three partial vessels contrasted somewhat with the ordinary Cartersville/Swift Creek material and served as the primary basis for differentiating the Connestee Simple Stamped from the similarly treated Cartersville Simple Stamped. Twelve sherds of Connestee Simple Stamped were found in the fill of the pit, all of which appeared to belong to a single vessel (Figure 21). In addition, two sherds of this type, one of which conjoined with a Connestee Simple Stamped sherd from the pit, were recovered from EU 4 directly above the pit. EU 4 also contained 2 sherds classified as Connestee Brushed. The Unidentified Check Stamped/Complicated Stamped vessel was represented by three rather large sherds (Figure 23). The designs were very faint, probably as a consequence of both use ware and stamp carving, but the sharp edges of the sherds indicated that the faintness was definitely not related to post-depositional weathering. Two of the sherds exhibited only check stamping, but of an unusual kind. The checks were much larger (8 millimeters by 14 millimeters on average) than is commonly associated with Cartersville Check Stamped and were diamond-shaped. It was difficult to determine whether this check stamping had originally been applied in an overall pattern or whether it was limited to zones, due to the very faint impressions and wear. Some areas of the sherds, however, seemed to show discontinuities suggestive of zoned application in a diamond pattern. One of these sherds also contained a faint concentric circle motif, indicating that the original vessel had employed a combination of check and complicated stamped motifs. The other partial vessel was represented by only 4 medium-sized sherds, 2 in the fill of Feature 4 and 2 from Level 2 of EU 4, directly above the feature (Figure 22). These sherds exhibited slightly rounded rectilinear patterns of repeated chevrons or continuous herring bone elements. Dr. David Hally (personal communication 1991) of the University of Georgia has identified the sherds as representative of Swift Creek and comparison of these sherds with examples of Swift Creek Linear Complicated Stamped in Kelly and Smith (1975:48-49) confirms this identification.

Caldwell (1957:133-136,317) constructed a ceramic complex known as the Proctor Focus from excavations at Woodstock Fort which might provide at least a partial correlate for the Feature 4 vessel assemblage. The complex consisted of the following types: Woodstock Diamond Stamped, Woodstock Check Stamped, Woodstock Line Block Stamped, Woodstock Plain, "possibly some simple stamped," and a late variety of Swift Creek Complicated Stamped. The typical paste of this complex was apparently very similar to the Feature 4 assemblage, consisting of infrequent small to medium sized grit temper, abundant mica, and a "ruddy brown" coloration. The late variant of Swift Creek referred to was thought to represent an integral part of the Proctor Focus ceramic complex because of its overall similarities in paste, surface finish, and form to Woodstock Diamond Stamped. The primary design element was the concentric circle, which was "poorly executed" and applied in an overall pattern. Several examples exhibited dashes in the innermost circle and fewer specimens contained horizontal background filler lines outside of the circles, characteristics that can be construed as anticipatory of Woodstock. At the time, there was considerable controversy regarding the assignment of Swift Creek nomenclature to this type. In a segment of his discussion, which he later deleted from the text to be published, Caldwell (1957:136) indicated that: "Rowena and A. R. Kelly object to the Swift Creek appelation (communication). W. H. Sears suggested it and continues to maintain his position (communication)." The principle reasons for the assignment were that the design was simple and monotonous and execution was poor. These criteria would probably receive even greater criticism today from those that contend that Late Swift Creek designs were actually more complex than those appearing on Early Swift Creek (i.e. Anderson and Joseph 1988:232; Snow 1975; see also Kelly and Smith 1975:38). Caldwell (1957:136) was quick to point out in the midst of this controversy that the concentric circle motif is diagnostic of the later Savannah Complicated Stamped type and that this variant actually appeared to occupy an intermediate and possibly later position in curvilinear complicated stamp design development.

The Unidentified Check Stamped/Complicated Stamped vessel fragment from Feature 4 shows obvious parallels with the "late variant of Swift Creek" identified at Woodstock Fort. The combination of check stamping and concentric circles, however, is a new twist. This could, of course, strengthen claims of an earlier Swift Creek association, but the checks are paradoxically diamond shaped and would more appropriately seem to anticipate Savannah Check Stamped (Caldwell and McCann 1941:44-45). On the other hand, the faint stamping and rather thin lands of the design would be more consistent with Late Swift Creek than Savannah, which is characterized by much heavier stamping and relatively thick and deep lands (Caldwell and McCann 1941:45). Clearly, then, there appears to be a ceramic style, in the Allatoona region of northwest Georgia at least, that predominantly exhibits fine-lined and faint concentric circles dispersed in overall patterns with added variations of horizontal hatching and check stamping that appears to be transitional between typical Swift Creek and Savannah complicated stamped. Whether the ultimate appelation should be Swift Creek or some other designation is an issue of some importance and should be given careful consideration in the context of greater sample sizes before a decision is made.

Simple stamped pottery was not positively identified in the Proctor Focus complex, although statements by Caldwell indicate that he had strong suspicions that it actually was an integral element of it. In his summary of the Proctor Focus, Caldwell (1957:317) originally identified a type called Woodstock Simple

Stamped which he later deleted and replaced with the phrase: "possibly some simple stamped." Discussing infrequently occurring sherds in the Woodstock Fort investigations he (Caldwell 1957:136) observed that both simple stamped and brushed varieties were present and "showed no other features which would set them aside from the normal run of Woodstock pottery, but all were small and possibly were already on the site before the Woodstock occupation began." Presumably this statement implies that the paste characteristics of these sherds were indistinguishable from the fine, micaceous paste of the rest of the Proctor Focus types. Interestingly, he goes on to state that the simple stamping technique was distinguishable from that commonly applied to Cartersville series simple stamped examples in that the grooves appeared to have been applied with a sharp stick rather than a paddle. A plain and simple stamped ceramic horizon dating to the period of A.D. 800-1000 (and perhaps even later) including Connestee-like ceramics with sharp, v-shaped impressions has been posited for locations throughout South Carolina and along the Savannah River (Anderson 1985:42-43; Anderson and Joseph 1988:246-247). Caldwell's descriptions of simple stamped and brushed ceramics from the Woodstock Fort site and the similar Connestee-like ceramics from Feature 4 at Butler Creek would seem to correspond well with at least the terminal stages of such a horizon. However, there is a strong association with early complicated stamped types in the Allatoona region, which may distinguish northwest Georgia sequences from those in South Carolina where this latter element may be lacking. The descriptions of simple stamped pottery from Butler Creek and Woodstock Fort are very similar, and in combination with evidence for a late simple stamped type with sharp, v-shaped grooving across a large portion of Piedmont Georgia, South Carolina, and North Carolina, there is ample evidence to argue that the material Caldwell initially described as Woodstock Simple Stamped should be included in the Proctor Focus ceramic complex.

The linear complicated stamped sherds from Feature 4 seemingly do not have a parallel in the Proctor Focus complex. Woodstock Diamond Stamped motifs included only elliptical or sub-diamond fields, with concentric outlines of one to three lands, and horizontal line hatchure filling (Caldwell 1957:134). Background filling of parallel horizontal lines was also common. Woodstock Line Block Stamped included only areas of alternately oriented parallel lines on the sherds large enough to observe motifs (Caldwell 1957:135). Hally's identification of the sherds as Swift Creek Linear Complicated Stamped suggests that on the level of a very fine seriation, Feature 4 may represent an earlier expression of the Proctor Focus, or a Swift Creek/Woodstock transitional complex. There is simply not enough evidence as of yet to determine which option would be more accurate from the standpoint of culture-historic systematics.

The radiocarbon date derived from the pit is certainly within the conventional chronological placement of Woodstock, which has been set at A.D. 900 to 1000 (Hally and Langford 1988:25; Hally and Rudolph 1986:19). However, this dating is based on only 4 radiocarbon dates, each from a different site, with corrected means of A.D. 850 to A.D. 1020. The ceramic composition of Feature 4 would anticipate an early Woodstock date in the A.D. 850-900 range, but the corrected mean is A.D. 1025. This would seem somewhat late given the conventional chronology, but the level of precision that can be achieved with radiocarbon dates may not be sufficient to resolve a difference of only 100 years. The new methods of calibration, however, at times provide an opportunity to evaluate radiocarbon dates in slightly different ways than archeologists are generally accustomed. Using the Stuiver and Becker (1986) calibration for instance, it can be stated that there is only a 2 percent probability that the actual date of the wood from the pit extends into the 2-sigma range. That is, there is a 98 percent probability that the actual date of the charcoal falls within the range of A.D. 984 to 1186. Consequently, it can be said with some confidence that the pit dates after A.D. 984. Thus, if it represents a Proctor Focus manifestation as seems probable from the associated ceramics, then it is quite feasible to conclude that the early half of the Woodstock period (the Proctor Phase?) in the Allatoona Lake region dates to the latter half of the tenth century A.D. and/or the first half of the eleventh century.

Summarizing the occupation history of the Butler Creek Site, it can be concluded that there were probably only two ceramic components, a Cartersville/Swift Creek component dating to the early middle range of the Swift Creek seriation and a late Swift Creek or early Proctor Focus component dating to the early portion of the Woodstock Period. There may have been a hiatus between the Cartersville/Swift Creek and Proctor components, as earlier suggested by Caldwell. The Cartersville/Swift Creek occupation was not dated and the magnitude of the elapsed time between the two components cannot be determined. If the Swift Creek seriation holds for northwest Georgia, a gap of 100 years or more may have occured. The Butler Creek Site provides an excellent opportunity to both test this seriation and to construct a more detailed chronology of the Late Woodland Period in northwest Georgia. An earlier preceramic occupation was also detected in the projectile point classification (i.e. Pickwick and Gary Stemmed). Only four points were assignable to this occupation, and it is hypothesized that they represent the remains of a temporary encampment. This occupation was not considered to represent Early Woodland occupation because examples of Dunlap Fabric-Impressed pottery were not present.

Site Structure and Function

The results of testing indicate that the Butler Creek Site was a small, but intensively occupied, habitation during the Cartersville/Swift Creek occupation. Ceramics of this component are extensively and consistently distributed across the core area of the site, which measured approximately 40 meters by 80 meters and covered an area of only about 1/4 of an acre. Presumably the bulk of the features at the site were also associated with this component, since the representative ceramics of this component are numerically dominant. This would in turn suggest that Butler Creek was used as a small habitation during this time period, either as a seasonal settlement reoccupied by single family units, or as a larger hamlet order settlement occupied by several families over a shorter span of time that still might have involved seasonal reoccupation. The bulk of the recovered subsistence data is associated with later, Proctor Focus component.

Only wild, locally available subsistence resources maturing during late summer and fall were identified, suggesting the possibility that the Proctor Focus occupation, at least, represented a seasonal visit. The scarcity of ceramics outside of Feature 4 that could be related to this occupation suggests that it was not extensive and that it probably represented a short-term camp rather than a more intensive, habitation related occupation.

Very little evidence has ever been produced in the northwest Georgia area to suggest that Cartersville, Swift Creek, or even Woodstock populations were practicing intensive corn agriculture. Caldwell (1957) reported maize from a purported Woodstock component at Stamp Creek in the Allatoona Reservoir, and Baker (1970) recovered corn from a pit at the Lum Moss site also producing an uncorrected radiocarbon date of A.D. 980±95. The bulk of the remains from the Cartersville and Kellog complexes at Allatoona are represented by nutshell (Caldwell 1957). The Pott's Tract site (Hally 1970; Hally and Langford 1988:43) has produced the most extensive Woodstock subsistence data base and indicates a heavy reliance on wild resources. The list includes acorn, walnut, hickory nut, various seeds, deer, bird, turtle, fish, and freshwater molluscs.

The Butler Creek Site contains an abundance of information that would further contribute to our understanding of Middle and Late Woodland subsistence-settlement systems. Discerning the extent of habitation at the site, the size and function of houses, and recovering a larger representation of subsistence remains would help immensely in answering questions concerning the composition of the occupying social units, the intensity and duration of the occupation, and the seasonal timing of the occupation(s). Much of the site has been destroyed through plowing, but the results of testing demonstrate that Butler Creek contains undisturbed subsurface remains that can significantly enhance our understanding of this little known period in northwest Georgia prehistory. The site is therefore recommended as eligible for listing on the National Register of Historic Places.

III. INVESTIGATIONS AT 9Co45: THE LAKE ACWORTH SITE

The Lake Acworth Site was also initially discovered and recorded by Joseph Caldwell (1957) during the flood pool survey of the Allatoona Reservoir in 1946 and 1947. Very little information about the site, however, was recorded at that time. Southeastern Archeological Services (SAS) revisited 9Co45 during the 1985-1986 intensive survey of areas above the maximum flood pool (Ledbetter et al. 1986:III-144). At that time a series of pot hunting disturbances were noted and a sizable collection of Mississippian ceramics were collected from the spoil piles of the pot holes. Shovel testing indicated that the site had a depth of approximately 30 centimeters. This suggested that the site had high feature preservation potential and probably contained significant archeological materials. SAS recommended that the site be further evaluated, however, to determine the extent of pot hunting damage. Intensive testing by New South Associates in August of 1990 indicates that the site primarily represents a small Mississippian village that was established during Etowah times and continued to be occupied until sometime in early Lamar when it was abandoned. This occupation range corresponds closely with that defined for the Etowah Mound Site (Hally and Langford 1988) and it can be suggested that the Lake Acworth Site functioned as a lower order village within the Etowah Polity. The results of testing indicate that the village was segregated into at least four residential precincts, and that a palisade wall may have surrounded it during at least part of the occupation.

The discussion of the testing investigations will be divided into eight sections. These are: (1) the site setting, (2) testing methodology,(3) artifact density distributions and site boundary definition, (4) unit excavation descriptions, (5) features descriptions, (6) artifact descriptions, (7) subsistence data and analysis, and (8) synthetic interpretations of site occupational chronology and settlement function. The parallels of presentation between this site report and the Butler Creek Site report result from the deployment of a nearly identical field and analysis methodology.

SITE SETTING

The Lake Acworth Site is situated on a broad ridge finger overlooking Butler Creek, approximately 150 meters (ca 500 feet) west of the creek bed and ca 0.45 kilometers (ca 1,475 ft) southeast of the confluence of this stream and Proctor Creek (see Figure 1). Just as was true of the ridge on which the Butler Creek Site rests, the gentle slope suggests that the ridge has been modified over a long period of time by planation from overbank flooding and that the topographic situation may be more properly referred to as a ridge terrace. At the time of the investigation the site was vegetated in mature pine woods consisting of 30 to 60 year-old trees (Figure 27). The thick underbrush encountered by Southeastern Archeological Services, Inc. in 1986 had been removed by Corps of Engineers personnel over an area measuring ca. 140 meters by 250 meters prior to fieldwork

Figure 27
Lake Acworth Site 9Co45, August 1990

Site 9Co45, looking north.

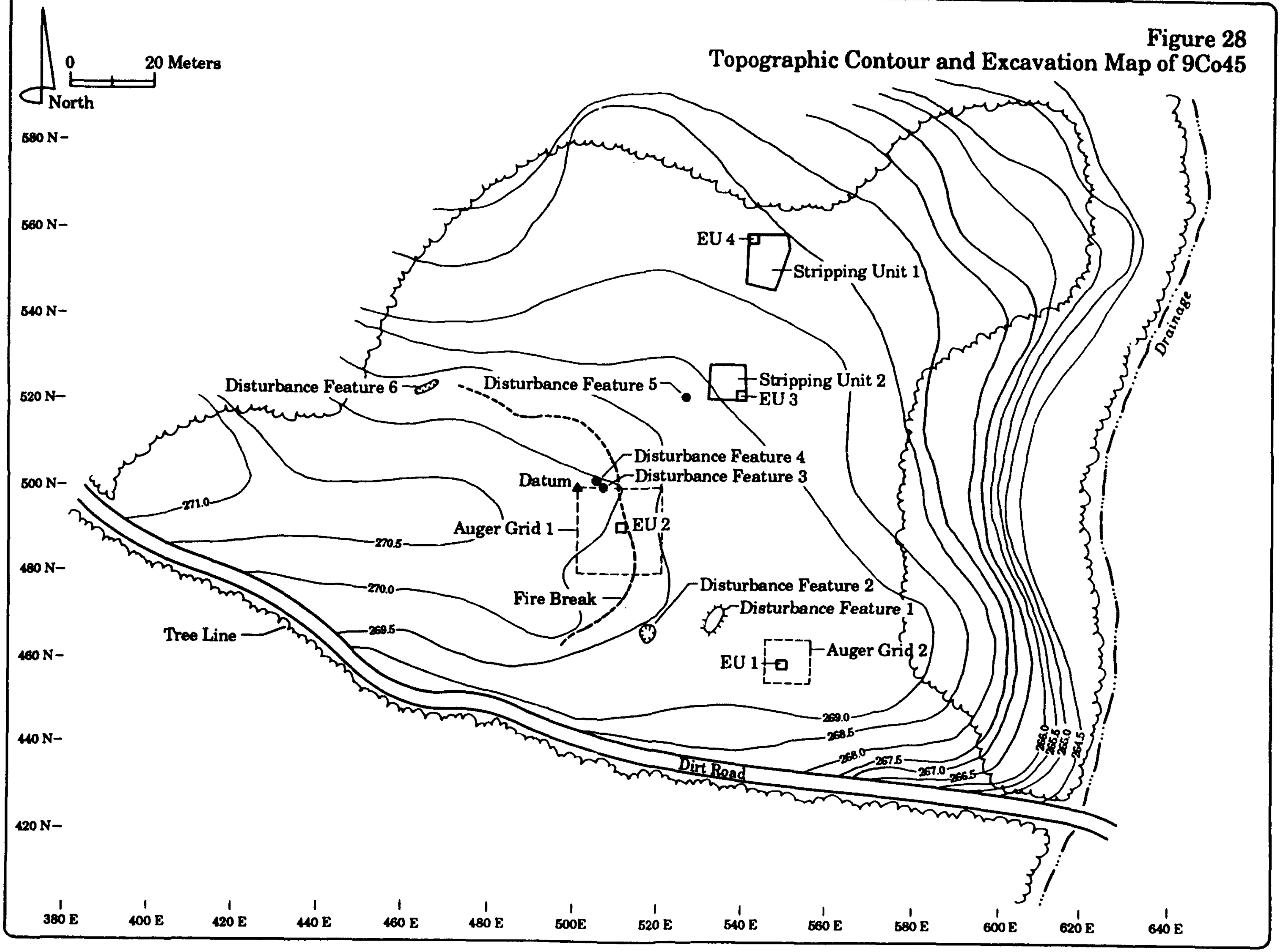
(Figure 28). Elevation within this area ranges from a maximum of slightly more than 271.0 meters N.G.V.D. (ca. 889 feet N.G.V.D.) at the apex of the toe to a minimum of 264.5 meters N.G.V.D. (ca. 868 feet N.G.V D.) on the lower slope adjacent to and above a small tributary drainage of Butler Creek bordering the east side of the site. The general slope of the land rises to the west until the top of a large ridge finger is reached, about 250 meters outside of the Allatoona Lake Project property line.

Evidence for two historic agricultural terraces can be observed on the surface of the site, one following close to the 268 meter contour and the other situated between the 269.5 meter contour and a small ditch that appears to represent a later fire-break constructed after the Corps of Engineers acquired the property. Six smaller disturbance features were also noted and their locations are indicated in Figure 28. The large, circular depression identified as Disturbance Feature 2 was described as a "pot hunter hole" by Ledbetter et al. (1986). The small, circular depression referred to as Disturbance Feature 5 was also observed in 1986 and described as a "pot hole." A mound of dirt (Disturbance Feature 1), possibly covering a downed tree, measuring approximately 12.5 meters in length and 4.5 meters in width was apparently not observed in 1986. Disturbance Features 3 and 4 are small, circular pits of less than 0.5 centimeters in diameter and may represent "pot holes" as well. They do not appear to correspond to the locations of Southeastern Archeological Services (SAS) shovel tests depicted on the sketch map of the University of Georgia site form. Finally, Disturbance Feature 6 represents a linear depression of some 6.75 meters in length that could represent a partially filled backhoe trench. It was not reported by Southeastern Archeological Services, Inc. in 1986, but neither was the fire-break ditch with which it may be associated. This information indicates that the site has been subjected to numerous episodes of on-going "collector" related subsurface disturbance and has also received destructive impacts from either Corps of Engineers or wildlife management activities (i.e. the fire-break) in recent years.

TESTING METHODOLOGY

Investigation of the site commenced with the establishment of a map reference grid across the area cleared by the Corps of Engineers. This was accomplished with a transit and meter tape. The grid measured 150 meters north-south by 240 meters east-west and grid points were established at 10 meter intervals along main baselines and at 10 meter intervals on other grid lines. The site datum was established at grid coordinates 500 N-500 E. Ultimately, grid points were set at each 10 meter interval by pulling a meter tape between points shot-in with the transit. Elevational data were collected at each of these grid points and a topographic contour map of the ridge was generated at 0.5 meter intervals (Figure 28). Topographic features located outside of the main grid were mapped using transit angles and distance readings from a stadia rod.

Figure 28
Topographic Contour and Excavation Map of 9Co45



Field investigation at the Lake Acworth Site was implemented in three stages. The first stage involved short interval shovel testing across the expanse of the site to define site boundaries and to identify site structural characteristics as reflected by artifact density distributions. Shovel tests were excavated at 10 meter intervals to determine site boundaries and to provide an initial basis for locating subsurface testing units. This resulted in a sample of 187 shovel tests, of which 159 (85%) produced artifactual material. An additional testing technique deployed during this stage was tube augering. Two separate tube augering grids were established in selected areas to better evaluate the subsurface structure of the site (Figure 28). This information, in turn, was used to develop a plan for a second stage of investigation based on hand-excavated test squares. Both artifact distributions and soil depth data were closely monitored to determine the placement of the test squares. The primary objectives of this second stage were to recover an artifact sample large enough to evaluate the occupational history of the site, to evaluate the stratigraphic composition of the site, and to search for preserved features. The final stage of investigation involved machine areal stripping to more fully evaluate the character of feature distributions over selected portions of the site. Data generated from the earlier two stages of investigation provided the basis for selecting the configuration and locations of areal stripping units.

Figure 28 depicts the locations of the various test squares excavated during the investigation. Four 2 meter by 2 meter excavation units (EUs 1 through 4) were placed at dispersed locations across the site. Scattering the units in this manner was considered desirable to sample the range of spatial variability present within the site, especially as this might relate to component segregation. Standard hand excavation levels in the plowzone were arbitrary and measured 10 centimeters in thickness. In several instances, soil strata were encountered below plowzone and were segregated from the plowzone levels. Because no internal stratigraphy could be discerned within these strata, the layers were also excavated in arbitrary 10 centimeter levels. Initial levels were justified by the highest elevation at ground surface, which generally resulted in an averaged level thickness of less than 10 centimeters. Because deposits situated above plowzone were generally more 25 centimeters below surface, most units contained at least two levels (Levels 1 and 2) that consistently approached the ideal 10 centimeter thickness. The bottom depth of the test squares ranged between 20.00 centimeters and 50.25 centimeters below ground surface and it is estimated that a combined total of 5.0 m^3 of deposit was removed from these squares. The deposit was screened through 1/4 inch mesh hardware cloth and all artifacts recovered in screening were collected.

Decisions concerning the location and disposition of machine stripping units were ultimately finalized by a consideration of the excavation unit results. It was inferred from these results that feature density was high throughout the identified artifact concentrations and stripping in any of these areas would probably produce a large sample of features. However, the areas around EU 3 and EU 4 appeared to provide the best conditions for defining features because historic agricultural damage was minimal here and the substrate contact was sharp and readily definable. The substrate in the area of EU 2 had been subjected to much greater erosional and agricultural damage, and the substrate around EU 1 was undulating and rocky. An area of approximately 108 m^2 around EU 4 was stripped of plowzone over-burden and designated Stripping Unit 1 (Figure 28). Stripping Unit 2 covered approximately 56 m^2 in area in the general vicinity of EU 3 (Figure 28). Both units produced a high density of architectural and domestic features, as expected.

One hundred and forty-eight prehistoric features and 2 disturbance features (i.e. rodent/root holes) were identified during the testing of the Lake Acworth Site. Twelve features were identified in excavation units and the remainder were located during machine stripping. Six features were subsequently excavated, either in part or in whole. The standard excavation procedure involved the following steps. First the feature was bi-sectioned to expose a vertical profile. This was either accomplished in a single level or in arbitrary 10 centimeters levels depending upon the size and depth of the feature. It was stipulated in the scope of work that if internal stratigraphy was observable in the vertical profile of any feature, then the remaining half would be excavated in natural stratigraphic levels. None of the features excavated, however, exhibited discernible stratigraphic breaks. The remaining half of the feature fill was retrieved in arbitrary 10 centimeters levels when possible. Fill from features was screened through 1/4 inch mesh hardware cloth and all ecofactual and artifactual material recovered through screening was collected. Flotation samples were collected prior to screening to avoid damage to subsistence remains. Ideal sample volumes of 6 to 10 liters were collected for flotation when possible, although some features contained considerably less fill than this. In these latter cases, all of the fill from the feature was collected for flotation. Collection procedures for flotation samples followed the standard column (for whole feature sampling) and dispersed (for level sampling) techniques.

The provenience system employed in the recovery of material in the field involved the use of a sequential bag number assignment. All artifact and ecofact material recovered from a specific provenience (i.e. EU 3, Level 2; Shovel Test Pit 5; Ground Surface; Grid Point 500 N-500 E; etc.) was assigned a provenience number identified as a "bag number." This number later served as the primary link between different artifact analysis categories in the computerized relational data base management system.

INITIAL SITE STRUCTURAL MODEL

One of the main objectives of the shovel testing program was to derive an initial picture of the structural characteristics of the Lake Acworth Site by monitoring the spatial distributions of a number of artifact and deposit variables. Eight variables were selected for study including: 1) soil depth to sterile substrate, 2) soil color (Munsell values), 3) total chert debitage, 4) total quartz debitage, 5) total debitage, 6) total lithic tools, 7) total ceramics, and 8) total artifacts.

Frequency and categorical data by individual shovel test for these variables are presented in Appendix VI.

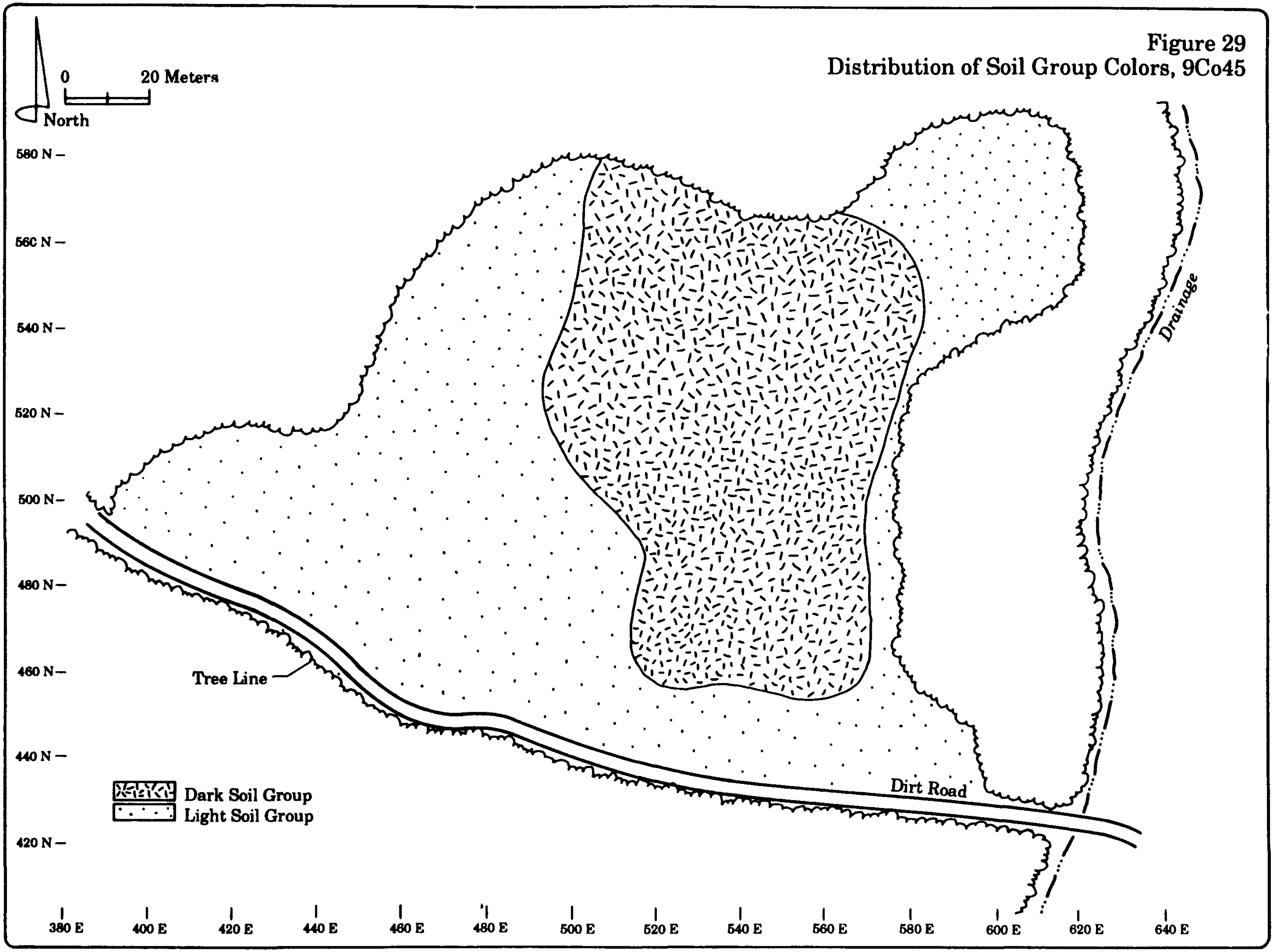
As was true of the Butler Creek Site, the Lake Acworth Site exhibited variation in soil color due apparently to the formation of occupation midden. When the distributions of the Munsell color groups were mapped, obvious spatial relationships between the dark soil group (Munsell color values: 10YR2/1, 2/2, 2/4, 2/6, 3/1, 3/2, 3/3) and artifact concentrations, and the light soil group (Munsell color values: 7.5 and/or 10YR3/4, 4/2, 4/3, 4/4, 5/6) and low artifact density zones were apparent (Figures 29 and 30). Soil depth (Figure 31), however, was not spatially co-associated, a fact which was determined to be a result of historic land use and erosion once grid auger and excavation unit data were evaluated. Table 27 presents summary statistics for soil depth data and the various artifact categories. The artifact summaries were calculated without the frequencies from STP 171, which produced 145 total artifacts and would have considerably skewed the results had it been included. Approximately 85 percent of the shovel tests (159 out of 187) produced artifacts and the overall average per shovel test was slightly more than six artifacts. The coefficient of variation values for the artifact variables indicate a significant degree of clustering, which is evident from Figure 30. Again, separate contour maps were generated for each artifact variable, but comparisons of the resulting maps indicated little difference in distributional characteristics. A comparison of the total artifact density distribution (Figure 30) with the topographic contour map of the site (Figure 28) indicates that the core of the site is located on the broad, flat portion of the ridge, below the upper agricultural terrace and paralleling the fire-break. The site core measures approximately 95 meters by 145 meters (2.84 acres), while lower artifact densities of the site periphery extend to maximum dimensions of approximately 150 meters by 160 meters (4.96 acres). Three separate artifact concentrations were noted within the core of the site, two smaller ones at the north and south ends and one larger central concentration that had two curious characteristics. First, there appeared to be a void in the center, and second, there was a linear extension running parallel to the fire-break. This latter also produced the deepest shovel tests, ranging between 41 and 46 centimeters in depth.

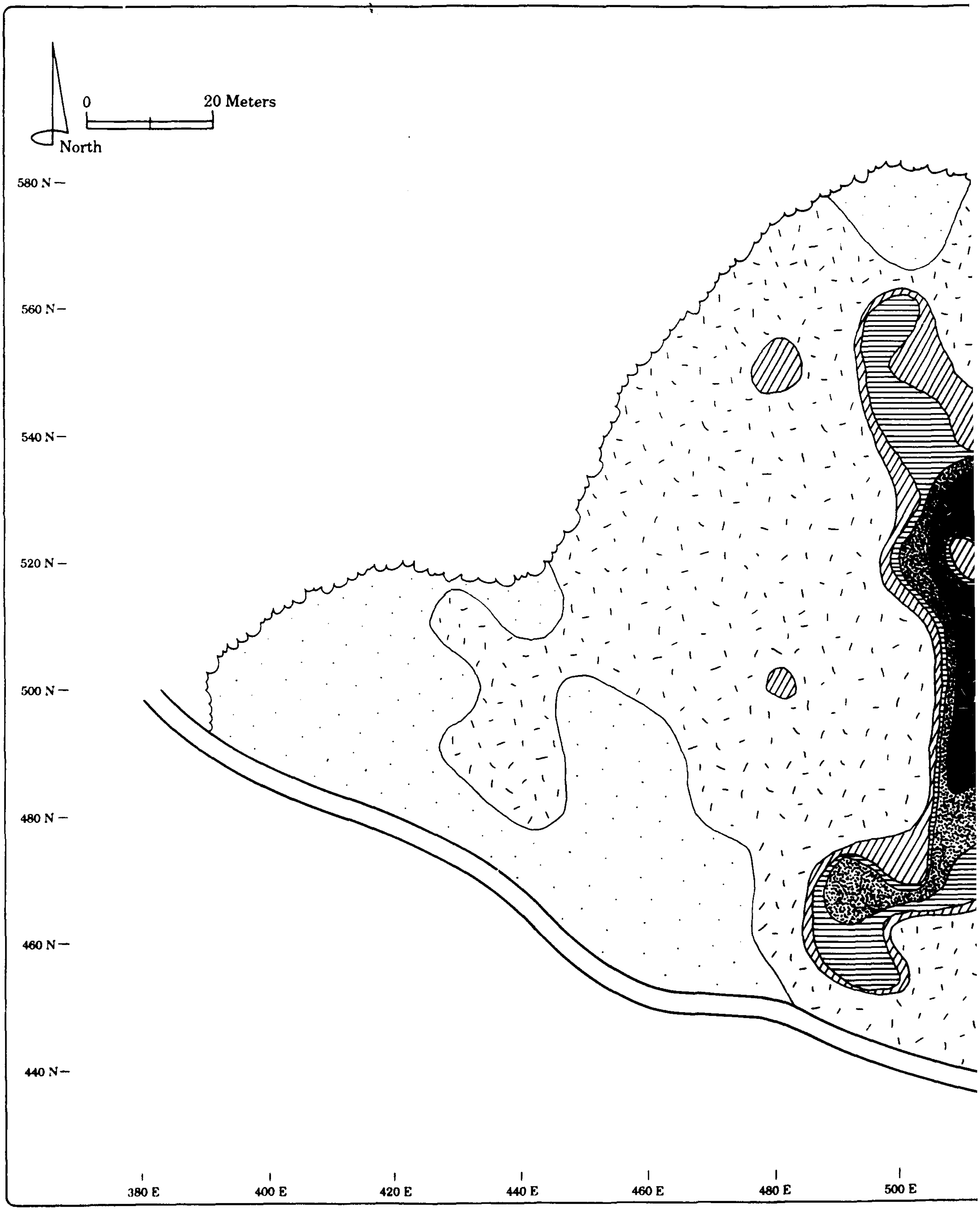
TABLE 27. Mean Values for Shovel Test Variables, 9Co45.*

Variable	Mean	Standard Dev.	Range	CV
Soil Depth	19.73 cm	±10.41 cm	1-50	52.79
Chert Debitage	1.68	±2.19	0-10	130.50
Quartz Debitage	0.83	± 1.13	0-6	136.56
Total Debitage	2.51	± 2.83	0-14	113.07
Total Lithic Tools	0.06	± 0.26	0-2	436.88
Total Ceramics	3.48	± 5.55	0-41	160.27
Total Artifacts	6.04	± 7.54	0-47	124.87

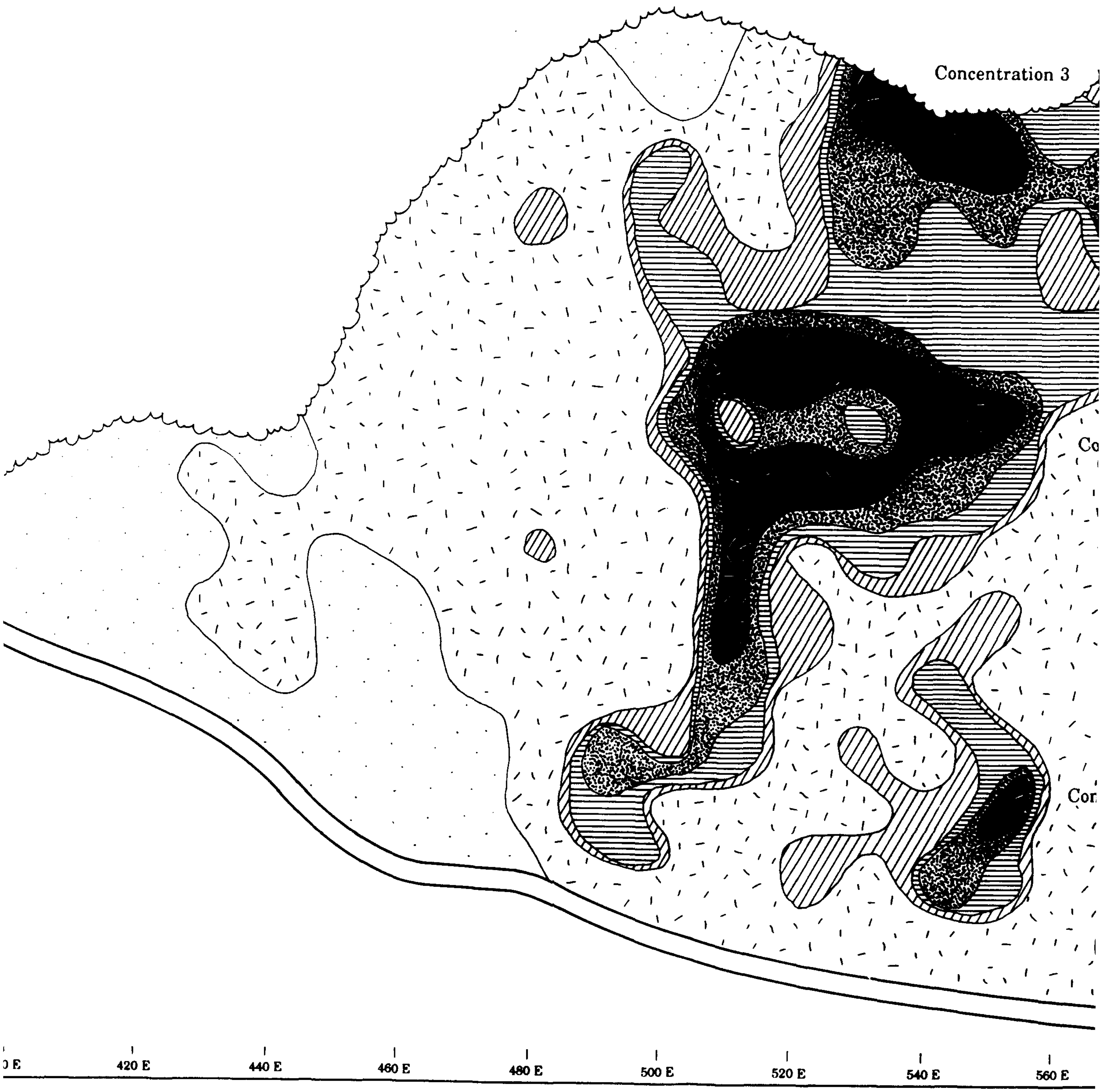
CV: Coefficient of Variation *All artifact summaries are calculated without STP-171.

Figure 29
Distribution of Soil Group Colors, 9Co45




0
20 Meters
North
580 N
560 N
540 N
520 N
500 N
480 N
460 N
440 N
380 E
400 E
420 E
440 E
460 E
480 E
500 E

ers


Concentration 3
Co
Cor
420 E
440 E
460 E
480 E
500 E
520 E
540 E
560 E

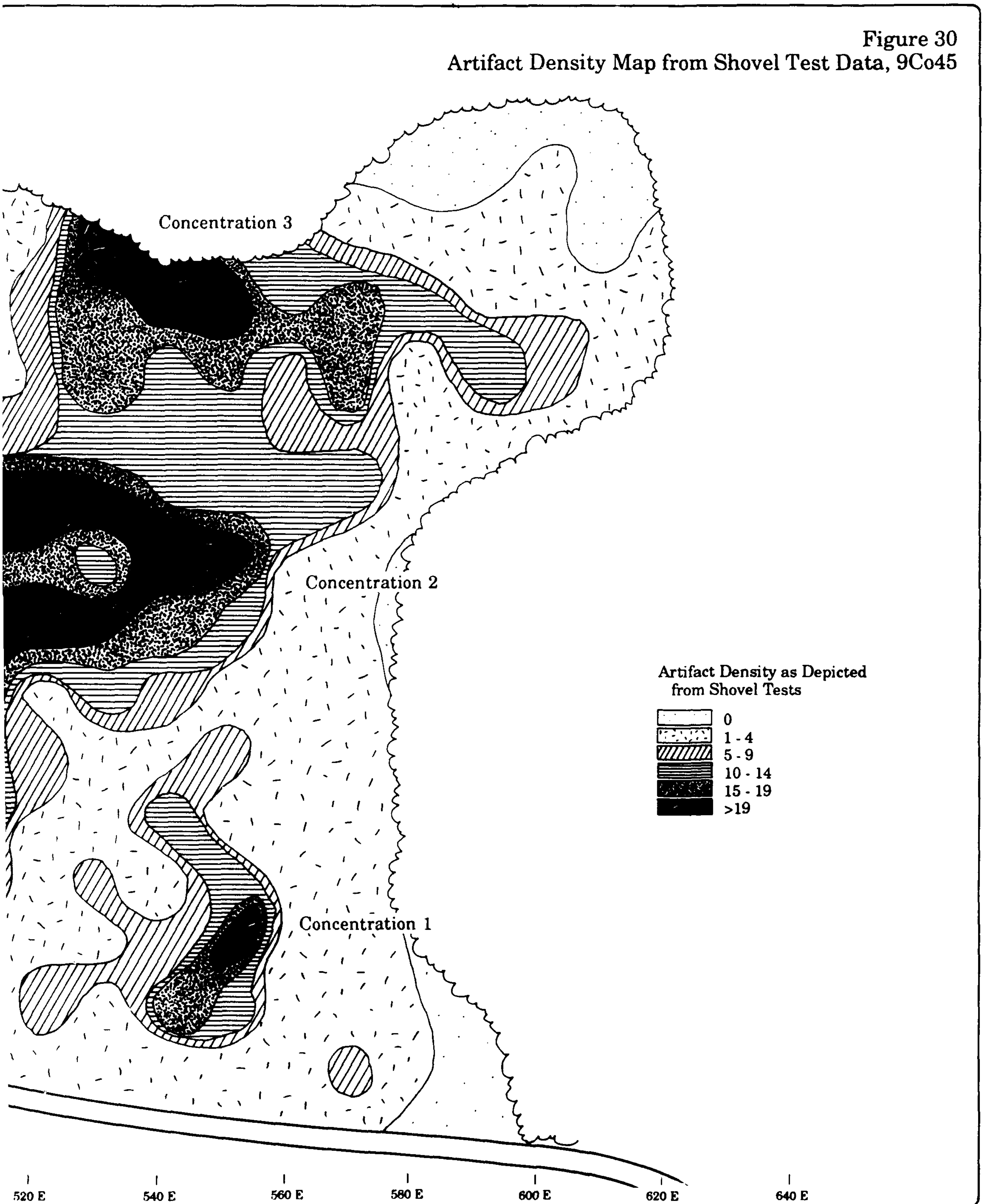
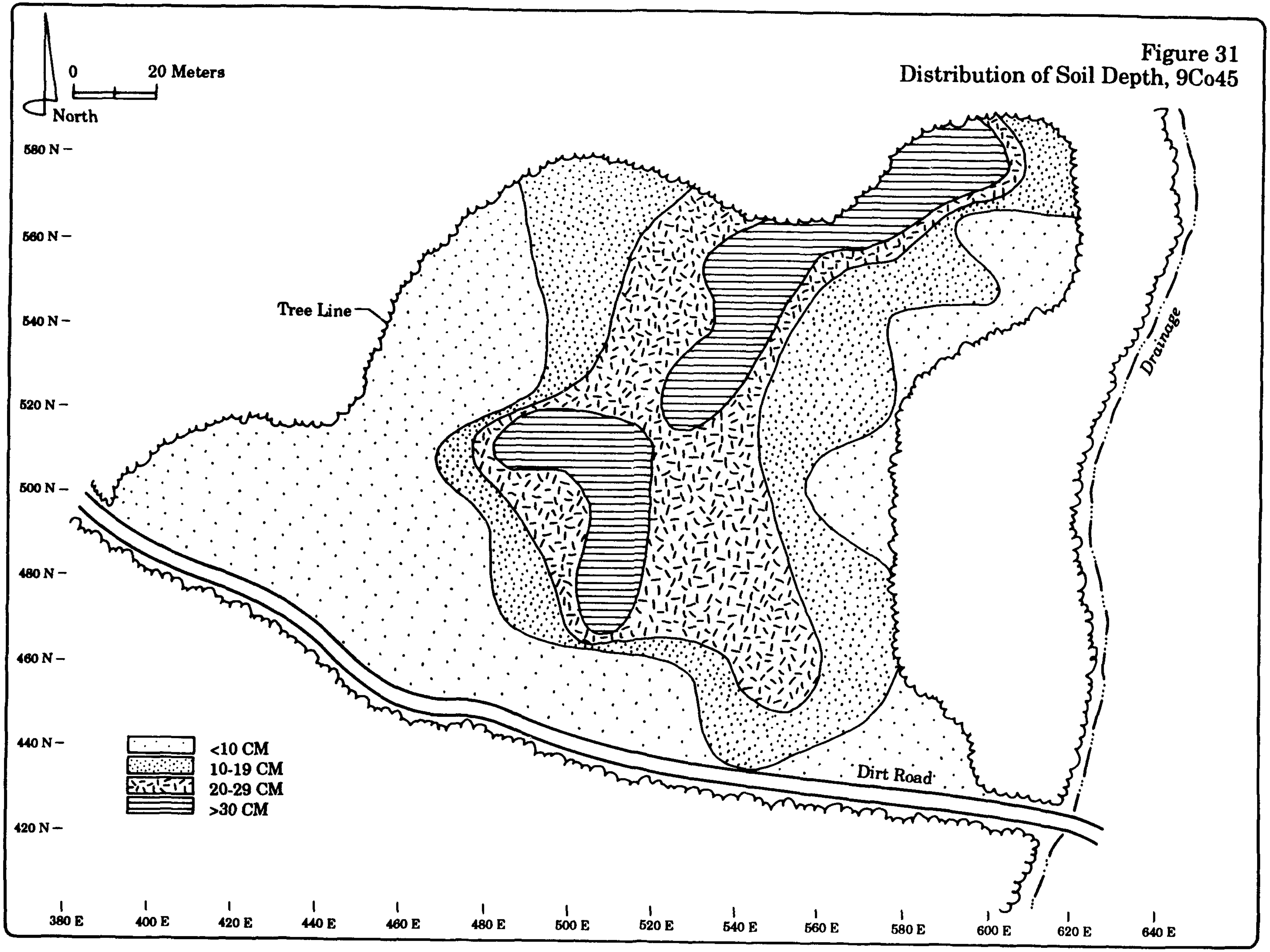


Figure 30
Artifact Density Map from Shovel Test Data, 9Co45
Concentration 3
Concentration 2
Concentration 1
Artifact Density as Depicted from Shovel Tests
0
1 - 4
5 - 9
10 - 14
15 - 19
>19
520 E
540 E
560 E
580 E
600 E
620 E
640 E

3-3

Figure 31
Distribution of Soil Depth, 9Co45



Tube auger Grid 1 was established between northing coordinates 500 N and 480 N and easting coordinates 500 E and 520 E to investigate this area of deep deposits (Figure 28). Samples were collected at 4 meter intervals along the east grid lines and 2 meter intervals along the north grid lines, resulting in a total sample of 50 auger tests. The auger data revealed that the extreme depth of deposit in this area was probably a consequence of historic agricultural terracing, as depth measurements decreased from a maximum of 63 centimeters below surface in the area of the fire-break to depths of between 19 and 24 centimeters both up and down slope. Furthermore, the upper soil matrix consisted of a loose, fine sandy fill that suggested erosional redeposition from upslope. The linear nonconformity of the artifact concentration in this area closely paralleled the edge of the terrace, suggesting that the site core may have at one time extended somewhat further upslope than is now apparent and that terracing activities had resulted in the displacement of prehistoric midden downslope to the edge of the terrace. The issue of whether the area contained intact sub-plowzone deposits, however, was not well addressed by the auger grid. Depth data were biased by the terrace soil build-up and it was difficult to determine at what depth the original plowzone started.

Auger Grid 2 was established between northing coordinates 465 N and 455 N and easting coordinates 545 E and 555 E, in the southern artifact concentration (Figure 28). Samples were taken every 2 meters when vegetation permitted and a total of 36 tests were excavated. This area had produced both high artifact densities and variable depth readings during shovel testing, indicating that it would provide an excellent opportunity for further subsurface definition through auger testing. Anomalous depth readings (37 centimeters to 50 centimeters below surface) were recorded in auger tests in the western half of the grid, occurring in two different concentrations of greater than 2 meters and 4 meters respectively. This suggested the presence of relatively large cultural features. The eastern half of the grid consistently produced more shallow depth readings ranging between 24 and 32 centimeters below surface. The area of shallower depth also exhibited lighter soil hues.

Given the strong relationship established between subsurface features and high artifact densities during the earlier testing at the Butler Creek Site, it was surmised that the artifact concentrations at the Lake Acworth Site probably represented residential precincts. Overall artifact densities were even higher here, though, and it was also inferred that these areas might represent more intensive occupation, perhaps reflective of a permanent village. Certain other patterns also contrasted somewhat with those of the Butler Creek Site . First, ceramic density was nearly twice as high at the Lake Acworth Site and the proportion of chert to quartz was much higher, nearly 2:1 versus 1:1. Clearly there were some contrasts that suggested differences in the site occupation histories and possibly overall settlement functions between the two sites. Although much ceramic material was recovered in the shovel tests, most of it was either heavily eroded or plain and consequently it was difficult to speculate on the component composition of the Lake Acworth Site . The few diagnostic sherds, however, indicated a Mississippian cultural association.

EXCAVATION UNITS

Four 2 by 2 meter excavation units (EUs) were placed at various locations within the core of the site to search for preserved features and to begin to address some of the questions generated by the shovel testing program. Excavation Unit 1 was placed in the southern artifact concentration (Concentration 1) within Auger Grid 2. Excavation Unit 2 was located within Auger Grid 1, in an area that had been determined to contain a deposit depth of 50 centimeters, within the linear artifact concentration on the southern end of the central artifact concentration (Concentration 2). Excavation Unit 3 was situated on the eastern end of the central artifact concentration (Concentration 2), while Excavation Unit 4 was placed in the northern artifact concentration (Concentration 3). Stratigraphic data collected in the field for each of these excavation units will be discussed below and are summarized in Table 28. A detailed accounting of the artifactual material and features found in the units will be presented later in the chapter.

Excavation Unit 1

Excavation Unit 1 was located between grid coordinates 458-460N and 548-550E, in the approximate center of Concentration 1. This unit was excavated in three arbitrary levels as indicated in Table 28. The basal level may represent undisturbed occupation midden as there was an apparent color change from dark brown (7.5YR3/2) to very dark brown (10YR2/2). Soil texture remained a constant rocky fine sandy loam, however, and the rains that occured after the unit was opened resulted in flooding that may have contributed to the perception of a color change. Nevertheless, this unit contained the deepest layer of non-slopewash deposit (average of 27.75 centimeters) and the Level 3 material could very well represent undisturbed midden. Four small post-holes were identified in the base of the unit (Figure 32), each containing a rocky sandy loam similar in texture and color to the Level 3 fill.

Excavation Unit 2

EU 2 (490-492N/509-511E) was situated near the fire-break at the southwestern edge of Concentration 2. The plowzone was excavated in five arbitrary levels (Table 28) and extended to an average depth of 50.50 centimeters below ground surface. Stratigraphy in the unit consisted of three layers: (1) an upper, thick, dark yellowish brown (10YR3/4), fine sand stratum extending to an average depth of ca. 42 centimeters, (2) a lower level consisting of a dark brown (7.5YR3/4), fine sandy clay extending to substrate and (3) yellowish red (5YR4/6), clay substrate (Figure 33). The bases of both of the upper two layers exhibited plow scars, indicating that the lower layer represented an earlier plowzone. The fine sand of the upper layer is not representative of a natural soil profile in this topographic situation and must represent some culturally induced deposit. It is

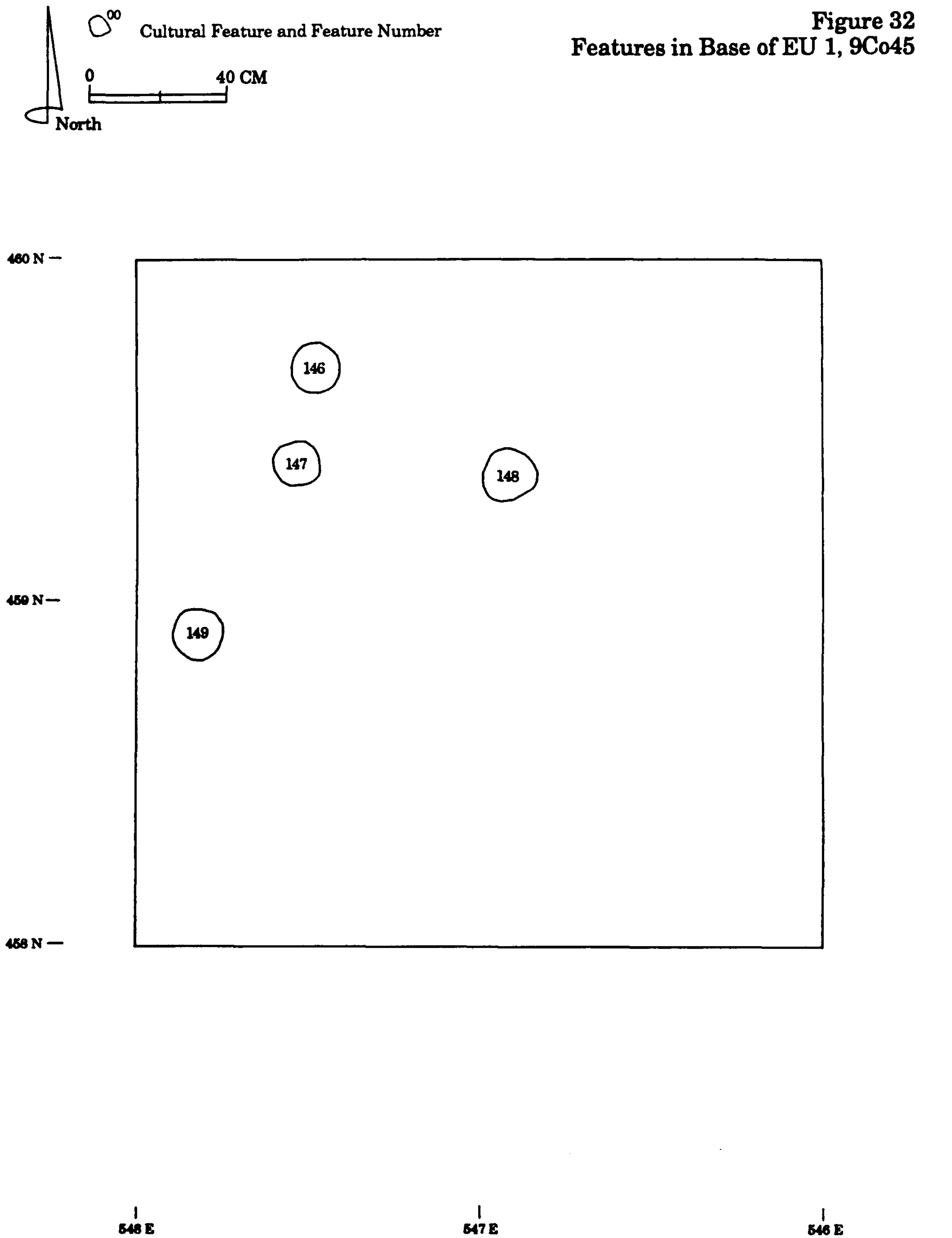
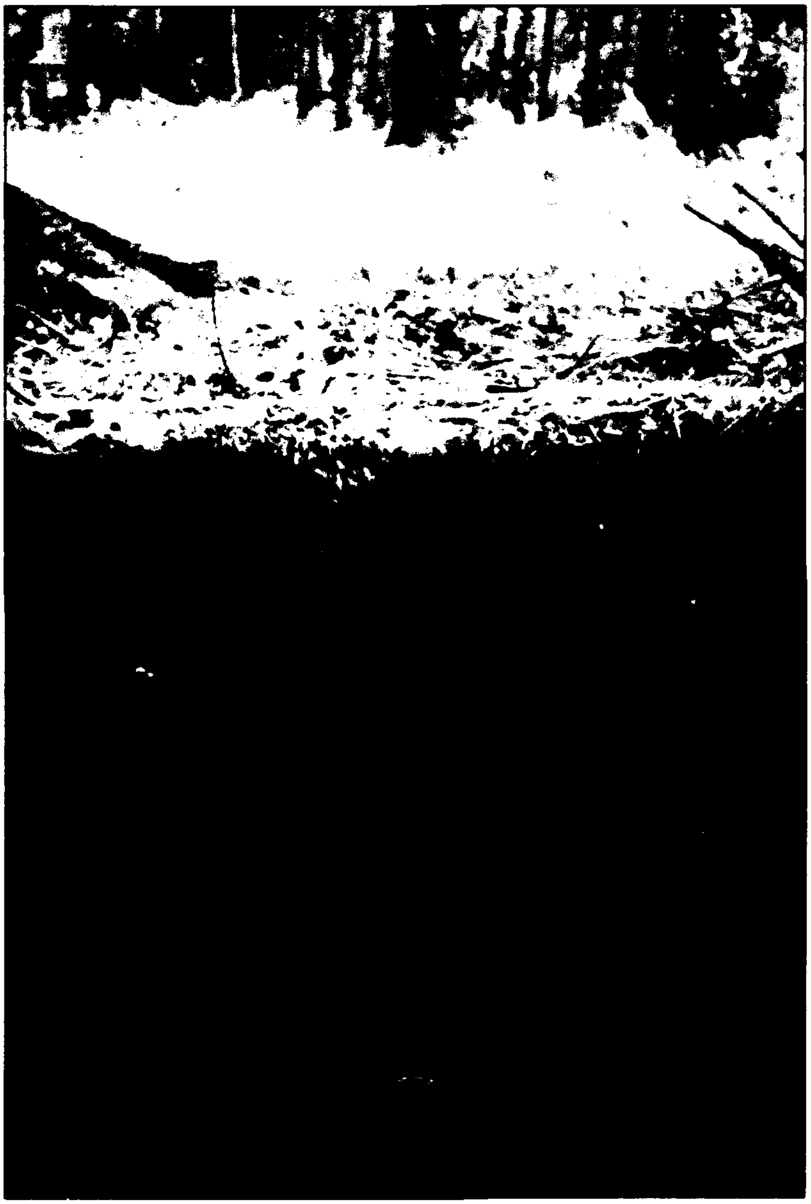


Figure 32
Features in Base of EU 1, 9Co45

Figure 33
Stratigraphy of EU 2, 9Co45



suggested that it represents redeposited slope wash, possibly pushed up onto the bank of the ridge to reduce gully erosion. Artifact density was high throughout the unit, including the levels excavated in the upper sand layer. Levels 1 through 3 contained pure segments of the sand layer, while Level 4 was slightly mixed with the lower dark brown plowzone. This lower layer was not more than 7 centimeters thick, indicating a good deal of erosion of the original plowzone. A small basal fragment of a prepared clay hearth (Feature 150) was identified in the northeast corner of the unit, demonstrating that plowing had severely impacted the site in this area.

TABLE 28. Stratigraphic Summary Data for Excavation Units, 9Co45.

EU	Size	Level	Level Type	Level Thick. *	Soil Texture	Munsell Color
1	2X2m	1	A	9.50 cm	Rocky Sandy Loam	7.5 YR 3/2
		2	A	10.75 cm	Rocky Sandy Loam	7.5 YR 3/2
		3	A	8.25 cm	Rocky Sandy Loam	10 YR 2/2
		F. 146-149	-	-	Rocky Sandy Loam	10 YR 2/3
2	2X2m	1	A	10.25 cm	Fine Sand	10YR 3/4
		2	A	12.75 cm	Fine Sand	10YR 3/4
		3	A	10.25 cm	Fine Sand	10YR 3/4
		4	A	10.50 cm	Fine Sand/Clay	10YR 3/4
		5	A	6.75 cm	Fine Sandy Clay	7.5YR 3/2
		F. 150	-	-	Oxidized Clay	10R 3/6
3	2X2m	1	A	8.75 cm	Sandy Loam	10YR 3/4
		2	A	7.75 cm	Sandy Loam	10YR 3/4
		3	A	3.50 cm	Sandy Clay Loam	10YR 3/4
		F.1/F.3	-	-	Loamy Clay	10YR 2/2
4	2X2m	1	A	10.75 cm	Rocky Sandy Loam	10YR 2/2
		2	A	9.25 cm	Rocky Sandy Loam	10YR 2/2
		3	A	6.50 cm	Rocky Sandy Loam	5YR 3/2
		F.112-114, 116, 119-120	-	-	Loamy Clay	7.5YR 2/2

Legend:

Level Type (A=Arbitrary).

* Level Thickness Values are Averaged from Terminal Elevations at Unit Corners.

Excavation Unit 3

Excavation Unit 3 was located between grid coordinates 521-523N and 538-540E, on the northern edge of Concentration 2. This unit was excavated in three arbitrary levels and extended to a depth average depth of only 20.00 centimeters below the ground surface. This deposit was a consistent dark yellowish brown (10YR 3/4) sandy loam throughout the first two levels. Level 3 represented a transition between plowzone and substrate and was therefore somewhat more clayey in composition. Two features were discovered in the base of the unit, the southern end of a large, oval pit (Feature 1) and a small post hole (Feature 3).

Excavation Unit 4

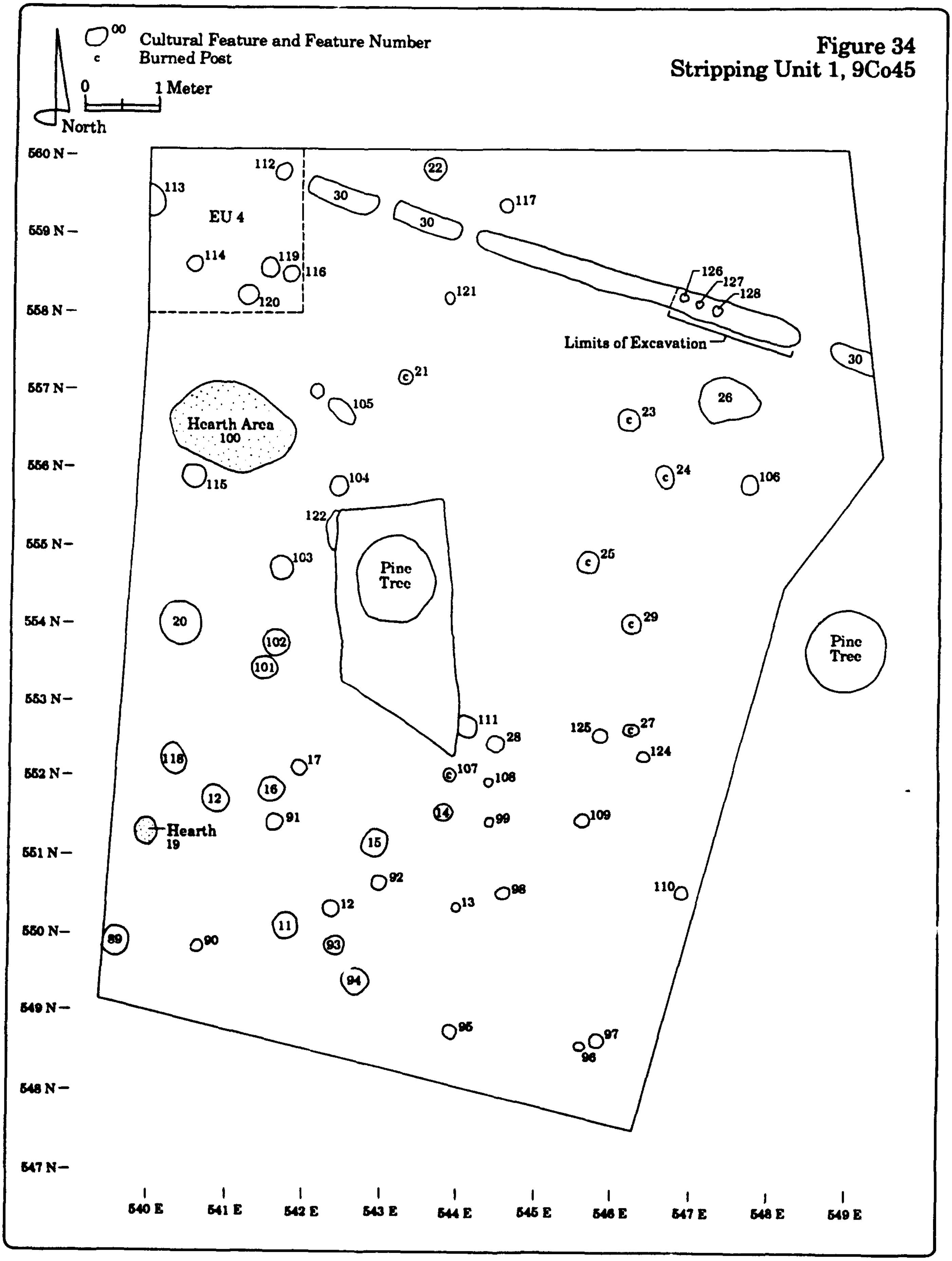
EU 4 was located in the central portion of the northern artifact concentration, between grid coordinates 558-560N/540-542E. The plowzone in this unit consisted of a very dark brown (10YR2/2) sandy loam and extended to an average depth of 26.50 centimeters below ground surface. A transitional zone similar to that observed in EU 3 was detected at the base of Level 3, resulting in a mixture of plowzone material and red clay substrate (5YR3/2). A cluster of five small (Features 112, 114, 116, 119, and 120) and one medium large post hole was identified at the base of the plowzone.

MACHINE STRIPPING

Machine stripping was accomplished with the use of a backhoe as was discussed in the Butler Creek Site report. When contact with substrate neared, final stripping and definition was accomplished with a combined technique consisting of alternate leveling with flat-nosed shovels and light combing with the backhoe bucket teeth. This procedure insured that very little damage impact occured in the subplowzone fill of features.

Decisions concerning the location and disposition of broad-side stripping units were ultimately finalized by a consideration of the test square results. It was inferred from these results that feature density was high throughout the identified artifact concentrations, just as was true at the Butler Creek Site, and stripping in any of these areas would probably produce a large sample of features. However, the areas around EU 3 and EU 4 appeared to provide the best conditions for defining features because historic agricultural damage was minimal here and the substrate contact was sharp and readily definable. The substrate in the area of EU 2 had been subjected to much greater erosional and agricultural damage, and the substrate around EU 1 was undulating and rocky.

An area of approximately 108 m^2 around EU 4 was stripped of plowzone over-burden and designated Stripping Unit 1 (Figure 34). Stripping Unit 2 covered approximately 56 m^2 in area and exposed a location south of EU 3 (Figure 35). Both units produced a high density of architectural and domestic features. Combined, they produced 137 additional features, primarily post holes. It is estimated that stripping resulted in the removal of approximately 32.35 m^3 of plowzone deposit.


Cultural Feature and Feature Number
Burned Post
1 Meter
North
Figure 34
Stripping Unit 1, 9Co45
EU 4
Limits of Excavation
Hearth Area
100
Pine Tree
Pine Tree
Hearth
19
560 N
559 N
558 N
557 N
556 N
555 N
554 N
553 N
552 N
551 N
550 N
549 N
548 N
547 N
540 E
541 E
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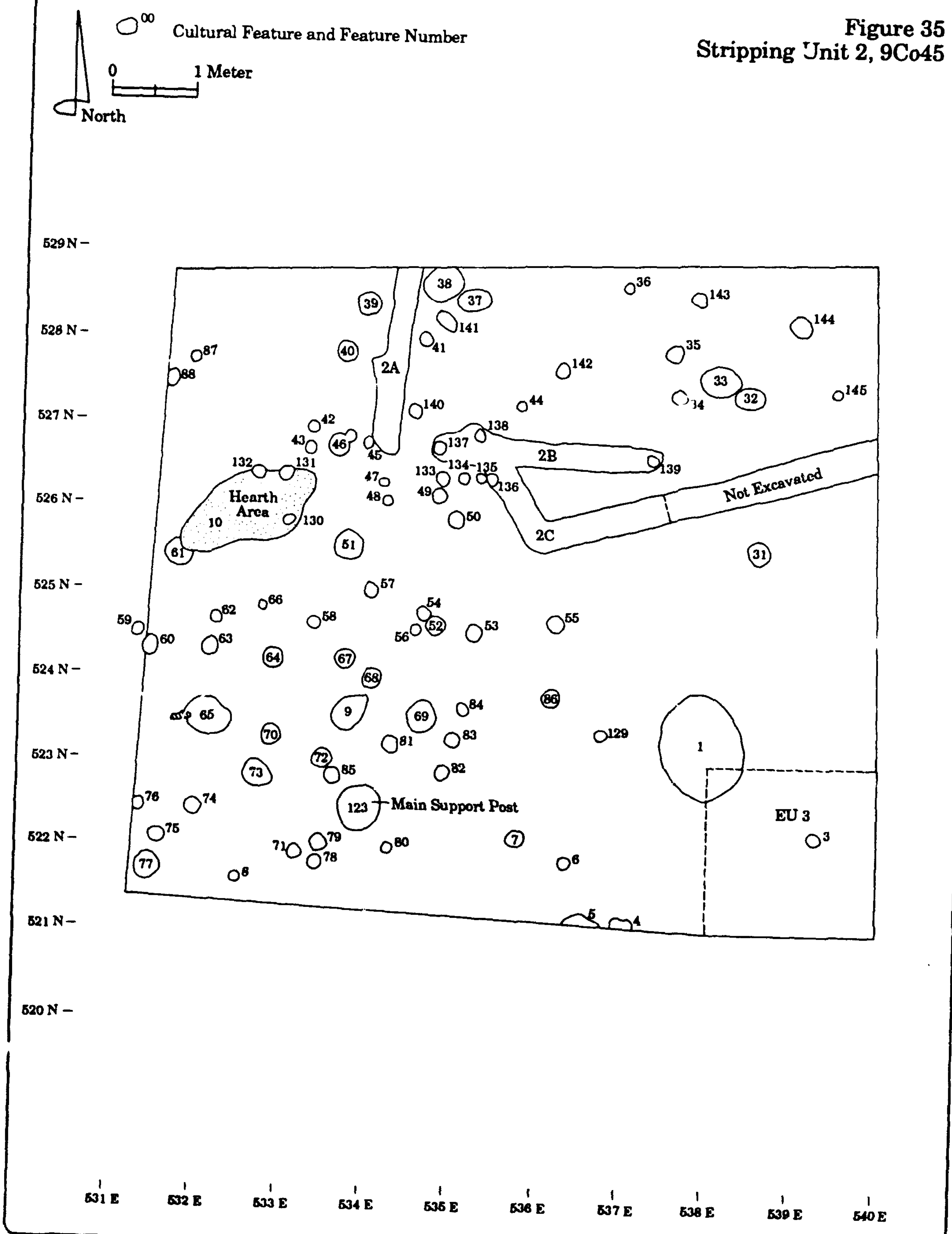


Figure 35
Stripping Unit 2, 9Co45

The results of stripping again confirmed a strong spatial association between high artifact density and feature concentrations. No areas outside of defined artifact concentrations were tested, so the inverse is not necessarily true. It would seem, however, that the artifact concentrations effectively define the core area of the site and it can be inferred that areas of low artifact density occur on the periphery. The abundance of architectural features in these units also strongly supports the notion that the artifact concentrations represent residential precincts. No coherent house patterns could be discerned at the level of exposure accomplished during testing, but very suggestive linear arrangements of posts were detected, especially in Stripping Unit 1 (Figure 34). The void in the central concentration was partially exposed in Stripping Unit 2, but a noticeable decrease in feature density was not documented. It is possible that the void reflects some type of historic disturbance that is now unobservable from the surface of the site. The high degree of superimposition of post patterns in this area, though, may indicate that the area was either set aside as a plaza or public use area for a portion of the site occupation or that the area was simply not subjected to heavy use for a period of time.

FEATURE DESCRIPTIONS

One-hundred and fifty (150) features were identified during testing at the Lake Acworth Site, including 2 pits, 138 post holes, 4 prepared clay hearths, 2 rodent/root holes, 2 smudge pits, a wall trench complex, and a single wall trench segment (palisade?). A listing of all of these features, along with their proveniences and their plan dimensions, is presented in Table 29. The northing and easting coordinates provide grid locations in the approximate center of each feature and plan dimensions are reported in centimeters. Descriptions of each feature category, and of individual features when appropriate, are presented below.

Pits

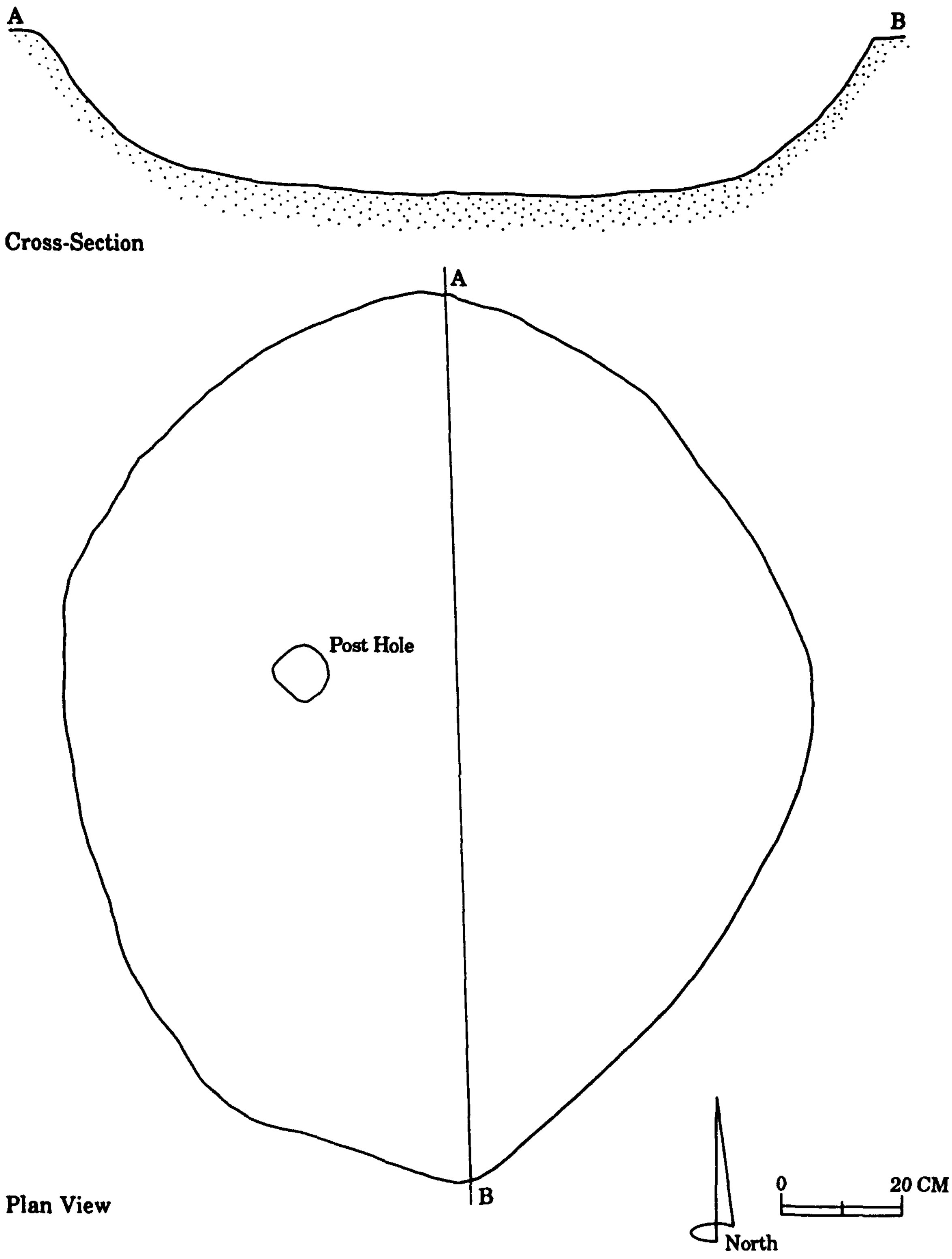
Two pits were identified during testing, one of which (Feature 1) was excavated. Each pit is described below.

Feature 1

Feature 1 was initially discovered in the northwest corner of EU 3, but was not fully exposed and defined until Stripping Unit 2 was extended to the north and west of the unit (see Figure 35). Once exposed, the pit was bisected with a north-south line and the fill in the west half was removed as a single level. The fill consisted of a very dark brown (10YR 2/2), clay loam, which was somewhat darker than the overlying dark yellowish brown (10YR 3/4) plowzone uncovered in EU 3. The exposed cross-section of fill appeared homogeneous in structure and did not exhibit discernible stratigraphic breaks. As a consequence, the remaining east

Figure 36
Feature 1, Pit, Oblique Overhead View, Stripping Unit 2, 9Co45

Figure 37
Feature 1, Pit, Plan and Section, Stripping Unit 2, 9Co45



half was also removed as a single fill unit. The pit outline and profile were well preserved and highly symmetrical (Figures 36 and 37). The plan was oval in shape and measured 1.28 meters X 1.44 meters. Although slightly truncated by the plowzone, there is very little probability that the pit orifice was originally incurved like a typical bell-shaped pit. The pit extended to a maximum depth of 29 centimeters below plowzone and the sides were steep and slightly bowed, similar in many respects to Feature 1 at the Butler Creek Site. The preserved pit volume equaled approximately 0.53 m^3 and artifact density was high (636/m^3). The sherd assemblage was consistently characterized by small sizes and it is inferred that all of the material was included in the pit as trash. Two pecked stone balls were among the artifacts, along with a quartz Gary Stemmed point that most certainly pre-dates the Mississippian occupation in the Allatoona Lake region. It is clear, however, that the pit belonged to the Mississippian occupation based on ceramic criteria. An uncalibrated radiocarbon date of 930 B.P. ± 90 was derived from dispersed charcoal within the pit. The sides of the pit did not appear to be highly oxidized, but it is possible that it may have been used as a roasting pit in which heat was secondarily added by heated stones or coals, as was discussed for Feature 1 at the Butler Creek Site. Corn, nutshell, and a possible grape seed were identified in the flotation sample from the pit, but all macroplant remains were fragmental and suggest trash inclusion.

TABLE 29. Listing of Features, Proveniences and Plan Dimensions, 9Co45.*

Feature	Feature Type	Unit Provenience	Northing	Easting	Length	Width
1	Oval Pit	EU 3 & SU 2	523.3	537.9	144	128
2A	Wall Trench Segment	SU 2	527.7	534.3	216+	31
2B	Wall Trench Segment	SU 2	526.7	536.1	271	30
2C.1	Wall Trench Segment	SU 2	526.1	535.7	120	29
2C.2	Wall Trench Segment	SU 2	526.2	538.0	403	40
3	Small Post Hole	EU 3	522.2	539.3	15	14
4	Small Post Hole	SU 2	521.1	537.0	13+	24
5	Medium Post Hole	SU 2	521.1	536.6	33	13+
6	Small Post Hole	SU 2	521.8	536.4	14	13
7	Small Post Hole	SU 2	522.1	535.8	20	20
8	Small Post Hole	SU 2	521.6	532.5	12	10
9	Large Post Hole	SU 2	523.6	533.8	51	35
10	Truncated Clay Hearth	SU 2	526.0	532.6	175	90
11	Medium Large Post Hole	SU 1	550.1	541.8	38	31
12	Small Post Hole	SU 1	550.3	542.4	23	20
13	Small Post Hole	SU 1	550.3	544.0	10	10
14	Medium Post Hole	SU 1	551.5	543.8	24	23
15	Medium Large Post Hole	SU 1	551.1	543.0	34	33
16	Medium Large Post Hole	SU 1	551.8	541.6	33	31
17	Small Post Hole	SU 1	552.1	542.0	18	18
18	Medium Large Post Hole	SU 1	551.7	540.9	36	33
19	Truncated Clay Hearth	SU 1	551.3	540.0	35	28
20	Large Post Hole	SU 1	554.0	540.5	54	53
21	Small Post Hole (Charcoal)	SU 1	557.2	543.3	18	18
22	Medium Post Hole	SU 1	559.9	543.7	28	25

TABLE 29. Listing of Features, Proveniences and Plan Dimensions, 9Co45* (Continued).

Feature	Feature Type	Unit Provenience	Northing	Easting	Length	Width
23	Medium Post Hole (Charcoal)	SU 1	556.6	546.2	28	28
24	Medium Post Hole (Charcoal)	SU 1	555.9	546.7	30	23
25	Medium Post Hole (Charcoal)	SU 1	554.8	545.7	30	28
26	Oval Pit	SU 1	556.9	547.5	79	58
27	Small Post Hole (Charcoal)	SU 1	552.6	546.2	18	16
28	Small Post Hole	SU 1	552.4	544.5	22	20
29	Medium Post Hole	SU 1	554.0	546.2	23	23
30	Wall Trench (Palisade ?)	SU 1	558.5	545.5	760	30
31	Medium Post Hole	SU 2	525.5	538.6	26	26
32	Medium Post Hole	SU 2	527.4	538.5	34	23
33	Large Post Hole	SU 2	527.6	538.1	46	34
34	Small Post Hole	SU 2	527.4	537.6	16	15
35	Small Post Hole	SU 2	527.9	537.5	20	20
36	Small Post Hole	SU 2	528.6	537.0	11	10
37	Medium Large Post Hole	SU 2	528.4	535.2	40	24
38	Large Post Hole	SU 2	528.6	534.8	48	38
39	Medium Post Hole	SU 2	528.4	534.0	28	25
40	Medium Post Hole	SU 2	527.8	533.7	24	21
41	Small Post Hole	SU 2	528.0	534.6	15	15
42	Small Post Hole	SU 2	526.9	533.3	15	14
43	Small Post Hole	SU 2	526.7	533.3	11	10
44	Small Post Hole	SU 2	527.2	535.8	10	10
45	Small Post Hole	SU 2	527.8	534.0	10	8
46	Medium Post Hole	SU 2	526.3	533.6	25	25
47	Small Post Hole	SU 2	526.3	534.1	8	8
48	Small Post Hole	SU 2	526.1	534.2	10	9
49	Small Post Hole	SU 2	526.1	534.8	18	17
50	Small Post Hole	SU 2	525.9	535.0	19	17
51	Medium Large Post Hole	SU 2	525.5	533.8	35	33
52	Small Post Hole	SU 2	524.6	534.8	21	20
53	Small Post Hole	SU 2	524.5	535.3	20	20
54	Small Post Hole	SU 2	524.6	534.7	17	14
55	Small Post Hole	SU 2	524.7	536.2	20	18
56	Small Post Hole	SU 2	524.5	534.6	10	10
57	Small Post Hole	SU 2	525.0	534.0	16	15
58	Small Post Hole	SU 2	524.6	533.4	10	10
59	Small Post Hole	SU 2	524.5	531.3	13	12
60	Small Post Hole	SU 2	524.3	531.4	23	18
61	Medium Large Post Hole	SU 2	525.4	531.8	33	31
62	Small Post Hole	SU 2	524.7	532.3	13	12
63	Small Post Hole	SU 2	524.3	532.2	19	18
64	Medium Post Hole	SU 2	524.2	532.9	25	23
65	Large Post Hole	SU 2	523.5	532.2	50	43
66	Small Post Hole	SU 2	524.8	532.8	11	10
67	Medium Post Hole	SU 2	524.2	533.7	23	23
68	Small Post Hole	SU 2	524.0	534.1	21	20
69	Medium Large Post Hole	SU 2	523.5	534.7	38	30
70	Medium Post Hole	SU 2	523.3	532.9	24	23

TABLE 29. Listing of Features, Proveniences and Plan Dimensions, 9Co45* (Continued).

Feature	Feature Type	Unit Provenience	Northing	Easting	Length	Width
71	Small Post Hole	SU 2	521.9	533.2	16	14
72	Medium Post Hole	SU 2	523.0	533.5	24	23
73	Medium Large Post Hole	SU 2	522.8	532.7	32	30
74	Small Post Hole	SU 2	522.4	532.0	20	18
75	Small Post Hole	SU 2	522.1	531.6	19	17
76	Small Post Hole	SU 2	522.5	531.3	12	12
77	Medium Large Post Hole	SU 2	521.7	531.5	32	31
78	Small Post Hole	SU 2	521.8	533.4	16	15
79	Small Post Hole	SU 2	522.0	533.5	17	17
80	Small Post Hole	SU 2	522.0	534.3	13	13
81	Small Post Hole	SU 2	523.2	534.3	20	18
82	Small Post Hole	SU 2	522.9	534.9	18	18
83	Small Post Hole	SU 2	523.3	535.0	15	15
84	Small Post Hole	SU 2	523.6	535.1	15	13
85	Small Post Hole	SU 2	522.8	533.6	19	18
86	Small Post Hole	SU 2	523.8	536.2	21	20
87	Small Post Hole	SU 2	527.7	532.0	13	12
88	Small Post Hole	SU 2	527.5	531.7	17	14
89	Medium Large Post Hole	SU 1	549.9	539.6	38	30
90	Small Post Hole	SU 1	549.8	540.7	15	13
91	Small Post Hole	SU 1	551.4	541.7	22	20
92	Small Post Hole	SU 1	550.6	543.0	18	17
93	Medium Post Hole	SU 1	549.8	543.5	24	21
94	Medium Large Post Hole	SU 1	549.4	542.7	33	29
95	Small Post Hole	SU 1	548.7	543.9	18	15
96	Small Post Hole	SU 1	548.4	545.6	12	12
97	Small Post Hole	SU 1	548.5	545.8	18	17
98	Small Post Hole	SU 1	550.5	544.6	16	15
99	Small Post Hole	SU 1	550.4	544.4	13	12
100	Truncated Clay Hearth	SU 1	556.5	541.1	163	113
101	Medium Large Post Hole	SU 1	553.4	541.6	31	30
102	Medium Large Post Hole	SU 1	553.7	541.7	33	32
103	Medium Post Hole	SU 1	554.7	541.8	29	28
104	Medium Post Hole	SU 1	555.8	542.5	24	23
105	Root/Rodent Hole ?	SU 1	556.7	542.5	43	21
106	Small Post Hole	SU 1	555.8	547.8	24	20
107	Small Post Hole (Charcoal)	SU 1	552.0	543.9	15	15
108	Small Post Hole	SU 1	551.9	544.4	11	11
109	Small Post Hole	SU 1	551.5	545.6	16	16
110	Small Post Hole	SU 1	550.5	546.9	17	15
111	Medium Post Hole	SU 1	552.7	544.1	30	28
112	Small Post Hole	SU 1 & EU 4	559.8	541.8	24	20
113	Medium Large Post Hole	SU 1 & EU 4	559.4	540.0	39	15 (+)
114	Small Post Hole	SU 1 & EU 4	558.6	540.6	22	20
115	Medium Post Hole	SU 1	555.9	540.6	28	26
116	Medium Post Hole	SU 1 & EU 4	558.5	541.8	25	21
117	Small Post Hole	SU 1	559.4	544.6	15	15
118	Medium Large Post Hole	SU 1	552.2	540.4	39	33

TABLE 29. Listing of Features, Proveniences and Plan Dimensions, 9Co45* (Continued).

Feature	Feature Type	Unit Provenience	Northing	Easting	Length	Width
119	Medium Post Hole	SU 1 & EU 4	558.6	541.6	25	23
120	Medium Post Hole	SU 1 & EU 4	558.2	541.3	26	25
121	Small Post Hole	SU 1	558.2	543.9	13	12
122	Small Post Hole	SU 1	557.0	542.2	18	18
123	Large Post Hole	SU 2	522.4	533.9	53	50
124	Small Post Hole	SU 1	552.3	546.4	13	13
125	Small Post Hole	SU 1	552.5	545.9	18	18
126	Small Post Hole	SU 1	558.2	546.9	10	10
127	Small Post Hole	SU 1	558.1	547.1	10	9
128	Small Post Hole	SU 1	558.0	547.3	11	11
129	Small Post Hole	SU 2	523.4	536.7	12	12
130	Small Post Hole	SU 2	525.8	533.1	12	12
131	Small Post Hole	SU 2	526.4	533.0	13	12
132	Small Post Hole	SU 2	526.4	532.7	14	13
133	Small Post Hole	SU 2	526.3	534.9	18	15
134	Small Post Hole	SU 2	526.3	535.1	15	13
135	Small Post Hole	SU 2	526.3	535.3	9	8
136	Small Post Hole	SU 2	526.3	535.4	15	12
137	Small Post Hole	SU 2	526.7	534.8	14	13
138	Small Post Hole	SU 2	526.9	535.3	13	10
139	Small Post Hole	SU 2	526.6	537.3	11	11
140	Small Post Hole	SU 2	527.1	534.5	15	13
141	Rodent/Root Hole ?	SU 2	528.2	534.9	25	13
142	Small Post Hole	SU 2	527.6	536.2	15	15
143	Small Post Hole	SU 2	528.5	537.8	18	18
144	Medium Post Hole	SU 2	528.2	539.0	25	24
145	Small Post Hole	SU 2	527.4	539.5	10	10
146	Small Post Hole	EU 1	459.7	547.5	15	14
147	Small Post Hole	EU 1	459.4	547.5	14	13
148	Small Post Hole	EU 1	459.3	546.9	16	14
149	Small Post Hole	EU 1	458.9	547.8	15	15
150	Truncated Clay Hearth	EU 2	491.7	507.2	30	24

*Feature Dimensions (ie Length and Width) are reported in centimeters.

Feature 26

Feature 26 was identified in Stripping Unit 1 (Figure 34) as an oval stain measuring 0.58 meters X 0.79 meters. It was not excavated and was classified as a pit solely on the basis of size.

Prepared Clay Hearths

Four prepared clay hearths probably associated with house interiors were identified during testing at the Lake Acworth Site . All were severely impacted and truncated by plowing and only portions of the lower foundations of these features remained. The smoothed clay hearth basins normally associated with these kinds of features were totally destroyed by plowing with the exception of Feature 10. In this case a small remnant of the plastered base was recovered. Each of these hearths is discussed below.

Feature 10

This hearth was initially discovered during mechanical stripping in SU 2 (Figure 35). It appeared as a jumble of red (10R3/6), oxidized clay chunks distributed in an irregular oval area measuring 0.90 by 1.75 meters. A north-south bisectional line was established across the short dimension of the feature and the west half was removed to expose a profile of the hearth remnant. Although several of the hearths had been treated in this fashion during the project, none had exhibited any positive evidence for a central, plastered clay basin depression. Happily, Feature 10 was the exception. In this instance the very base of one of these depressions was detected as shown in Figure 38. It measured 7 centimeters in cross-sectional length and was situated 15 centimeters below the level of the stripped surface.

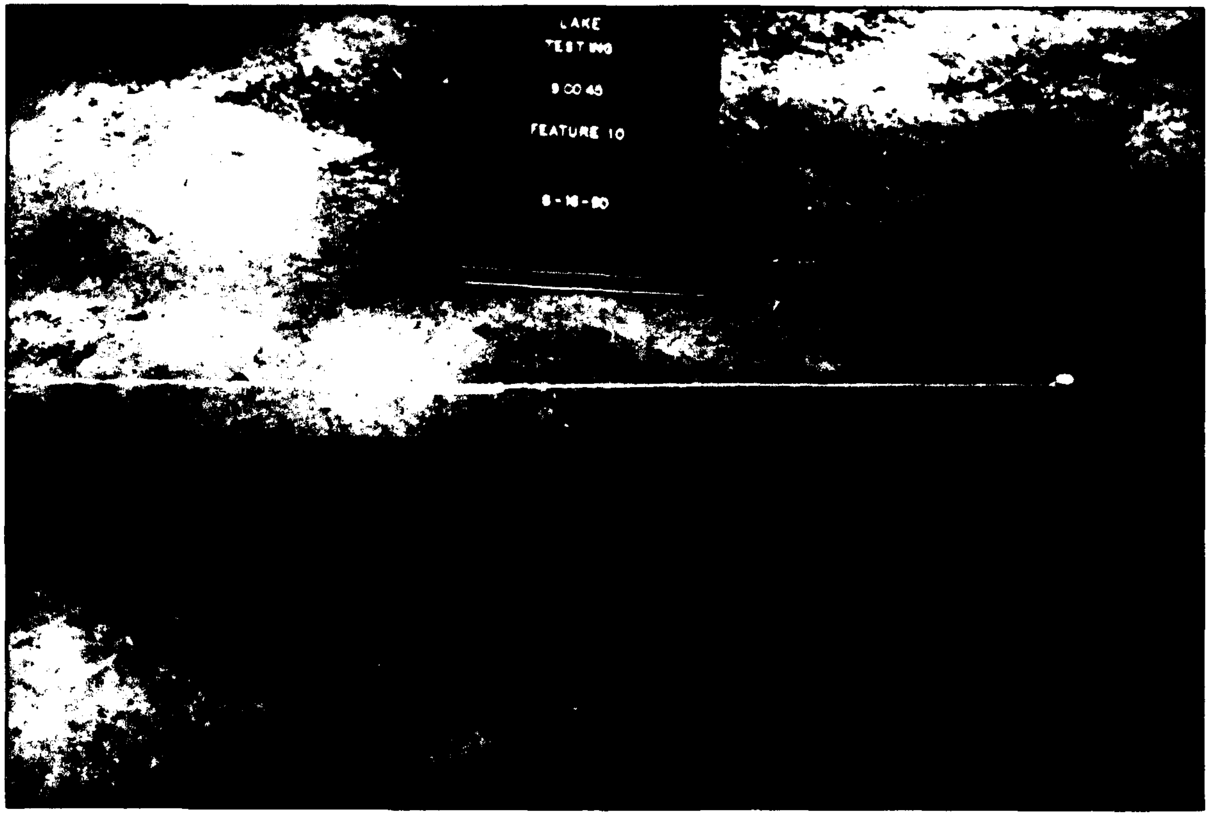
Feature 19

This hearth remnant was identified in the southwest corner of SU 1. It appeared as a subcircular patch of red (10YR3/6) clay measuring 0.28 by 0.35 meters. No further work was undertaken on this feature since it appeared that it had been completely displaced by plowing.

Feature 100

Feature 100 appeared as a large, irregular oval of fragmented chunks of dark red (10R2/2), oxidized clay in the northwest quarter of SU 1 (Figure 34). It measured 1.13 by 1.63 meters. The feature was sectioned in a north-south orientation and the eastern half was removed to expose a vertical profile in search of a plastered central depression. The hearth, however, had been completely destroyed by plowing and no evidence of such an element was found. A flotation sample was taken from the fill of the east half of the hearth area. It contained wood charcoal, corn cupules, nutshell and oxidized fragments of the hearth with grass impressions. It is likely that this flotation sample represents a mixed provenience of hearth material and material from the surrounding midden remnant.

Figure 38
Feature 10, Prepared Clay Hearth,
Vertical Profile, Stripping Unit 2, 9Co45



Feature 150

This feature was identified in the base of EU 2 and appeared as a small, irregular patch of red (10R3/6), oxidized clay. The oval measured 0.24 by 0.30 meters. No further excavation was undertaken as the hearth had been totally fragmented by plowing.

Post Holes

One hundred and thirty-eight features were identified as post holes in the testing exposures. These were grouped into four size classes based on the plotted frequency distribution modes for plan area. Small post holes were the most numerous (n=92) and ranged between 64 and 480 cm^2 in area. Medium post holes, of which there were 24, ranged between 504 and 840 cm^2. The 16 medium large post holes ranged between 930 and 1287 cm^2 and the 6 large post holes had a range of 1,564 to 2,862 cm^2. Information on the size class, location, and dimension of each post hole is presented in Table 29. Ten of these features were excavated in order to confirm that at least most of the stains observed in the exposed substrate represented post holes rather than disturbance features such as root holes. Five of these were small post holes in SU 1 (Features 12, 17, 28, 97, and 117), while the remaining 5 were classified as medium post holes (Features 23, 24, 25, 116, 123). The results of excavation for each of these groups are discussed below.

Small Post Holes

All of the selected features identified as small post holes were confirmed to be so through excavation. The common cross-sectional profile was a blunted, tapered basin. Depths below the stripped surface ranged between 8 and 13 centimeters .

Medium Post Holes

Four of the five medium post holes (i.e. Features 23, 24, 25, and 116) contained large amounts of charcoal that were thought to be the remains of burned posts. Excavations, which constituted cross-sectional removal of fill from one half of each feature, confirmed that each of these features possessed the blunted, tapered profile indicative of post holes. Very little of the features remained, however, as they had been seriously truncated by plowing and stripping. Depths below the stripped area ranged from only 4 to 11 centimeters. Flotation samples were analyzed from each of these features to examine the possibility that they might represent some other feature type. Although other items were present, most notably nutshell and tall cane, each of these features contained a predominance of wood charcoal, further supporting the post hole identification. These features may represent a single burned structure located in the north half of SU 1. There apparent high vertical position may also indicate that this structure was associated with a terminal occupation at the site.

A single post hole (Feature 123) was excavated in SU 2 (Figures 35, 39 and 40). The feature was bisected and the fill from the east half was removed to expose the profile. The fill consisted of a dark brown (10YR 2/2) sandy loam; the profile exhibited the characteristics of a roof support post. The upper portion was expanded and tapering, the lower portion narrowed and straightened, and the termination was nearly flat. The plan was nearly circular (0.50 by 0.53 meters) and extended to a depth of 31 centimeters below the stripped surface. A rock in the upper portion of the fill may have been used to "chink" the sides of the post.

Smudge Pits

Two features (Features 21 and 29) were determined, through flotation analysis, to represent smudge pits (see Binford 1967, Schroedel 1986, Schroedel and Shea 1986). Their spatial association with the charred posts in SU 1 initially suggested that they might represent post holes as they contained large amounts of carbonized material (Figure 34). Flotation analysis, however, indicated that the contents of the pits included exceptionally large amounts of corn (Feature 21) and nutshell (Feature 29). Features containing such remains are generally considered to represent smudging facilities, primarily for repelling insect pests such as mosquitoes. This might provide evidence for a spring or summer occupation at the site. The sizes of the pits (Feature 21 was 18 centimeters in diameter and 7 centimeters deep and Feature 29 was 23 centimeters in diameter and 11 centimeters deep) are well within the range reported for smudge pits in the Eastern United States. An uncalibrated Radiocarbon date of A.D. 1510 ± 70 from corn in Feature 21 indicates a relatively late date for these features. In light of the observations made about the lateness of the charred posts in the general vicinity it is possible that the smudge pits and this group of post holes were contemporaneous and in some way functionally associated.

Wall Trench Segments

Two wall trench features were identified as a result of stripping activities. Feature 30 is a long, single trench line located in the northern end of SU1 (Figure 34), while Feature 2 is a complex of wall segments in SU 2 (Figure 35) that may represent superimposed houses. Each of these is discussed in greater detail below.

Feature 2

Feature 2 consists of three (A,B, and C) segments of differing shapes, lengths and orientations (Figures 35 and 41). Segment 2A averaged 30 centimeters in width and the portion exposed in SU 2 was 2.16 meters in length.

Figure 39
Feature 123, Post Hole, Oblique
Overhead View, Stripping Unit 2, 9Co45

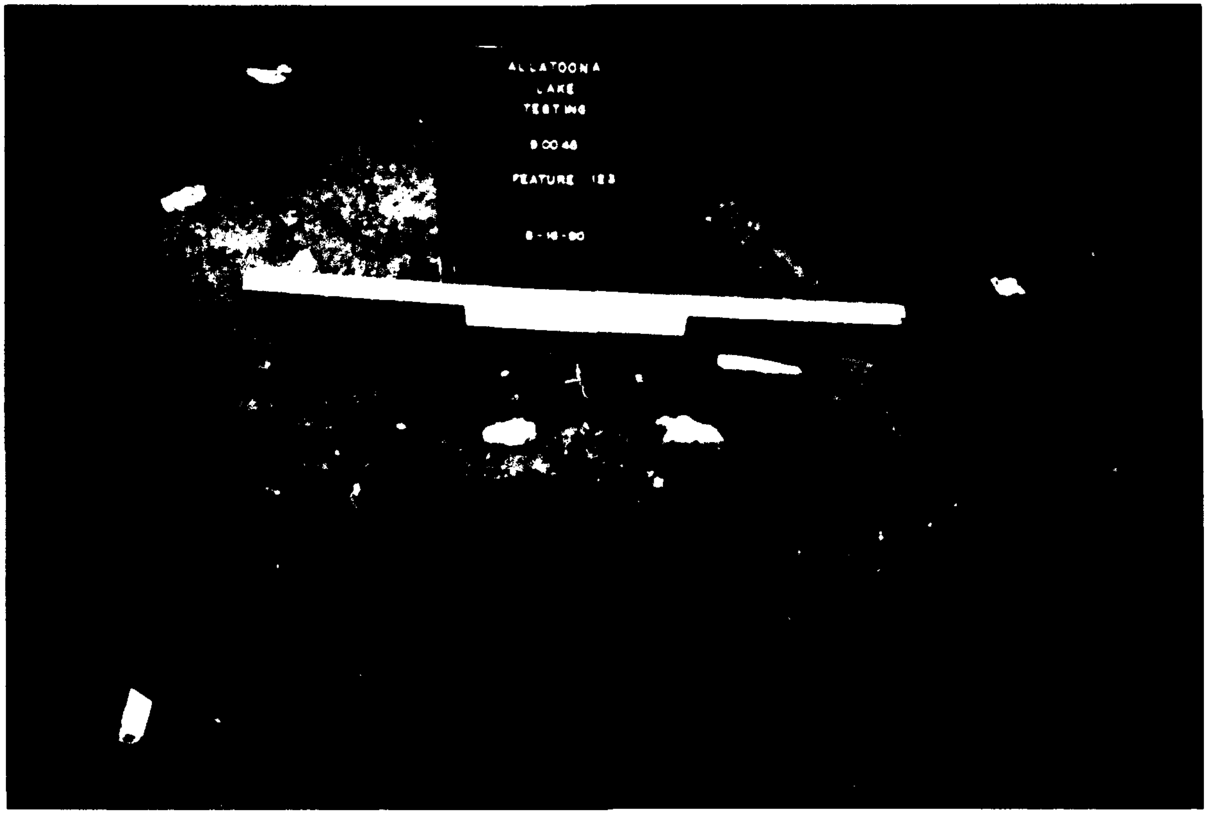
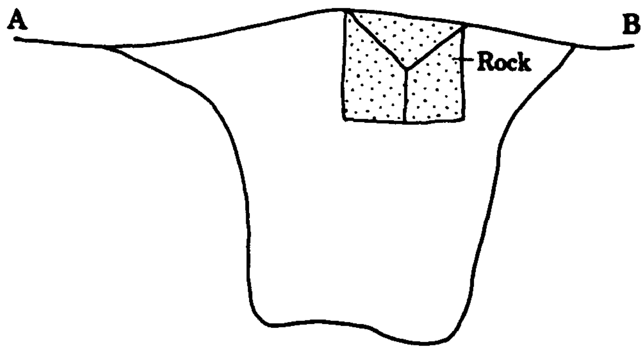
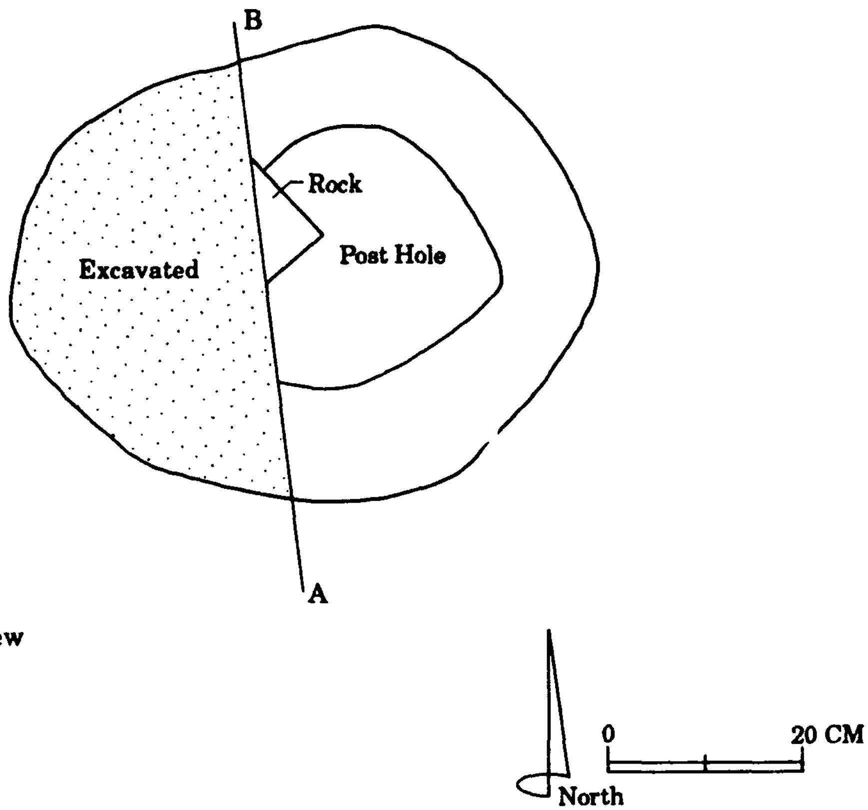


Figure 40
Feature 123, Post Hole, Plan and Section, 9Co45



Profile



Plan View

Figure 41
Feature 2A, 2B, 2C, Wall Trench Segments, Oblique View, 9Co45

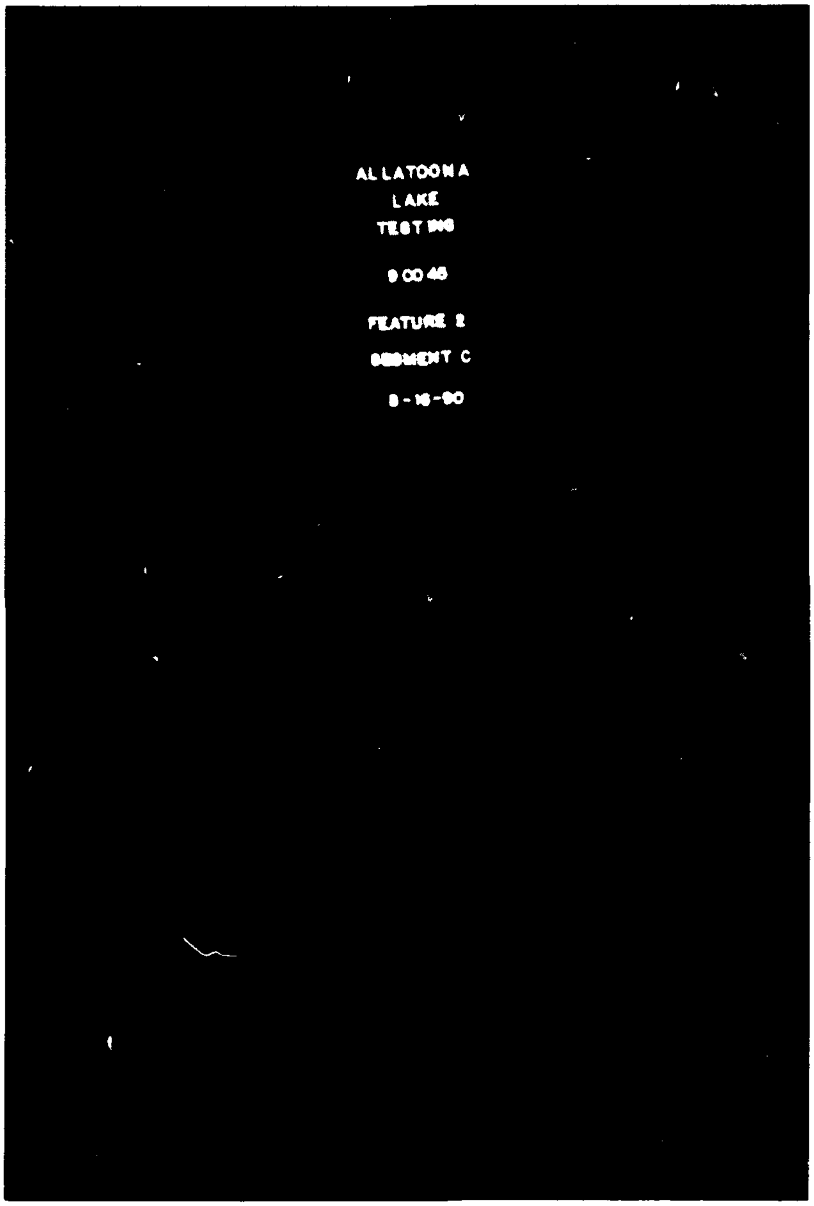
Excavation of this segment indicated a preserved depth of 7 to 14 centimeters below the stripping level. Segment 2B also averaged 30 centimeters in width and measured 2.71 meters in length. Total excavation of this segment indicated a depth of 7 to 13 centimeters below the stripped level. Segment 2C intersected 2B at its northern end. This segment had a bend in it that was suggestive of a house corner. The shorter of the tow portions measured 1.20 meters in length, while the other was 4.03 meters in length. Segment 2C was only partially excavated as indicated in Figure 35. The depth of the trench descended eastward from an elevation of about 7 centimeters at the intersection with with Segment B to a depth of 29 centimeters at the far eastern end of the excavated portion (Figure 42). Although Segments B and 2C appear to be superimposed, no evidence of their chronological relationship could be obtained from excavation. Elevation was identical at the point of intersection and the fill in this area appeared to be a homogeneous dark yellowish brown (10YR 3/4) sandy clay loam. However, the differences in size and cross-sectional profile indicate that Segment 2C is probably not associated with Segments 2A and 2B. Both of the latter segments exhibited simple basin profiles and maintained an average width of ca. 30 centimeters , while Segment 2C extended to a width of 40 centimeters and a cross-sectional profile in which one side was basin shaped and the other was abruptly straight (Figure 42). Moreover the orientation of Segment 2C is askew to the other two segments, which are aligned perpendicularly to one another. Taken together, these lines of evidence suggest that the complex represents the corners of two superimposed wall trench structures.

In spite of the large exposures in these trenches very few post holes were found, and those that were cannot be positively associated with the trenches because no consistent spacing pattern was identifiable. This is not an uncommon characteristic of wall trench buildings of the Mississippian Period, however. Moundville Phase (Peebles 1978:377-381) houses of this type, for instance, rarely exhibit coherent lines of post holes and it is speculated that the posts were not always set as far down as the base of the trenches in many instances. The recovery of lines of post holes in some of these features, often from only one of four otherwise identical trenches of the same house, indicates that these trenches were, in fact, for setting posts. The Moundville Phase houses, in many respects, may provide a good model for the type of wall trench structures represented at the Lake Acworth Site. Typical residential houses were square, ranging between 4 and 6 meters on a side, and many times exhibited breaks at the corners of the structures, similar to the situation identified for Segments 2A and 2B. A flotation sample from Segment 2C was analyzed, but preservation was very poor. The primary constituents of the sample were nutshell and pine charcoal.

Feature 30

This feature was represented by a single, linear wall trench that appears to cross the entire length of the northeast corner of SU 1 and to extend further in both directions (Figure 34). A linear arrangement of three small post holes (Features 126-128) were identified at the base of the trench in the 1.7 meters

Figure 42
Feature 2C, Wall Trench Segment
Partially Excavated, Oblique View, 9Co45



segment that was excavated. The direction of slope for Feature 30 is similar to that described for Segment 2C, it increases in depth to the east. Most of the trench was above the plowzone in the western half of the unit and only remnant segments could be identified there. Feature 112, a medium post hole in the extreme northeast corner of EU 4, may represent a remnant of the wall trench also. The measurable length of the exposed segment was 7.61 meters and the average width equaled 0.30 meters. The depth of the preserved wall trench was only 9 centimeters in the area excavated. The long sustained linearity and location at the perimeter of the site core suggests that this feature may have served as a palisade wall for the village at one time. The palisades at the Woodstock Fort Site (Caldwell 1957:119-125) and Etowah (Hally and Langford 1988:65) were elaborately constructed and surrounded on the perimeter by substantial ditches. If Feature 30 represents a portion of a palisade fort complex it is unlikely that it would be as elaborate as these examples, but it may still consist of small scale defensive structures such as towers and could be surrounded by a ditch. It should be stressed, however, that this feature cannot be confirmed to represent a palisade wall at present.

ARTIFACT DESCRIPTIONS

Artifacts recovered during the test excavations consisted of only two primary categories, prehistoric ceramics and lithics. Lithic artifacts totalled 2,447 pieces of debitage and 139 tools, while ceramic artifacts totalled 3,972 individual sherds. The results of analysis for each of these broad artifact categories will be discussed in turn below.

Prehistoric Ceramics

Prehistoric ceramic artifacts consisted of 3,149 body sherds, 144 rim sherds, 5 discoidals, 1 node, 1 basal support, 2 straps, 487 eroded sherds, and 183 fragments of daub and fired clays . Plain surface treatment dominates the assemblage (n=2,786), while 510 sherds exhibited evidence of decoration. Four-hundred and ten (410) sherds had stamped designs, 77 sherds from this group were incised, and 23 sherds exhibited other surface treatments (i.e cord marked=2, punctate=7, punctate and incised=2, and corn cob impressed=9). Seventy-four of the decorated sherds could be further identified to culture historic type. Wilbanks Complicated Stamped (59.5%) was the most abundant diagnostic ceramic identified, while lesser quantities of Etowah Complicated Stamped (16.2%), Etowah/Wilbanks Complicated Stamped (12.2 %), Lamar Series Ceramics (9.5%), Swift Creek Complicated Stamped (1.4%), and Napier Complicated Stamped (1.4%) were recovered. The ceramic assemblage indicates that 9Co45 was a multicomponent site, with the primary occupations dating from the Middle to the Late Mississippian Periods. The presence of Swift Creek and Napier ceramics suggests that there was a minor Late Woodland component as well.

The description and discussion to follow is broken into three parts. The first part will describe the various culture historic and analytic categories identified from the site. This will be followed by a discussion of rim sherd morphologies and functional characteristics of the assemblage. The final part will then present a broader consideration of the culture historic position of the ceramic assemblage within the Northwest Georgia regional sequence.

Analytical Ceramic Categories

Frequency data by provenience for the various generic categories of ceramic surface treatment are presented in Table 30, while frequencies of culture historic types by provenience can be consulted in Table 31. Each of the categories identified in the ceramic analysis are described and discussed below.

Swift Creek Complicated Stamped

One Swift Creek Complicated Stamped body sherd (Figure 43a) was identified at 9Co45. the primary a-plastic inclusions in the paste were fine mica and some quartz sand grit. The design motif on this sherd included both rectilinear and curvilinear elements. The surface decoration was delicate and finely executed. The design included line block fillers and a concentric circle motif with a cross in it's center. The sherd was buff on it's exterior surfaces with a dark brown core.

Napier Complicated Stamped

One Napier Complicated Stamped rim sherd (Figure 45j) was identified. This sherd had a rolled rim form. It was dark gray in color, which indicates a reduced firing atmosphere. The primary a-plastic inclusions were fine mica and grit. The finely executed rectilinear surface treatment is a classic example of Napier Series ceramics as described by Wauchope (1966:57-60).

Etowah Complicated Stamped

Twelve Etowah Complicated Stamped sherds (Figure 43b-h) were identified, including 1 rolled rim and 11 body sherds. Nine sherds had substantial amounts of fine grit in their paste, while 3 sherds were tempered with coarse quartz sand. The surface treatments of this assemblage included 10 rectilinear motifs, 1 curvilinear and rectilinear motif, and 1 curvilinear motif. The designs used elements that included line block motifs and 1 two-bar diamond (Figure 43i). These sherds closely resemble the type descriptions offered by Caldwell (1957:45-47, 324-342), Hally and Langford (1988:24, 26), Sears (1958), and Wauchope (1966:64-69). The identified motifs suggest a Late Etowah age (Etowah III-IV) Phase ceramic assemblage (see Hally and Langford 1988:32, 56-57, 62 for the arguments that favor collapsing the Etowah III and IV Phases that were recognized at the Allatoona Reservoir into one phase).

TABLE 30. Frequency Distribution of Ceramic Surface Treatment Categories, 9Co45.*

Prov	Level	Plain	CS	Un S	C Im	Punc	Incis	P&I	CM	Unid	Totals
EU1	L1	117	11	18	4	-	3	-	-	23	176
	L2	187	16	10	1	2	4	-	-	11	231
	L3	37	2	1	-	-	2	-	-	3	45
EU2	L1	355	35	40	1	1	10	-	-	62	504
	L2	286	28	15	2	-	4	-	-	9	344
	L3	171	16	17	1	-	10	-	-	79	294
	L4	96	11	11	-	-	2	-	-	66	186
	L5	46	2	8	-	-	1	-	-	19	76
EU3	L1	273	8	9	-	1	6	1	-	35	333
	L2	202	6	7	-	-	2	1	-	4	222
EU4	L1	64	2	3	-	1	4	-	-	11	85
	L2	120	4	10	-	1	4	-	-	30	169
	L3	34	8	2	-	-	3	-	-	9	56
F.1		186	30	16	-	-	5	-	1	31	269
F.2		127	9	1	-	1	3	-	-	1	142
F.10		11	-	-	-	-	2	-	-	-	13
F.30		2	-	-	-	-	-	-	-	1	3
F.123		6	1	-	-	-	1	-	-	-	8
Totals		2320	189	168	9	7	66	2	1	394	3111

Key: Plain - Plainware; CS - Complicated Stamped; Un S - Unidentified Stamped; C Im - Corncob Impressed; Punc - Punctate; Incis - Incised; P&I - Punctate and Incised; CM - Cord Marked; Unid - Unidentified

*Frequencies do not include ceramics recovered from shovel tests.

TABLE 31. 9Co45 Culture Historic Ceramics.*

Prov	Level	WC	E/WC	EC	L	Miss	Wood	NC	SC	Total
U1	L1	3	4	1	-	-	-	-	-	8
U1	L2	3	1	1	-	-	-	-	-	5
U1	L3	-	-	1	-	-	-	-	-	1
U2	L1	7	1	-	-	-	-	-	-	8
U2	L2	5	2	2	-	1	-	-	-	10
U2	L3	3	1	1	1	-	-	-	-	6
U2	L4	-	-	-	-	-	3	-	-	3
U2	L5	-	-	1	-	-	-	-	-	1
U3	L1	2	-	-	-	-	-	-	-	2
U3	L2	-	-	3	-	-	-	-	-	3
U4	L2	-	-	-	-	1	-	-	-	1
U4	L3	4	-	-	1	-	-	-	-	5
F. 1		13	-	1	4	-	-	1	1	20
F.10		-	-	-	1	-	-	-	-	1
F2		4	-	1	-	-	-	-	-	5
Totals		44	9	12	7	2	3	1	1	79

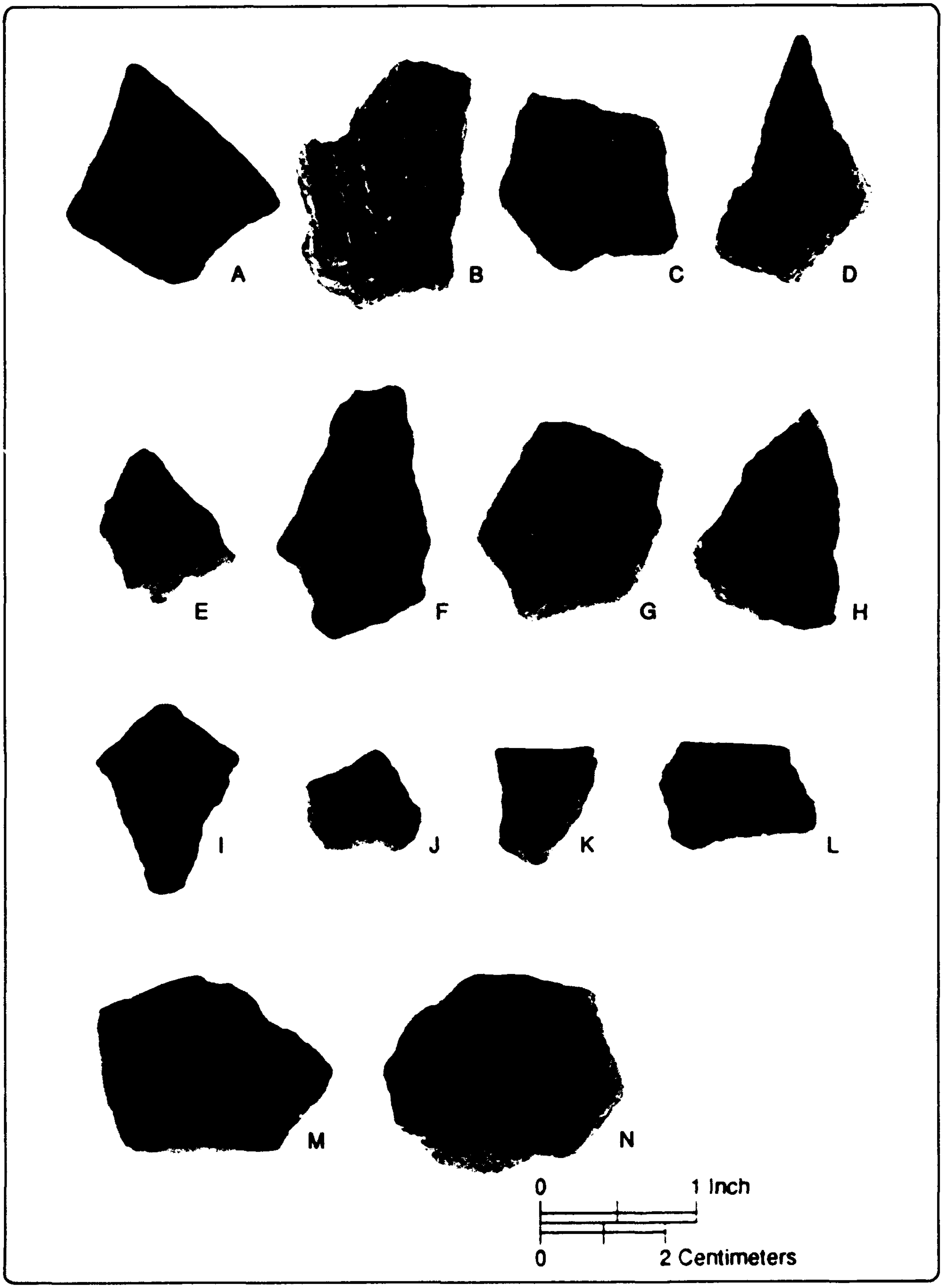
Key:

WC	Wilbanks Complicated Stamped
E/WC	Etowah/Wilbanks Complicated Stamped
EC	Etowah Complicated Stamped
L	Lamar Series
Miss	Unidentified Mississippian
Wood	Unidentified Woodland
NC	Napier Complicated Stamped
SC	Swift Creek Complicated Stamped

*Frequencies do not include ceramics recovered from shovel tests.

Swift Creek Complicated Stamped (A), Etowah Complicated Stamped (B-H), Late Etowah/Wilbanks Punctated (I, J), Unidentified Punctated (K, L), Lamar Incised (M, N).

Figure 43
Complicated Stamped, Punctated and Lamar Incised Ceramics, 9Co45



Wilbanks Complicated Stamped

Forty-seven sherds were classified as Wilbanks Complicated Stamped (Figure 44 and 45h), including 46 body sherds and 1 rim sherd. This assemblage accounted for 55 percent of the diagnostic sherds recovered from testing, and suggests that the main occupation at this site extended over the Middle Mississippian Period (Caldwell 1957:352; Hally and Langford 1988; Hally and Rudolph 1986:27; Sears 1958:172-176, Appendix B; Williams and Shapiro 1990:32). The assemblage exhibited a variety of a-plastic inclusions in the paste, including 33 grit tempered sherds, 12 sand-tempered sherds, 2 leached limestone tempered sherds, and 1 mica and grit tempered sherd. All tended to be reddish-brown in color, though a few were buff. The surface decoration of these sherds was characterized by bold execution with wide lands, deep grooves, and overstamping. The stamped designs included 39 curvilinear, 3 rectilinear, and 5 unidentified complicated stamped motifs. The Lake Acworth sample closely resembles the Wilbanks type as it is described by Caldwell (1957:23-26, 352), Hally and Rudolph (1986), and Sears (1958:172-176 and Appendix B).

Etowah/Wilbanks Complicated Stamped

A total of 9 sherds exhibiting complicated stamped motifs could be classified as either Wilbanks or Etowah, but could not be further distinguished. This category should not be viewed as indicative of a transitional type, but simply a catchall grouping for sherds that are potentially representative of either the Etowah or Wilbanks types.

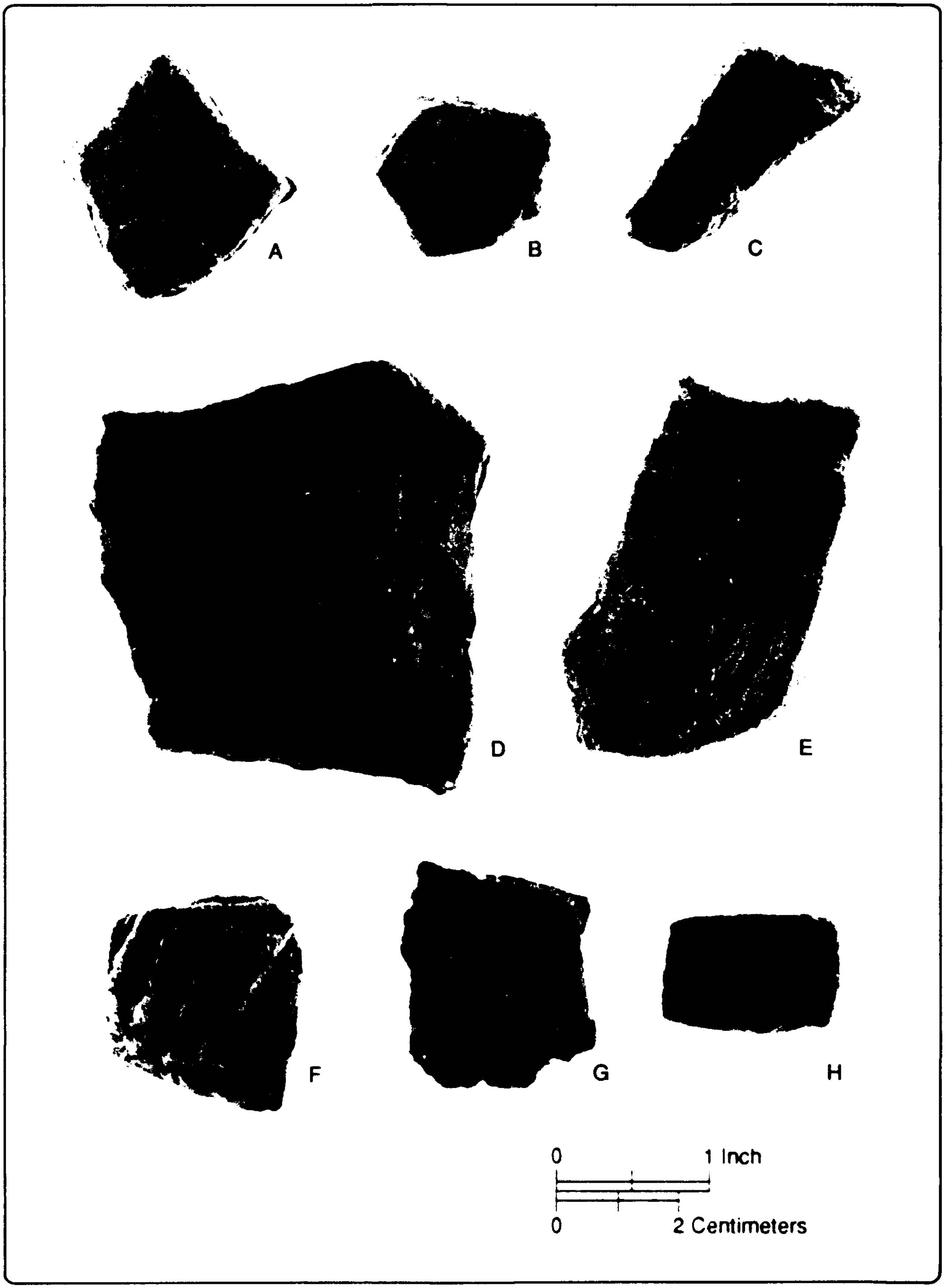
Lamar Series

Eight Lamar Period sherds were identified. This collection consisted of 5 Lamar Incised body sherds (Figure 43m-n), 1 Lamar Incised simple rim (Figure 45c), and 2 Lamar folded pinched rims (Figure 45a-b). The predominant a-plastic inclusion in the paste of all eight sherds was fine grit that was mostly quartz sand. The incised ceramics included 2 fine incised (1 rim), 1 medium incised, and 3 bold incised sherds. The rimfold width of the intact folded pinched rim was 13.4 millimeters. According to Hally and Rudolph (1986:63) and Wood (1990:44-46),incising does not appear in Lamar Series pottery until the Late Lamar Period, around approximately A.D. 1450. Wood (1990:44-46) indicates that pinched rims are also a Late Lamar Period feature at Allatoona Lake. The seemingly late Lamar association of this pottery assemblage is supported by an uncalibrated C-14 date of 510 +/- B.P. from Feature 21, a cob-filled pit at 9Co45.

Corncob Impressed

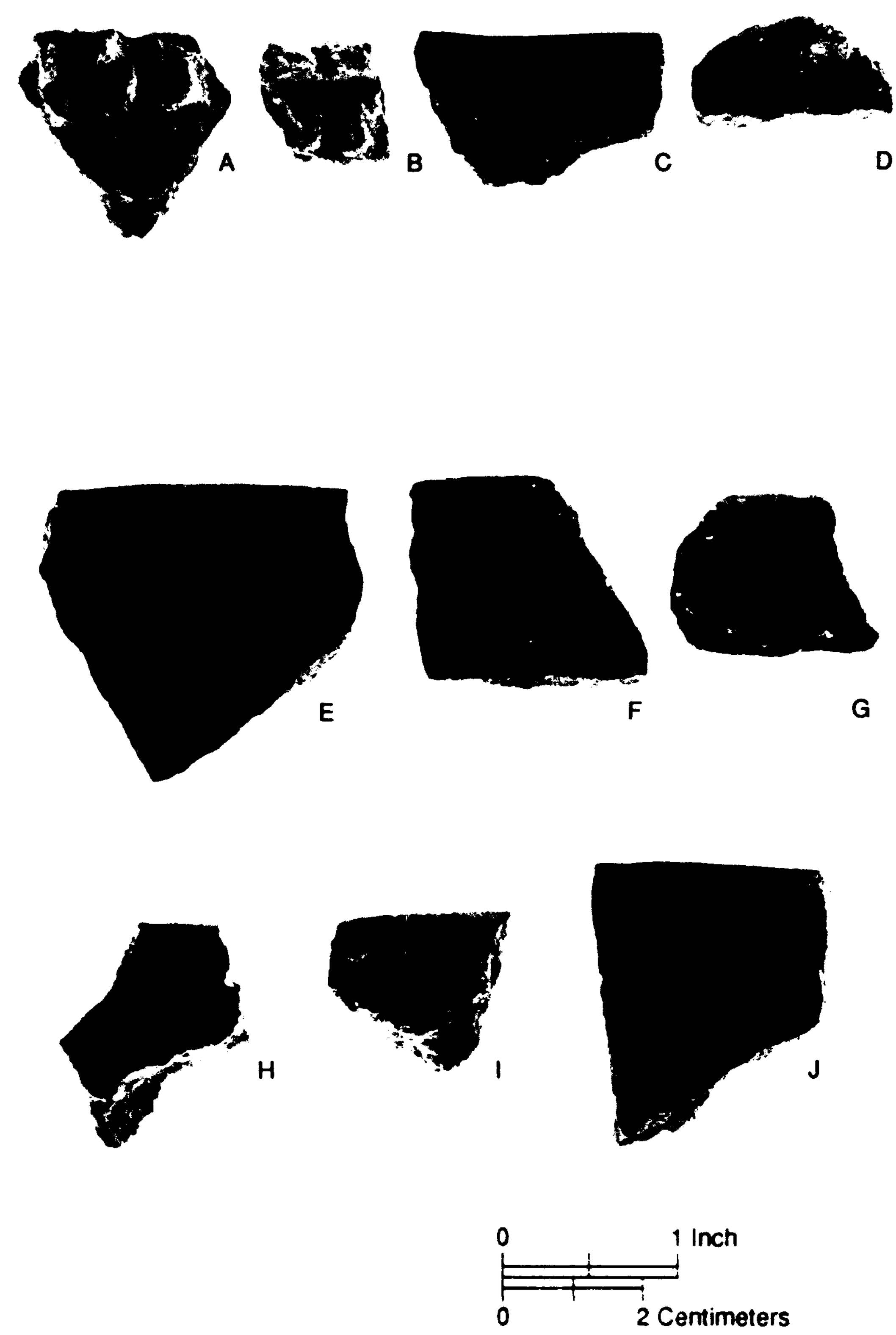
Nine body sherds were identified as corncob impressed. All of these sherds were somewhat eroded. The impressions appeared to have been made by a cob with the kernels removed. Eight sherds included substantial quantities of grit in their paste, and 1 sherd was tempered with coarse sand. According to Williams (personal communication 1990), corn-cob impressed pottery is commonly

Wilbanks Complicated Stamped (A-H).



Lamar Series Rims (A-C), Mississippian Rim (D), Unidentified Plain Rims (E-G), Possible Wilbanks Complicated Stamped (H), Etowah Complicated Stamped (I), Napier Complicated Stamped (J).

Figure 45
Rim Sherds, 9Co45



associated with the Wilbanks Phase in North Georgia. Hally and Langford (1988:51, 61) find that corncob impressing appears in the Late Etowah also and is fairly common throughout the Wilbanks and the Early Lamar Phases in North Georgia.

Unidentified Mississippian

One rectilinear complicated stamped body sherd and one simple rim with an applied node appeared to represent Mississippian Period ceramics. Both sherds contained fine quartz grit as the main inclusion in their paste. The rim with the node was found in EU 4, Level 2 and the body sherd came from EU 2, Level 2).

Unidentified Woodland

Three complicated stamped body sherds resembled Woodland period ceramics in paste characteristics. The surface treatments included 2 rectilinear design motifs and 1 rectilinear and curvilinear motif. The primary a-plastic inclusion in all 3 sherds was fine grit and mica.

Unidentified Complicated Stamped

One hundred and forty sherds exhibiting complicated stamped designs could not be assigned to a culture historic type due to observational problems (i.e. small sherd size or surface erosion). This collection included 139 body sherds and 1 unidentified rim sherd. The material was tempered with a variety of materials , including 105 grit, 27 coarse sand, 2 leached limestone, 3 mica and grit, 1 grit and clay, and 2 shell-tempered sherds. The decorative motifs of the assemblage consisted of 55 curvilinear, 14 rectilinear, 5 rectilinear and curvilinear, and 65 unidentified complicated stamped designs.

Unidentified Incised

Sixty-seven body sherds and 4 simple rims were classified as unidentified incised. The main a-plastic inclusion in the paste of 92 percent of these sherds was fine grit. Four sherds contained coarse sand inclusions and one sherd contained grit and clay particles in it's paste.

Unidentified Punctated

Seven sherds exhibited punctations that appear in each case to be located just below the rim on former vessels. This is a typical characteristic of Middle Mississippian vessels (Hally and Langford 1988) and it is probable that most of these sherds are associated with the Wilbanks component at the site.

Unidentified Punctated and Incised

Two sherds exhibited evidence of both punctations and incising, and may very well belong to the Early Lamar component at the site.

Cord Marked

One grit tempered sherd exhibited cord marking. Although not common, cord marked types do occur in Lamar assemblages in Northwest Georgia (see Hally and Langford 1988:71-74) and are actually abundant in contemporaneous sites in Tennessee (ie. McKee Island Cordmarked at Hiwassee Island). The example from 9Co45 appears to have been made from local clays.

Unidentified Stamped

Two hundred and five stamped sherds were too eroded to classify and included 199 body sherds, 4 simple rims, 1 unidentified rim, and 1 discoidal. Eighty percent (80%) of the unidentified stamped sherds contained fine grit as the main a-plastic inclusion in their paste, while 13 percent contained coarse sand inclusions. The remaining 5 percent of the sherds in this category were tempered with shell (1), leached limestone (1), mica and grit (3), grit and leached shell (1), grit and clay (4), and coarse sand and shell (1).

Plainware

Two thousand seven hundred and eighty-four plain sherds were recovered from 9Co45. This collection included 88 simple rims, 27 rolled rims, 1 finger pinched rim, 4 unidentified rims, 1 basal support, 4 discoidals, 2 straps, and 2,655 body sherds. One plain body sherd and one rolled rom (Figure 45e) were burnished. The vast majority of the plainware contained fine grit as it's primary a-plastic inclusion (86%). Twelve percent of the plainware was tempered with coarse sand. The remaining 2 percent of the plainware exhibited a wide variety of inclusions, including shell (13), leached limestone (6), bone and grit (1), and grog (1).

Rim Sherd Analysis

Each rim sherd was classified according to three variables: (1) rim form, (2) surface treatment, and (3) a-plastic inclusions (temper). These data are summarized in Tables 32 and 33. One hundred and forty-four rim sherds were identified in the ceramic assemblage, and included 102 simple rims (Figure 45c, h), 1 simple rim with an applied node (Figure 45d), 30 rolled rims (Figure 45e-g, i-j), 2 folded, pinched rims (Figure 45a-b), 1 finger pinched rim, and 8 unidentifiable rims. Eighty-five percent of the rim sherds were plain, while 11 percent exhibited stamped surface treatments. The stamped surface treatments included 5 complicated stamped, 5 incised, and 2 punctate sherds. The stamped impressions on 5 rims were too eroded to identify. Eighty-eight percent of the rims contained grit as the main a-plastic inclusion, while 16 contained coarse sand inclusions. One rim contained grit and mica.

TABLE 32. Cross-Tabulation of Rim Form by Surface Treatment, 9Co45

Surface Treatment				Rim Form			
	Simple	Rolled	Folded Pinched	Finger Pinched	Node	Unid	Totals
Comp. Stamped	2	2				1	5
Incised	5						5
Unid. Stamped	4					1	5
Punctate	2						2
Plain	87	27	1	1	1	4	121
Unidentifiable	2	1	1			2	6
Totals	102	30	2	1	1	8	144

TABLE 33. Cross Tabulation of Rim Form by A-Plastic Inclusions, 9Co45.

Aplastic Inclusions			Rim Form				
	Simple	Rolled	Folded Pinched	Finger Pinched	Node	Unid	Totals
Grit	94	23	2	1	1	6	127
Coarse Sand	8	6				2	16
Grit and Mica		1					1
Totals	102	30	2	1	1	8	144

The majority of the rim sherds exhibited simple rim forms (71.53%). Eighty-five percent (n=87) of the simple rims were plain, and ninety-two percent were tempered with fine grit (predominantly quartz sand). The stamped, simple rims included 1 Wilbanks Complicated Stamped sherd, 1 Lamar Incised sherd, and 1 Unidentified Mississippian simple rim with an applied node.

Twenty-one percent (n = 30) of the rim sherd assemblage exhibited rolled rim forms, including 1 Etowah Complicated Stamped sherd, 1 Napier Complicated Stamped sherd, 26 plain sherds, 1 burnished plain sherd, and 1 unidentified sherd. This significant presence of rolled rims is possibly associated with the Middle Mississippian Wilbanks Phase component at the Lake Acworth Site . Wood (1990:44-45) shows that rolled rims are a characteristic attribute of Early to Middle Mississippian ceramic assemblages at Allatoona Lake ceramic sequence, while Williams (personal communication 1990) states that an abundance of rolled rims is characteristic of Wilbanks Phase ceramics. The rim sherd assemblage from 9Co45 also included 8 unidentified rims, 1 finger pinched rim, and 2 Lamar folded pinched rims.

Interpretation of the Lake Acworth Site Ceramic Assemblage

Fifty-nine percent (n=47) of the sherds identifiable to culture historic type were within the range of variation accepted for Middle Mississippi Wilbanks Series wares; 14 percent (n=12) were classified as Early Mississippi Etowah Complicated Stamped wares; and 9 percent (n=8) corresponded to Lamar Series pottery. Nine cob impressed sherds and two punctate sherds were categorized as Etowah/Wilbanks (13%), and 2 sherds were classified as Unidentified Mississippian (2%). The Woodland ceramic assemblage included 2 Late Woodland sherds (1 Napier and 1 Swift Creek) and 3 Unidentified Woodland complicated stamped sherds. These diagnostic surface treated sherds indicate that 9Co45 was a multicomponent Mississippian site that included a minor Woodland component. The primary occupations appear to date from the Middle to the Late Mississippi Periods.

The Lake Acworth Site ceramic assemblage indicates that the main village occupation extended over a significant portion of the Mississippian Period in northwest Georgia, beginning with the Etowah Culture. This Early Mississippi manifestation is usually dated between A.D. 1000 and 1200 (Hally and Rudolph 1986:27; Williams 1990:32) and was originally defined at Allatoona Lake where it was sorted into four chrono-stylistic divisions, or ceramic periods in the Midwest Taxonomic System (McKern 1939). These were designated Etowah I-IV (Caldwell 1957: 324-342; Hally and Langford 1988:24, 26; Hally and Rudolph 1986:37). Hally and Langford (1988:44) favor abandoning the four phase Etowah sequence, combining the Etowah I and II Phases into a single Early Etowah Phase and the Etowah III and IV Phases into a single Late Etowah Phase. The rationale for such a modification is that the Etowah I and IV Phases are not clearly defined and there is "uncertainty regarding the specific ceramic characteristics" associated with each (Hally and Langford 1988:44). The Etowah IV Phase, for example, was defined by Caldwell (1957:341-342) on the basis of ceramics that were taken from a single pit feature at the Woodstock Fort Site in the Allatoona Reservoir.

Etowah ceramics are characterized by grit-tempering and rectilinear complicated stamping. Common complicated stamped design motifs include cross-bar diamonds, ladder base diamonds, line blocks, concentric polygons, and the filfot cross. Rims are commonly rolled or rounded (Caldwell n.d.:325; Hally and Rudolph 1986; Wauchope 1966; Wood 1990:45). Hally and Langford (1988:51) state that the main differences between the pottery assemblages associated with Early Etowah and those associated with Late Etowah relate to changes in the dominant types of complicated stamped design motifs. The ladder base diamond is a dominant decorative motif during Early Etowah. This motif decreases in importance during Late Etowah, and is replaced in importance by the filfot cross. There is also a decrease in the incidence of shell and limestone tempering during Late Etowah (Hally and Langford 1988: 51). The twelve Etowah sherds recovered from 9Co45 were interpreted as Late Etowah on the basis of these trends, as the filfot cross frequently occurs.

The Etowah Culture is followed by the Middle Mississippi Savannah Culture, which dates from A.D. 1200 - A.D. 1350 (Hally and Langford 1988:27, 31, 55; Hally and Rudolph 1986:27, 51; Wood 1990:45). At present the Savannah Culture is represented by only one phase, Wilbanks Phase, in the Allatoona Lake sequence. The Wilbanks Phase, or ceramic period as it was originally conceived, was originally defined by Sears (1958:172-176) from pottery that was recovered during excavations at the Wilbanks Site in the Allatoona Reservoir. Wilbanks ceramics are characterized by curvilinear complicated stamping with moderately bold lands and deep grooves, rolled or rounded rims, and medium sand or grit temper. The main design motifs are concentric circles, figure eights, figure nines, and scrolls (Caldwell n.d.:346; Hally and Langford 1988; Hally and Rudolph 1986:51-63; Sears 1958; Wood 1990:45).

Hally and Langford (1988:31-32) state that the relationship between "Savannah/Wilbanks and Etowah ceramics as they were described by Sears (1958) and Caldwell (1957) is complex and confusing." Sears (1958:175-176) argues that the predominantly curvilinear design motifs of Wilbanks Complicated Stamp represent a totally separate pottery tradition from the predominantly rectilinear design motifs seen in Etowah designs. He believes that the appearance of Wilbanks ceramics in the Etowah River Valley in the Middle Mississippi Period is indicative of the immigration of new peoples into the river valley. In contrast, Hally and Langford (1988:32, 56) argue that the evidence points more toward the "*in situ* development of Wilbanks Phase ceramics from the preceding Etowah pottery types." They further add that "evidence is rapidly accumulating that the ceramic transition from the Etowah culture to the Savannah culture is a gradual one" (Hally nd Langford 1988:56). According to them, Wilbanks ceramics developed directly from the preceding Late Etowah ceramic types. The primary evidence they present for this hypothesis is: (1) the co-occurrence of Etowah and Savannah complicated stamp pottery reported by Caldwell (1957:341-342) at the Woodstock Fort site in the Allatoona Reservoir, and (2) the co-occurrence of complicated stamp pottery with Late Etowah motifs (one and two-bar cross diamonds) and common Savannah culture motifs (concentric circles) in the Beaverdam and Skull Shoals Phases of Eastern Georgia (Hally and Langford 1988:56, 62; Hally and Rudolph 1986:57).

In Northwest Georgia, Caldwell (1957) defined a transitional phase that fell between Etowah III and Wilbanks that he referred to as Etowah IV. Hally and Rudolph (1986: 460) and Caldwell (1957:341) state that Etowah IV is poorly known and suggest that it is transitional between the Early Mississippian Etowah and the Middle Mississippi Wilbanks Phases. Caldwell (1957:341) states that the main distinguishing characteristic of the Etowah IV Phase is that a "variety of Savannah/Wilbanks Complicated Stamped is an integral part of the pottery complex." He presents evidence from a feature at Woodstock Fort where Late Etowah and Savannah/Wilbanks sherds co-occurred in high frequencies.

Hally and Langford (1988:62) hypothesize that components that contain both Late Etowah and Wilbanks Complicated Stamp pottery in the same ceramic assemblage probably date to an earlier period than the Wilbanks Phase as it is described by Sears (1958). They suggest that the Wilbanks Phase represents late

Middle Mississippi and should be "preceded by an earlier phase of Savannah Culture" (Hally and Langford 1988:62). Late Etowah and Wilbanks ceramics were the main diagnostic pottery types found at 9Co45 and they occur in the same deposits. This co-occurrence suggests that the main occupation at 9Co45 may have begun at the time of transition between the Etowah and Savannah cultures and that this founding component may represent such an early Savannah manifestation.

In Northwest Georgia, the Late Mississippi Period is synonymous with the Lamar Culture. The earliest Lamar Phase in the Allatoona Reservoir area is known as Stamp Creek, which dates from A.D. 1350 - 1450 (Hally and Langford 1988; Hally and Rudolph 1986:63; Williams 1990:32). The Stamp Creek Phase is an Early Lamar manifestation, in contrast to the succeeding Brewster Phase (A.D. 1450 - 1520), which is considered to represent Late Lamar (Caldwell 1957:27; Hally and Langford 1988; Hally and Rudolph 1986:63; Wood 1990:45-46). The Stamp Creek Phase is marked by the presence of Lamar Complicated Stamp pottery and the absence of incised wares. Lamar Incised pottery appears in the Late Lamar, Brewster Phase in the Allatoona Lake area (Caldwell 1957:27; Hally and Langford 1988:32; Hally and Rudolph 1986:63; Wood 1990:45-46). This could suggest that a hiatus in occupation occured at the site between Wilbanks and Late Lamar, or it may indicate an earlier occurrence of incised Lamar ceramics than is currently accepted.

Prehistoric Lithics

The Lake Acworth Site lithic assemblage consisted of 2,447 pieces of chipped stone debitage, 116 chipped stone tools and manufacturing discards, 2 pecked stone balls, 1 quartzite hammerstone, and 1 ground stone axe blade fragment. Six categories of lithic raw material were recognized in the chipped stone analysis. These included: (1) Ridge and Valley chert, (2) vein quartz, (3) granular quartz, (4) quartz crystal, (5) chlorite schist, and (6) vitric tuff. The chipped stone tools and manufacturing discards were predominantly made from chert (n=101 or 87.1%), while 12.1 percent (n=14) were composed of quartz. One utilized flake was made of what appeared to be vitric tuff. The chipped stone debitage reflected a similar dominance of chert. Almost 70 percent of the debitage was made of chert (n=1,531), while the remainder consisted of quartz (n=659). Interestingly, an unusually high concentration of quartz was detected in EU 1 at the southern end of the site (Figure 28). If the apparent quartz association with early, or perhaps preceramic, occupation holds, as discussed for the Butler Creek Site, then this area of the site may represent the locus of earlier occupation documented by both projectile point and ceramic type identifications.

Ledbetter et al. (1986:IV-120-130) have recorded a large number of quartz outcrops and quarry sites within the Allatoona Reservoir, especially in the Proctor's Bend area of the Etowah Valley and in the middle reaches of Allatoona Creek, within 4 to 5 km of the Lake Acworth Site . No sources of Ridge and Valley chert have been located within the Allatoona Lake region (Goad 1979), but the unusual abundance of this raw material at this site, as well as the Butler Creek Site , suggests that sources may have been very near. According to Ledbetter et al. (1986:IV-121) only 28 percent of the entire chipped stone assemblage collected during the Southeastern Archeological Services survey was composed of Ridge and Valley chert. The 70 percent representation at the Lake Acworth Site is quite unusual for sites in the Allatoona Lake region in general. The chert assemblage from the site is dominated by very hard, light to dark gray specimens that correspond closely to Goad's (1979:14) descriptions of the Knox Group of Ridge and Valley cherts, sources of which are abundant in nearby Floyd County. In comparison with the Butler Creek Site, however, it would appear that darker gray colors were more frequently selected.

The following description of the lithic assemblage will discuss each major category or class of item, beginning with chipped stone. Categories of chipped stone include debitage, cores, flake tools, projectile point preforms, unidentifiable projectile point fragments and diagnostic projectile points. These discussions will be followed by descriptions of the non-chipped stone material.

Chipped Stone

Debitage

The chipped stone debitage analysis, which was applied in total only to the test unit and feature context material, broke the assemblage down into four raw material categories (i.e. Ridge and Valley chert, quartz, quartz crystal, and chlorite schist) and into six morphological categories. This has been discussed earlier in the Butler Creek Site report, but will be repeated here for convenience. These latter categories were: 1) primary flakes, 2) secondary flakes, 3) interior flakes, 4) thinning flakes, 5) unidentifiable flakes, and 6) shatter. The first three categories correspond to flakes derived from core types other than bifaces as is evidenced by relatively perpendicular striking platform angles and flat or non-curved longitudinal cross-sections. The categories are internally differentiated by the degree of cortex present on their dorsal surfaces. Cortex covers greater than 75 percent of the dorsal surface of primary flakes, while secondary flakes contain between 25 and 75 percent cortex and interior flakes exhibit less than 25 percent cortex. Most of the chert flakes placed in these categories possessed attributes common to bipolar reduction assemblages such as inverted cones of percussion, double cones, and faceting or crushing at each termination point or striking platform (see Binford and Quimby 1963; Kobayashi 1973). Two small, tabular cores were also identified in the assemblage that exhibit evidence of having been reduced with a bipolar technique to produce flakes. Thinning flakes were identified as those flakes with noticeably acute striking platform angles, curved longitudinal sections, and frequent well developed lipping on the neck of the striking platform. Flakes with this morphology are commonly derived from biface thinning (House and Ballenger 1976:89-90; Newcomer 1971) and represent wastage, although many of the larger flakes in this category may also have been intentionally produced as expedient tools. The category "shatter" was applied to any angular piece of lithic material that did not exhibit the typical attributes of percussion flaking. Finally, an unidentifiable flake category was applied to all debitage that appeared to possess the attributes of a flake, but could not be further categorized due to breakage. Appendix VII tabulates debitage data for all test units and features by level.

Table 34 presents a breakdown of this information for all test units (n=1,592). Thinning flakes dominate all three raw material categories and comprise ca. 64.8 percent of the entire assemblage. The frequencies of non-thinning flakes are nearly equal for chert and quartz, but the same differences noted at Butler Creek are extant at this site. The chert sample contains much higher proportions of primary and secondary flakes, a pattern which would be expected if bipolar flake production was being undertaken on small cobbles. The quartz sample, accordingly, is comprised primarily of interior flakes which probably indicates other flake production strategies involving directional cores. Thus, the overall lithic reduction system at the Lake Acworth Site appears to differ very little from that described for Butler Creek. Three major elements are present: (1) a chert bipolar flake producing subsystem directed toward the exploitation of small cobbles, (2) a quartz flake producing subsystem involving the reduction of directional cores using traditional percussion techniques, and (3) a bifacial reduction system to manufacture bifacial tools.

TABLE 34. Breakdown Of Debitage Categories By Raw Material For All Test Units, 9Co45.

Raw Material	Prm. Flake	Sec. Flake	Int. Flake	Thn. Flake	Und. Flake	Shatter	Totals
Chert	25	57	86	801	78	73	1120
Quartz	3	4	129	223	27	71	457
Quartz Crystal	0	0	1	7	2	5	15
Totals	28	61	216	1031	107	149	1592

Again, the tool and core data from the site substantiate these inferences. Quartz cores are represented only by directional fragments and a sheared core. The chert cores, by contrast are exclusively of the tabular, bi-polar type. Both raw materials were utilized to produce bifacial tools, and the abundance of thinning flakes in the debitage assemblage indicates a biface-dominated industry. This too is substantiated by the chipped stone tool assemblage. Of the 116 non-core items, 86 represent whole or fragmentary projectile points and projectile point preforms. In contrast to the Butler Creek Site, however, utilized flakes comprise a substantial percentage (25.9%) of the lithic tool assemblage. Many of these flakes, moreover, exhibit the diagnostic inverted cones, dual crushed platforms, and double bulbs of percussion noted by Binford and Quimby (1963).

Cores

Only four cores or core fragments were identified in the Lake Acworth testing assemblage (Table 35). These consisted of 1 quartz core fragment, 1 quartz sheared core, and 2 tabular Ridge and Valley chert bipolar cores (see Figure 46). Sheared cores represent a specialized discoidal form that is consistently associated with quartz assemblages (Cable 1991:127-128). They derive their name from the fact that they appear to have been sheared or struck from a larger mass of material using a block-on-block technique or a Levallois flake producing strategy. The resultant shape is a plano-convex discoid in which the planer surface is used as a striking platform to produce flake blanks.

TABLE 35. Core Data, 9Co45.*

Bag No.	STP	EU	Lev	Core Type	Raw Material	Length	Width	Thickness
59	59			Bipolar	Chert	20.0	21.0	21.0
190		2	3	Bipolar	Chert	23.0	44.0	8.0
198		2	1	Fragment	Vein Quartz	46.0	45.0	30.0
171	171			Sheared	Granular Quartz	55.0	25.0	23.0

* Metric data reported in millimeters.

Flake Tools

This category is comprised exclusively of utilized flakes in the Lake Acworth assemblage (Figure 46, Table 36). No thick-edged unifaces or unifacially retouched tools of any kind were identified. The preponderance of edge angles between 20° and 35° suggests specialized cutting functions. The wear patterns on the use edges also support this contention, as wear is invariably manifested in small unifacial nibbling and dull, light polish (see Keeley 1980). Multiple-edge use on a single flake was common. Many of these flakes, as noted above, exhibited evidence of being produced from bipolar percussion, and all were made of highly siliceous chert with one exception. This latter piece resembled a highly isotropic vitric tuff.

Projectile Point Preforms

Twenty bifaces or biface fragments appeared to represent rejects and breakage from aborted attempts to manufacture projectile points through bifacial reduction, and were categorized as preforms (Figure 46). Four were made of quartz, while the others were produced from chert (Table 37). Cross-sections perpendicular to the medial axes of the more complete specimens ranged from biconvex to plano-convex, the latter shape being the more numerous. As is indicated in Table 37, the preform assemblage is primarily represented by blade fragments that were generated during the later stages of bifacial trimming and shaping. Four whole specimens were present, however, that appear to have been rejected early in the reduction process due to step fracturing along the edges or to situations where the removal of large masses of material further out on the blade was impeded by mistakes made in trimming the lateral margins. The predominant shapes of the blade outlines were ovoid to triangular. Most are small and appear to represent blanks for Madison, Camp Creek, or Copena Triangular points.

TABLE 36. Metric, Provenience, and Categorical Data on Utilized Flakes, 9Co45.*

Bag	STP	EU	Fea.	Lev.	Raw Material	Length	Width	Thickness	Edge °
189		2		2	Chert	25.0	10.0	3.5	39.0
190		2		3	Chert	27.0	16.0	3.5	35.0
192		1		1	Chert	28.0	20.0	7.0	35.0
190		2		3	Chert	23.0	14.0	7.0	42.0
193		1		2	Chert	36.0	9.0	5.0	33.0
171	171				Chert	29.5	17.0	4.0	29.0
205			2A		Chert	28.0	16.0	6.0	34.0
189		2		2	Chert	16.5	18.0	2.5	39.0
177	177				Chert	16.0	13.5	4.0	24.0
190		2		3	Chert	25.0	16.0	7.0	55.0
40	40				Chert	35.0	20.5	8.5	46.0
189		2		2	Chert	20.0	15.5	5.0	46.0
122	122				Chert	21.5	14.0	8.0	38.0
196		3		2	Chert	16.0	7.0	1.5	26.0
198		4		2	Chert	16.0	9.0	2.0	37.0
196		3		2	Chert	18.0	14.5	4.0	26.0
198		4		2	Chert	15.5	8.5	3.0	28.0
199		4		3	Chert	17.0	13.0	7.0	28.0
198		4		2	Vit Tuff	16.5	13.5	3.0	36.0
198		4		2	Chert	20.0	16.0	3.0	26.0
171	171				Chert	21.5	12.0	6.0	45.0
196		3		2	Chert	14.0	10.0	3.0	25.0
171	171				Chert	16.0	12.0	3.0	35.0
188		2		1	Chert	18.5	13.0	5.0	49.0
189		2		2	Chert	16.0	11.0	4.0	52.0
197		4		1	Chert	19.0	11.0	4.0	39.0
198		4		2	Chert	12.0	9.0	2.5	43.0
190		2		3	Chert	16.0	12.0	4.0	37.0
196		3		2	Chert	17.0	9.0	3.0	21.0
196		3		2	Chert	12.5	10.0	3.5	42.0

* Metric data reported in millimeters.

Preforms (A-E), Utilized Flakes (F-N), Tabular Bi-polar Cores (O-P), Ground Stone Axe Blade Fragment (Q), Cobble Hammerstone (R), Stone Balls (S, T).

Figure 46
Chipped Stone and Other Stone Tools, 9Co45

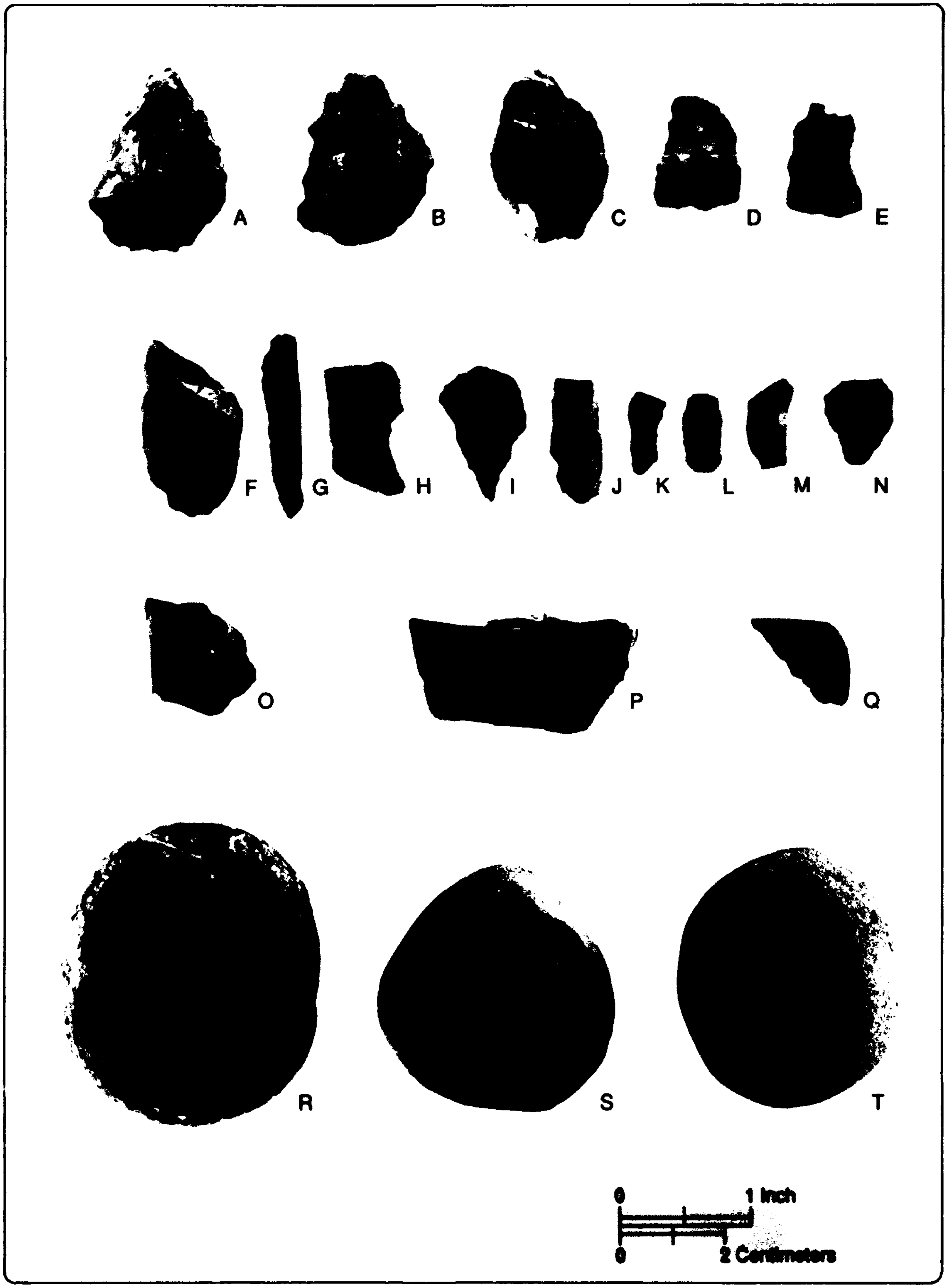


TABLE 37. Metric, Provenience, and Categorical Data on Projectile Point Preforms, 9Co45.*

Bag	EU	STP	Fea	Lev	Material	Length	Width	Thick	Frag. Type
197	4			1	Chert	36.5	25.0	20.0	Whole
191	2			4	Chert	35.0	26.0	14.0	Whole
190	2			3	Chert	34.5	23.0	19.5	Whole
198	4			2	Chert	27.0	35.0	14.5	Base
189	2			2	Chert	22.0	17.0	5.5	Whole
190	2			3	Chert	22.0	15.0	8.0	Lat. Sec. Miss
197	4			1	Chert	15.0	20.0	7.0	Base
198	4			2	Chert	30.0	18.0	10.0	Upper Blade
190	2			3	Chert	25.0	20.0	6.0	Part. Shaped
171		171			Chert	14.0	23.0	8.0	Mid-section
171		171			Chert	15.0	19.0	6.5	Mid-section
196	3			2	Chert	15.0	30.5	7.0	Mid-section
196	3			2	Chert	16.0	20.0	8.0	Mid-section
198	4			2	Chert	15.5	17.0	6.5	Lateral Section
188	2			1	Chert	21.0	17.5	7.5	Mid-section
189	2			2	Chert	29.0	20.0	15.0	Lateral Section
192	1			1	Gran Qtz	13.0	24.0	8.0	End
192	1			1	Gran Qtz	19.0	21.5	7.0	Tip
201			1		Vein Qtz	16.0	18.0	8.0	Tip
193	1			2	Vein Qtz	22.5	14.0	7.0	Lateral Section

Projectile Points

Projectile points represent the most numerous category of chipped stone tool recovered from the Lake Acworth Site. Forty whole or fragmentary specimens could be assigned to culture historic typological categories, while 21 additional specimens were too fragmentary for these purposes. Data recorded for the unidentifiable fragments are listed in Table 38, while categorical and metric data for the diagnostic group are presented in Appendix VIII. As was true of the preforms, the projectile points are overwhelmingly represented by chert. Chert comprises 80 percent (n=32) of the diagnostic sample and 100 percent (n=21) of the unidentifiable fragments. Descriptions and summary data for each diagnostic culture historic type are discussed below. A graphic illustration of the manner in which metric attributes were measured on the projectile point assemblage is presented in Figure 25.

Benton Broad Stemmed

A single example of a basal fragment of what appears to be a Benton Broad Stemmed point was recovered from Level 3 of EU 1. This type was defined by Cambron and Hulse (1975:12) from specimens recovered in Tennessee. It is considered to represent a Late Archaic style with an estimated temporal range of

4,000 to 2,000 B.C. The primary diagnostic feature of the type is the short, broad, square-shaped stem. The example from the Lake Acworth Site has a proximal haft width of 25 millimeters, well within the range specified by Cambron and Hulse (1975:12). In keeping with the pattern noted earlier, this Archaic point was made of quartz. Interestingly, this example derives from the EU 1 area, which contains the largest concentration of quartz documented at the site.

TABLE 38. Metric, Provenience, and Categorical Data on Unidentifiable Projectile Point Fragments, 9Co45.

Bag	STP	EU	Lev	Diagnostic Type	Raw Mat.	Length	Width	Thick	Frag.Type
156	156			Camp Creek/Copena ?	Chert	30.0	14.0	6.5	Upper Blade
196		3	2	Camp Creek/Copena ?	Chert	24.5	12.5	8.0	Upper Blade
195		3	1	Camp Creek/Copena ?	Chert	25.5	17.5	8.0	Upper Blade
193		1	2	Camp Creek/Copena ?	Chert	24.0	16.0	7.0	Upper Blade
194		2	5	Madison ?	Chert	17.0	1.0	6.0	Upper Blade
188		2	1	Madison ?	Chert	17.0	12.0	4.0	Upper Blade
189		2	2	Madison ?	Chert	14.5	12.0	4.5	Upper Blade
171	171			Madison ?	Chert	20.0	11.0	3.5	Upper Blade
188		2	1	Madison ?	Chert	18.0	13.0	4.0	Upper Blade
188		2	1	Madison ?	Chert	14.5	10.0	4.5	Tip
189		2	2	Madison ?	Chert	13.5	9.0	3.5	Tip
198		4	2	Madison ?	Chert	10.5	8.0	2.5	Tip
191		2	4	Madison ?	Chert	13.0	6.5	2.0	Tip
196		3	2	Madison ?	Chert	8.5	7.0	2.5	Tip
189		2	2	Madison ?	Chert	11.0	12.0	3.0	Tip
208				Camp Creek/Copena ?	Chert	22.0	9.0	4.0	Lateral Section
189		2	2	Camp Creek/Copena ?	Chert	13.5	16.0	6.0	Lateral Section
189		2	2	Camp Creek/Copena ?	Chert	15.5	23.5	5.5	Lateral Section
193		1	2	Camp Creek/Copena ?	Chert	16.0	10.0	6.0	Lateral Section
134	134			Unidentified	Chert	13.0	11.0	4.0	Lateral Section
192		1	1	Bradley Spike ?	Chert	11.5	13.0	6.5	Base

Metric data reported in millimeters.

Bradley Spike

Two examples of a style similar in outline to the Bradley Spike point defined by Kneberg (1956) were identified in the assemblage (Figure 47z, aa). Kneberg associates this style with the Early Woodland period, but the precise temporal and cultural range has not yet been well established. The Lake Acworth specimens appear to be on the smaller size range for such points, but they are very similar in every other morphological characteristic. Summary statistics for these specimens are presented below (Table 39). Cambron and Hulse (1975:19) report a length measurement range of 40 to 65 millimeters and a shoulder width of 10 to 17 millimeters. Both specimens were made of chert.

Madison Small Triangular (A-N), Camp Creek (A-Q), Drill (R), Nodena (S), Copena Triangular (T-X), Bradley Spike (Z-Aa), Benezer (Bb), Gary Stemmed (Cc-Ee).

Figure 47
Projectile Points, 9Co45

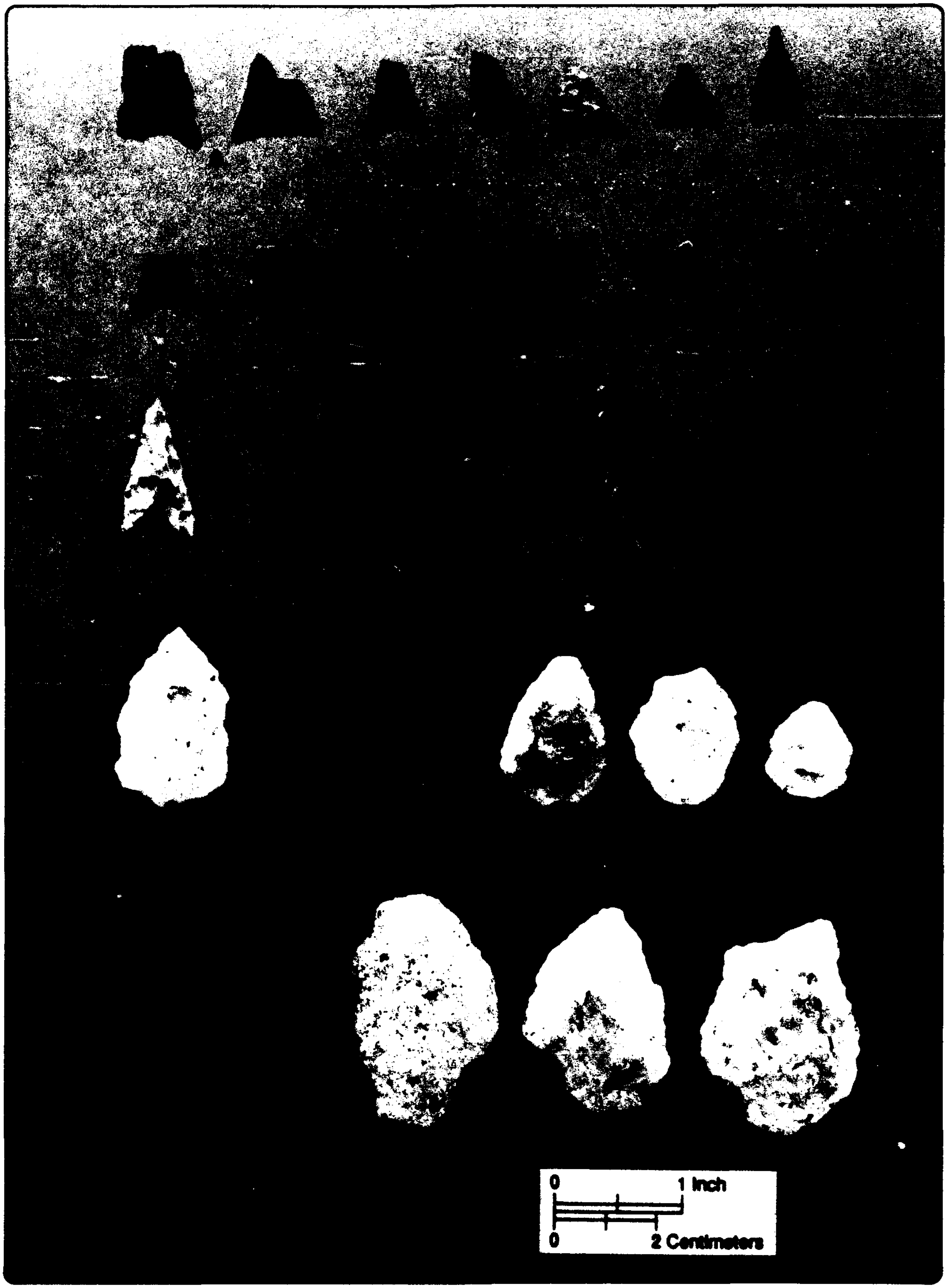


TABLE 39. Metric Data for Bradley Spike Points, 9Co45.*

Measurement	n	Mean	Standard Dev.	Coeff. of Var.
Length	1	29.50		
Width	2	15.00	±4.24	28.28
Thickness	2	7.75	±3.48	10.13
Shoulder Width	2	14.50	±3.54	24.38
Blade Length	1	18.00		
Dist. Haft Width	2	11.25	±1.77	15.71
Pro. Haft Width	2	10.75	±3.18	10.13

* Metric data reported in millimeters.

Camp Creek

Five small to medium sized triangular projectile points from the collection are similar in overall morphology to the Camp Creek type (Cambron and Hulse 1975:22; Kneberg 1956:23), identified originally at the Camp Creek site in Tennessee (Figure 47o-q). Justice (1987:229) includes the type in his Hamilton Incurvate Cluster along with a number of geographically proximate triangular types such as the Caraway, Clarksville, and Roanoke types in the North Carolina Piedmont (Coe 1964:49-50, 110, 112), the Connestee and Pisgah types from the Appalachian Summit area of North Carolina (Keel 1976:131-133), and the Haywood type (Chapman 1973:83) from Ice House Bottom, Tennessee. This cluster is purportedly associated with Late Woodland manifestations in the time range of about A.D. 500 to 1,000. Although Justice identifies incurvate blades as a salient characteristic of the cluster, most of the types he includes in it more commonly exhibit straight to slightly excurvate lateral margins. The Camp Creek point is one such type. The examples from the Lake Acworth Site had straight margins and straight to slightly excurvate bases, identical to the specimens at Butler Creek. This type may correspond to the isosceles triangular points Caldwell (1957) reports as a common element of the Dunlap, post-Dunlap, and Cartersville Foci in the Allatoona Reservoir. Summary statistics for the Lake Acworth examples are presented in Table 40.

Coosa Notched

Only a single basal specimen of the Coosa Notched type, which was so prevalent at Butler Creek, was recovered from Lake Acworth (see Figure 26 for examples of the type). This type was originally identified as a consequence of the Weiss Reservoir investigations on the Coosa River in Alabama (DeJarnette et al. 1963) and is considered to occupy a coeval chronological position with the Coosa Point according to Cambron and Hulse (1975:30). Although not specifically mentioned by him, this type may be a member of Justice's (1987:211-212) Bakers Creek Cluster, which includes a number of expanding stemmed, broadly side-notched points from Tennessee, Georgia, Kentucky, Mississippi, and Louisiana. The Bakers Creek Cluster is assigned a middle and terminal Middle Woodland association, which would fit well with the transitional Cartersville-Swift Creek ceramics that appear to dominate the Butler Creek assemblage. Their paucity at the Lake Acworth Site strongly argues for an earlier, Woodland association as well.

TABLE 40. Summary Metric Data for Camp Creek Points, 9Co45.*

Measurement	n	Mean	Standard Dev.	Coeff. of Var.
Length	2	27.00	±4.24	15.71
Width	5	16.00	±2.37	14.82
Thickness	5	6.90	±1.29	18.76
Concavity	5	0.60	±0.65	108.65

* Metric data reported in millimeters.

Unidentified Pentagonal

Six relatively large, crude pentagonal-shaped points with excurvate blades and concave bases were segregated from the collection (Figure 47t-y). Summary data for the Lake Acworth Site examples are presented in Table 41. The specimens may relate to Justice's (1987:215-217) Unnotched Pentagonal Cluster which he equates with the Jack's Reef Corner Notched point and the Late Woodland period (see description in the Butler Creek Site report). The specimens definitely exhibit wear and therefore are probably not preforms regardless of how crude they appear. Four of the specimens are made of quartz, which could suggest a pre-Mississippian association. One of the quartz examples has very shallow lateral notches that were obviously used as hafting features (Figure 47y).

TABLE 41. Summary Metric Data for Unidentified Pentagonal Points, 9Co45.*

Measurement	n	Mean	Standard Dev.	Coeff. of Var.
Length	2	29.50	±2.12	7.19
Width	5	20.90	±2.84	13.58
Thickness	6	7.50	±2.65	35.28
Shoulder Width	5	20.90	±2.84	13.88
Blade Length	4	21.38	±3.59	12.90

* Metric data reported in millimeters.

Ebenezer

A small, contracting stem point (Figure 47Bb) from the assemblage is identified as an example of an Ebenezer point as defined by Cambron and Hulse (1975:42). They observe that a similar type was originally identified by Lewis and Kneberg (1957) as "Rudimentary Stemmed" at the Camp Creek site. A general Woodland time frame is indicated. The example from the Lake Acworth Site has a more developed stem than the example illustrated by Cambron and Hulse, but there is an overall similarity. The Lake Acworth example is 29.5 millimeters long, 15.5 millimeters wide, and 6.0 millimeters thick. It also exhibits some similarities to the Randolph Stemmed type in North Carolina, that has been speculated to date to the Late Woodland or Protohistoric Periods (Coe 1964:49-50).

Gary Stemmed

Three large, slightly contracting stem points of quartz were identified as the type Gary Stemmed (Figure 47Cc-Ee), defined originally by Newell and Krieger (1949:164-165). Justice (1987:189-188) includes the type within his Dickson Cluster and suggests a transitional Late Archaic-Early Woodland association. Gary Stemmed points have been reported in the upper levels of the Stanfield-Worley Bluff Shelter in Late Archaic and Woodland deposits (DeJarnette et al. 1962) and Jenkins (1975) has argued that it represents the diagnostic projectile point style in the Middle Woodland along the middle Tombigbee (see also Cambron and Hulse 1975:57). There are a number of regional and possibly sequential variants associated with the Gary Stemmed type and it has been suggested that the type may be characterized by a good deal of temporal variability (Justice 1987:190). Similar quartz points were identified in the Butler Creek assemblage and there it was speculated that they might associate with a pre-ceramic component due to the lack of Dunlap Fabric Marked. Interestingly the Lake Acworth specimens all came from the southern portion of the site and one was recovered from EU 1 along with the Benton point and high proportions of quartz debitage. In this case, neither Cartersville/Swift Creek or Dunlap Fabric Impressed were present, further strengthening a pre-Woodland/pre-ceramic association for these points. Table 42 summarizes the metric data for the Lake Acworth sample of Gary Stemmed points.

TABLE 42. Metric Summary Data for Gary Stemmed Points, 9Co45.*

Measurement	n	Mean	Standard Dev.	Coeff. of Var.
Length	2	43.75	±3.18	7.27
Width	3	30.00	±1.73	5.77
Thickness	3	11.00	±0.87	7.87
Shoulder Width	2	30.00	±1.73	5.77
Blade Length	2	28.50	±2.12	7.41
Dist. Haft Width	3	18.50	±0.50	2.70
Prox. Haft Width	3	13.17	±1.44	10.96

* Metric data reported in millimeters.

Madison

The most numerous point style in the Lake Acworth assemblage was the Madison Point (Figure 47b-n). This is a small, straight-sided isosceles triangular point initially defined by Scully (1951:14) and is included within Justice's

(1987:224-227) Late Woodland/Mississippian Triangular Cluster, which is distributed throughout the eastern United States. It also may have a rather broad temporal distribution, ranging from A.D. 800 to historic contact by various accounts. Table 43 presents summary metric data on the Lake Acworth sample (n=18). All of the sample was manufactured from chert, including a number of very dark gray, translucent specimens with physical characteristics very near to those of glass. The abundant representation of the Madison Point at the Lake Acworth Site indicates that it was an important style during the Mississippian Period. All 18 examples exhibited concave bases.

TABLE 43. Summary Metric Data for Madison Points, 9Co45.*

Measurement	n	Mean	Standard Dev.	Coeff. of Var.
Length	4	15.50	±3.11	20.06
Width	13	14.69	±2.64	17.98
Thickness	18	3.00	±0.77	25.57
Concavity	18	1.06	±0.86	81.06

* Metric data reported in millimeters.

Nodena Banks Variety

A single, ovate, point with a plano-convex longitudinal section was identified as Nodena, Banks variety. The type was first defined by Perino (1966:33-35) to distinguish a straight-based variety from the elliptical Nodena point (Bell 1958:64; Chapman and Anderson 1955:15). The style is generally regarded as dating to the post-A.D. 1400 period and continuing in use until the A.D. 1600s and 1700s (Justice 1987:232). The example from Lake Acworth measures 33.50 millimeters in length, 17.0 millimeters in width, and 7.5 millimeters in thickness. It is fashioned from an unusual, dark material with numerous small vesicles. The material is tentatively identified as chert, but it may, alternatively, represent a vesicular metavolcanic of some type. Its presence probably documents the terminal occupation of the site.

Nolichucky

One small, trianguloid point with a straight to slightly incurvate hafting region was identified as a Nolichucky Point (Figure 47g). The type was originally defined by Lewis and Kneberg (1957:64-65). It has been generally correlated with the Copena complex and is thought to date to the Middle Woodland period (Justice 1987:207-208). The example from Lake Acworth is small and may simply represent an aberrant resharpening of the more common Madison point.

Pickwick

One specimen from the Lake Acworth Site was representative of the Pickwick type, first defined by DeJarnette et al. (1962:66) at the Stanfield-Worley

Bluff Shelter (Figure 26). Justice (1987:153-154) includes the type in his Ledbetter Cluster and associates it with the Late Archaic Period. The Pickwick type is a large, straight to slightly contracting, stemmed point with a diagnostic recurvate blade (see also Cambron and Hulse 1975:103). The epicenter of its distribution is apparently in the Tennessee River Valley, but examples have been documented throughout Georgia, Mississippi, Alabama, Kentucky, and portions of Indiana, Illinois, and Louisiana. As was true of the Gary Stemmed points, the Pickwick points probably document an earlier occupation than that represented by the ceramic assemblage at Lake Acworth. The specimen represents a blade midsection fragment that retains the diagnostic recurvate blade outline. It was made of a yellow and white mottled chert, possibly deriving from the Coastal Plain.

Drill

A single triangular biface with a drill point was found in the Lake Acworth assemblage (Figure 47r). It was manufactured from light gray chert and measured 35.0 millimeters in length, 11.5 millimeters in width, and 6.0 millimeters in thickness. The drill is of the same proportions and size range as the Camp Creek points and may represent a reworked example of this type.

Other Stone Tools

In addition to the chipped stone artifacts, four other stone artifacts were recovered during testing. These included 1 quartzite cobble hammerstone, 2 pecked stone balls, and a ground stone axe blade fragment (Figure 46q-t). Metric and categorical data for these artifacts are summarized in Table 44. The hammerstone exhibits developed faceting along the entire edge circumference, which suggests that it was used for hard hammer percussion in lithic reduction. No faceting was observed on the top or bottom that would indicate use as an anvil.

The two stone balls were recovered from the fill of Feature 1. One was whole and the other had been split down the center. Both had been pecked to form a more perfect circular shape. The function of such items is unknown. They appear too uniform and well shaped to have simply served as heating stones. Some Southeastern groups used stone rollers in the chunky game, but these stones were discoidal in shape rather than spherical (Swanton 1946:577-578). The stone axe blade fragment exhibited a sharp edge, suggesting that it was broken off of an axe during use or in a transporting accident.

TABLE 44. Metric and Categorical Data for Other Stone Tools, 9Co45.*

Bag	STP	EU	Lev.	Tool Type	Raw Material	Length	Width	Thick.
192		1	1	Hammerstone	Quartzite	60.0	51.0	27.0
201		F.1	1	Stone Ball	Meta-Igneous	46.0	45.0	39.5
201		F.1	1	Stone Ball	Meta-Igneous	51.5	44.5	Incomp.
171	171			Axe Blade Frag.	Chlorite Schist	20.0	17.0	5.0

* Metric data reported in millimeters.

SUBSISTENCE DATA FROM THE LAKE ACWORTH SITE

Bulk soil samples were collected from nine features at 9Co45. The sampled features included one basin-shaped pit (Feature 1), one wall trench (Feature 2), two smudge pits (Features 21 and 29), four postholes (Features 23-25, and 116), and one hearth (Feature 100). These features all appear to belong to the Mississippian village component dated from the Late Etowah to sometime in Lamar. Thirty and a quarter liters of soil were floated and yielded a total of 459.2 grams of light fractions and 5788.6 grams of heavy fractions (Table 45). The light fractions from these nine features, along with a 482.0 gram subsample of two heavy fractions (see Appendix V for a discussion of the macrobotanical methods applied to this analysis), form the basis of the following analysis.

TABLE 45. Proveniences, Sample Volumes, and Sample Weights for the Flotation Samples, 9Co45.*

Provenience	Sample Volume	Lt. Fraction Wt.	Heavy Fraction Wt.	Feature Type
9Co45 Fea. 1	5.0	46.0	542.8	Basin-shaped pit
9Co45 Fea. 2	5.0	20.3	648.9	Wall trench
9Co45 Fea. 21	2.0	72.7	312.6	Smudge pit
9Co45 Fea. 23	3.25	90.2	432.8	Post
9Co45 Fea. 24	2.5	61.6	252.9	Post
9Co45 Fea. 25	3.0	48.8	419.4	Post
9Co45 Fea. 29	1.5	46.1	136.3	Smudge pit
9Co45 Fea. 100	5.0	26.0	2394.0	Hearth
9Co45 Fea. 116	3.0	47.5	648.9	Post

*NOTE: Sample Volume are in liters and Sample Weights are in grams

Overview of Macroplant Recovery

A total of 2,744 charred seeds was retrieved from the flotation light fractions (Table 46). The charred seeds assemblage included 528 nutshell fragments, 2,192 corn cupules and kernels, 16 seeds from fleshy fruits, and 8 seeds from herbaceous plants (see Appendix V, Table 3). Additionally, 162 fragments of wood charcoal were identified (Table 47). The charred plant assemblage from 9Co45 included 10 plant taxa, of which 2 were identified to species, 5 were identified to genus, and 3 were identified to family. Eight seeds, seed fragments, and other plant parts were unidentifiable, and 3 seeds were unknown. The identified wood charcoal was classified into nine categories. Fifty-three fragments were identified to genus. Fifty-four were placed into the more general categories of ring-porous, conifer, monocot, and unidentified dicot. Two of these categories (ring-porous and unidentified dicot) represent dicot woods that could not be more specifically characterized because the fragments of charcoal were poorly preserved or were too small to precisely identify. Twenty fragments were classified only as conifer because they lacked critical features (such as entire annual rings) that would allow more specific identifications. Fifty-five specimens were unidentifiable.

TABLE 46. Macroplant Remains That Were Greater Than 2 millimeters in Size, 9Co45.

Provenience	Uncharred Organic	Wood Charcoal	Nutshell	Corn Remains	Seeds	Baked Clay	Unk.
Fea. 1	4.8	3.9	32/0.1	6/0.1	1/*	---	---
Fea. 2	2.3	1.1	3/*	----	---	---	---
Fea. 21	0.1	7.8	1/*	2026/24.2	---	---	3.4
Fea. 23	1.4	5.3	3/0.2	----	---	---	---
Fea. 24	0.1	24.3	1/*	----	---	---	---
Fea. 25	0.8	15.4	8/0.1	----	20/0.2	---	---
Fea. 29	0.2	7.0	450/15.3	90/1.6	---	---	---
Fea. 100	2.0	1.2	1/*	9/0.1	---	7.0	---
Fea. 116	1.1	15.6	----	----	---	---	---
TOTAL:	12.8	81.6	499/15.7	2131/26.0	21/0.2	7.0	3.4

NOTE: 1. The uncharred organic, wood charcoal, baked clay, and unknown charred material are recorded by weight in grams. The nutshell, corn remains, and seeds are recorded by count/weight in grams.
2. * = < 0.1 grams

Three analytical procedures were used to describe the seed assemblage at 9Co45: (1) species ubiquity; (2) species density; and (3) species abundance (see Table 48; Appendix V). The species density of seeds at 9Co45 was relatively high; 73.3 seeds were recovered from each liter of processed soil. The recovery of nutshell, on the other hand, was more moderate, averaging 17.5 fragments per liter. Corn kernels and cupules were well-represented in the macroplant assemblage, with a density of 72.5 kernels and cupules per liter of soil. By comparison, the species density of all other seeds was quite low; only 0.8 seeds were recovered per liter for all seeds exclusive of corn and nutshell. The species density of corn and nutshell was inflated by the enormous recovery of the former from Feature 21 and nutshell from Feature 29 (see Appendix V, Table 3). Eighty-seven percent of the nutshell in the macroplant assemblage was found in Feature 29, while 95 percent of the corn was found in Feature 21. Both features appear to represent smudging facilities, where corn cobs and nutshell were used for fuel. When the corn from Feature 21 and the nutshell from Feature 29 are removed from the seed counts, the density of these two taxa is more moderate. The adjusted densities are, respectively, 3.8 and 2.3 fragments per liter of corn cupules and kernels and nutshell.

TABLE 47. Identified Wood Charcoal, Tabulated by Count, 9Co45.

Taxon	Fea. 1	Fea. 2	Fea. 21	Fea. 23	Fea. 24	Fea. 25	Fea. 29	Fea. 100	Fea. 116	TOTAL
Oak	1	--	2	--	--	5	6	1	5	20
Pine	8	1	--	--	--	--	--	--	--	9
Tall Cane	--	--	--	--	--	--	7	1	9	17
.cf Grape	--	--	--	--	--	--	6	--	--	6
.cf Dogwood	--	--	--	--	--	--	--	1	--	1
Ring-Porous	1	--	4	--	1	7	1	1	1	16
Conifer	9	5	1	--	--	--	--	5	--	20
.cf Monocot	--	--	--	--	1	--	--	--	1	2
Unid. Dicot	1	--	7	1	--	--	--	3	4	16
Unidentifiable	--	4	6	19	18	8	--	--	--	55

TABLE 48. Species Ubiquity, Species Density, and Species Abundance for the Recovered Charred Seeds, 9Co45.

Taxon	Total Seeds	Species Ubiquity	Species Density	Species Abundance Of All Seeds
Cultigens				
Corn Kernels	74	22%	2.4	3%
Corn Cupules	2082	56%	68.8	94%
Corn Cob Frag.	36	11%	1.2	2%
Herbaceous Plants				
Goosefoot	5	22%	0.2	*
Grass Family	1	11%	0.03	*
Nightshade Family	1	11%	0.03	*
Purslane	1	11%	0.03	*
Fleshy Fruits				
Grape	15	11%	0.5	1%
Maypop	1	11%	0.03	*
				Of All Nutshell
Nutshell				
Acorn	45	67%	1.5	9%
Hickory	456	56%	15.1	86%
Walnut Family	27	33%	0.9	5%

NOTE: Species Density = number of seeds per liter of soil.

Corn cupules are by far the most abundant taxon identified at the Lake Acworth Site, comprising eighty percent of the recovered plant remains. When the nutshell is removed from the seed tally, the relative abundance of corn increases to ninety-nine percent of the total (Table 48). Ninety-four percent of the recovered macroplant remains (less the nutshell) are corn cupules, while corn kernels, corn cob fragments, and grape seeds each make up 3 percent or less of the recovered seeds (less the nutshell). Eighty-six percent of the nutshell assemblage consists of hickory, while nine percent is represented by acorn. Five percent of the recovered nutshell is identified as walnut family, because it was too small to classify more specifically. Hickory nutshell is typically the most abundant nutshell remain for all time periods in the Eastern Woodlands.

The ubiquity of the macroplant remains indicates that corn and nuts were extremely important dietary components at Lake Acworth. Acorn fragments are present in 67 percent of the sampled features. Hickory nutshell and corn remains are present in 56 percent of the light fractions. Goosefoot is present in 22 percent of the samples, and grape, purslane, maypop, grass family, and nightshade family seeds are present in one sample (11%) each.

A brief examination of the quantified plant remains from the greater than 2 millimeter fraction of the flotation samples (Table 46) confirms the apparent precedence of corn and nutshell in the sampled features. By weight, the ratio of corn to wood from this fraction is 32:100 and the ratio of nutshell to wood is 19:100. In contrast, the ratio of wild seeds to wood by weight is 0.2:100. The high ratio of corn to wood suggests that corn was an important dietary component to the inhabitants, and that corn agriculture was practiced in the site vicinity. Moreover, the dominance of corn cupules and cob fragments relative to corn kernels in the samples lends additional credence to this conclusion, since it is unlikely that corn brought to the site as a trade item would still retain the cob element. The high ratio of corn and nutshell relative to wood charcoal strongly suggests that the site was intensively occupied at least in the spring and summer, during the growing season, and in the fall when nuts were available for collection.

Macrobotanical Synthesis

This section summarizes the analytical and interpretive findings of the macroplant study.

Wood Charcoal

The fifty-three specifically identified fragments of wood charcoal from the Lake Acworth Site flotation samples included 20 oak, 9 pine, 17 tall cane, 1 possible dogwood, and 6 possible grape fragments. All of the trees that were represented in the wood charcoal assemblage are present in the Etowah River drainage today. The Etowah drainage falls within the southeastern mixed forest province. The climax vegetation is described as "medium to tall forests of broadleaf deciduous and needleleaf evergreen trees" (USDA 1980:25). The most common trees in this forest type are oak, hickory, sweetgum, blackgum, red maple, winged elm, and a variety of pines. Dogwood and woody vines are common understory vegetation (USDA 1980: 25).

Although the assemblage of identified wood from Lake Acworth was small, one can make several observations about the possible use and preference of wood at this site. Oak (67%) was the most ubiquitous wood species, followed by tall cane (33%), pine (22%), possible grape (11%), and possible dogwood (11%). Oak and hickory wood charcoal are commonly the most abundant wood taxa recovered from Eastern Woodland archeological sites (Chapman and Shea 1981:77, Johannessen 1984). The high ubiquity of oak in the wood charcoal assemblage probably reflects the dominance of this species in the surrounding forest, and possibly reflects a preference for this taxon by the site inhabitants.

This assemblage was useful in gaining some perspective on fuel wood preferences and what types of wood were selected as structural posts. The sampled features included a hearth (Feature 100), two smudge pits (Features 21 and 29), and two post holes that appeared to contain remnants of burned posts. The two post holes (Features 25 and 116) contained oak and ring-porous dicot wood, which suggests that the site inhabitants preferred oak for structural posts. The wood charcoal from the hearth (Feature 100) included oak, tall cane, and possible dogwood. This feature also contained nine corn cupules and two weed seeds. The corn may represent the use of cobs as fuel, and the weed seeds probably represent naturally deposited seeds that were accidentally charred. The smudge pits (Features 21 and 29) represent a specialized feature class where the pit contents were burned *in situ*. Corn cobs (Feature 21) or nutshell (Feature 29) were the most abundant charred contents of these facilities. These features also contained significant quantities of wood charcoal. Feature 21 contained 24.2 grams of corn parts and 7.8 grams of wood charcoal in its greater than 2 millimeter fraction, and Feature 29 contained 15.3 grams of nutshell and 7.0 grams of wood charcoal. The wood charcoal from Feature 21 included oak and conifer, while Feature 29 contained oak, tall cane, and possible grape wood. Both features were quite small; Feature 21 was 18 centimeters in diameter and 7 centimeters deep and Feature 29 was 23 centimeters in diameter and 11 centimeters deep. These features closely resemble the cob-filled pits that Schroedl (1986a:63) describes at the Overhill Cherokee site of Chota-Tanasee. Similarly, the Chota-Tanasee cob-filled pits were quite small. Schroedl (1986a) argues that these features were used as smudging facilities. The cob-filled pits at Chota-Tanasee contained abundant corn cob elements, wood charcoal, and nutshell. The wood charcoal included tall cane, oak, pine, and hickory (Schroedl and Shea 1986: 518, 526).

Nutshell

Five hundred and twenty-eight fragments of charred nutshell were recovered from the Lake Acworth Site. The assemblage included 45 fragments of oak acorn, 456 fragments of hickory nutshell, and 27 fragments of walnut family nutshell. The species ubiquity of acorn and hickory was high, suggesting that these two taxa were important dietary components. The species density and overall abundance of nutshell at 9Co45 was also high, and suggests that nuts were a popular source of fuel in smudging facilities at the site. The presence of acorns and hickory nutshell further suggests that the site was occupied in the fall. Acorns are available for harvest from September through November and hickory nuts ripen in October (Radford et al. 1968).

Cultigens

Seventy-four charred corn kernels, 2,082 charred corn cupules, and 36 corn cob fragments were recovered. Corn was the only cultigen present in the macroplant assemblage, and it made up 80 percent of the total plant assemblage by count. Considered without the nutshell, its relative importance in the assemblage is strikingly great. Corn comprised 99 percent of the seeds by count less the nutshell. The species density of corn at the Lake Acworth was high. An average of 2.4 corn kernels and 68.8 corn cupules were recovered per liter of floated soil. The corn to wood ratio by weight was 32:100. The high density, ubiquity, and abundance of the corn cupules and kernels was reflective of the use of corn cobs as fuel in smudging facilities and strongly indicates that this cultigen was a dietary staple for the occupants of the site. These factors, as discussed above, also strongly suggest that corn was grown in the vicinity, which establishes a late spring and summer season of site occupation.

Herbaceous Plants

Eight (8) seeds from three herbaceous plant taxa were recovered from the sampled features. These included 5 goosefoot seeds, 1 purslane seed, 1 grass family seed, and 1 possible nightshade family seed. These three taxa all favor disturbed habitats. The presence of these seeds probably represents the accidental charring of adventive weeds that were present in the site vicinity. However, it must be noted that goosefoot was an important constituent of Woodland garden systems throughout much of the Eastern United States and that it was widely used by historic Indian groups. Unfortunately, the low numbers of goosefoot seeds that were recovered preclude any assessments of their economic importance.

Fleshy Fruits

Two fleshy fruit-producing species, grape and maypop, were present. Both of these species probably grew on or near the site. The most common member of this group was grape, which made up 1 percent of the seeds by count. Grapes ripen from September through October (Radford et al. 1968:695) and were frequently dried and stored by Historic Indians in the Midwest (Yarnell 1964:65). Maypop fruits are edible and are available for harvest from May to June. Their roots, in addition, were used by the Cherokee for a variety of medicinal purposes (Moerman 1986:325). The presence of these taxa lends support to the contention that 9Co45 was ocuppied during the spring/summer and fall seasons.

Summary and Conclusions

This analysis had three objectives: (1) to evaluate the extent and quality of macroplant preservation at 9Co45, (2) to place and interpret the Lake Acworth macrobotanical assemblage within the larger context of Mississippian subsistence practices in the Etowah River drainage, and (3) to use the recovered macroplant assemblage to explore such questions as potential plant uses and the seasonality of site occupation. The relative abundance of seeds and wood charcoal that was recovered in the greater than 2 millimeter fractions indicates that macroplant preservation at 9Co45 is excellent. The overall ubiquity of corn, moreover, strongly indicates that this crop was a dietary staple and that it was grown in the site vicinity. The recovery of corn cupules in the Feature 21 smudge pit furthermore suggests that cobs were also an important source of fuel to produce insect repellent smoke screens. The high recovery of nutshell also indicates that nuts were an important dietary component and that nutshell was an important fuel source in smudging facilities. The wood charcoal assemblage provides interesting data on fuel use patterns and suggests that oak may have been a preferred material for structural posts. The abundance and ubiquity of corn suggests that the site was occupied in the spring and summer during the growing season, and the presence of acorn, hickory nutshell, grape seeds suggest that the site was also intensively occupied in the fall. Thus, the macroplant assemblage is consistent with the overall conclusion that the Lake Acworth Site represents a permanently occupied village. The absence of winter indicators does not pose a serious problem to this interpretation because this season is characterized by low food productivity and was traditionally a time of the year when native groups subsisted off of stored foods from fall harvests.

CHRONOLOGY, STRUCTURE AND FUNCTION OF 9Co45

As was true of the Butler Creek Site reported on in the last chapter, testing investigations at the Lake Acworth Site were designed to collect and generate data pertinent to yielding inferences concerning the nature, age, association, and function of the prehistoric occupation. Similar field and analytic procedures were employed and, although the cultural associations are different, a similar level of understanding concerning the chronological span of the occupation, the structure of the site and its ultimate position within the regional settlement system was attained. In this last section of the chapter a synthesis of the testing project findings will be presented and further speculations will be entertained.

Chronological Position of the Lake Acworth Site

Happily, discerning the chronological position of the Lake Acworth Site is somewhat more straightforward than was true of Butler Creek because the ceramic chronology for the Mississippian Period is much more definitive and elaborate than that of the Middle and Late Woodland sequence. There is evidence at the site for a number of earlier occupations, but the paucity of associated material suggests that these were brief, short term visitations, perhaps representative of sub-seasonal camps. There appears to have been a pre-ceramic occupation of Late Archaic groups represented by the Benton Broad Stemmed, Gary Contracting Stemmed, and the Pickwick projectile points. A similar range of pre-ceramic projectile points was found at Butler Creek and due to their infrequent occurrence there, the same interpretation of impermanent and short-term settlement was offered. The absence of Dunlap Fabric Marked pottery, the earliest recognized ceramic type in Northwest Georgia (Caldwell 1957), at both sites strongly suggests that all three of these projectile point styles pre-date the introduction of pottery in the Allatoona Lake region. This conclusion contrasts with Crook's (1984) earlier interpretations of the Cagle site stratigraphy where he found Dunlap Fabric Marked sherds and Late Archaic projectile point styles in apparent association. Ledbetter et al. (1986:IV-80), however, observe that the Cagle site stratigraphy is mixed and that the claimed association of Ear Woodland pottery and Late Archaic points is weak at best. The other pre-Mississippian occupation is represented by single sherds of Napier and Swift Creek Complicated Stamped. This indicates that the Lake Acworth Site was used during the Cartersville/Swift Creek, and possibly Proctor Focus, occupation at Butler Creek, but only in some specialized or ephemeral manner.

The Mississippian occupation marks the first major episode of settlement at the site. Nearly a full range of Early, Middle, and Late Mississippian ceramic types are present and occur in significant numbers, with the exception of Lamar Complicated Stamped. Lamar Incised, or incised pottery which appears to represent a Lamar type, is relatively common and suggests that either an occupational hiatus occurred during Early Lamar or that an Early Lamar component is present at the site but is masked by the other Mississippian components. This assemblage could be interpreted in a number of ways, any of which would require grounding in a consideration of other factors concerning the character of settlement at the site. All indications from testing would suggest that the Lake Acworth Site represents a Mississippian village and that there exist at least three and possibly four discrete residential precincts. These precincts have the potential to be chronologically related to each other in several different ways. They could each represent a separate Mississippian component, suggesting a long-lived, but very small village or hamlet roughly equivalent to the Butler Creek Site in size and possibly function. On the other hand, more complex settlement histories might characterize each precinct. Finally, at the other end of the spectrum, the precincts may all have been long-lived and contemporaneous, indicating a much larger village.

When the distribution of culture historic ceramic types are considered alone, the second alternative seems most likely (Table 49). The southern precinct

(EU 1), or Concentration 1, would appear to be characterized by Etowah and Wilbanks occupation. The diagnostics in the southwestern portion of the central precinct, Concentration 2, are dominated by Wilbanks and the northern portion of this central complex appears to have a larger Etowah presence. The northern precinct is dominated, again, by Wilbanks. It could be concluded from such an interpretation that the Lamar presence was quite minimal at the site and possibly unrelated to the Etowah and Wilbanks components altogether. Interestingly, though, the features from the northern portion of the central precinct show a much more significant Lamar representation. This would suggest that the underrepresentation of Lamar diagnostics is at least in part explained by sherd erosion. Continued plowing and slope wash has severely impacted the ceramic material in the plowzone. The sherds are predominantly small and the surface details are poorly preserved. By contrast, the sherds in the subplowzone deposits are larger and better preserved and much more easily diagnosed according to typological criteria. Moreover, it has been noted that it is sometimes very difficult to distinguish early Lamar Complicated Stamp from Wilbanks or even Etowah Complicated Stamp (Hally and Langford 1988:68) and it is possible that the typological characterizations have subsumed some of the former under the latter. A final problem with the above approach is the small sample size, which increases the risk of spurious interpretations due to sampling error.

TABLE 49. Relative Proportional Distributions of Diagnostic Mississippian Ceramic Types, 9Co45.

EU/Fea	Etowah	Etowah/Wilbanks	Wilbanks	Lamar	n
EU 1 (S. Precinct)	21.4%	35.7%	42.9%	0.0%	14
EU 2 (C. Precinct)	16.7%	16.7%	62.5%	4.2%	24
EU 3 (C. Precinct)	42.9%	28.6%	28.6%	0.0%	7
EU 4 (N. Precinct)	0.0%	0.0%	80.0%	20.0%	5
F. 1 (C. Precinct)	5.6%	0.0%	72.2%	22.2%	18
F.10 (C. Precinct)	0.0%	0.0%	0.0%	100.0%	1
F. 2 (C. Precinct)	20.0%	0.0%	80.0%	0.0%	5

One approach to controlling these problems is to take another look at the larger ceramic assemblage. Two rather straight-forward categories can be found in the larger assemblage which effectively contrast the Etowah and Wilbanks pottery from the Lamar period material, complicated stamping and incising. Certainly overlap of the two is to be expected and can also pose problems to this type of interpretive approach. The case of the complicated stamped sherds has been discussed above. Incising is also subject to such problems. Although a diagnostic surface treatment of Lamar assemblages, incising also occurs in earlier Mississippian complexes. However, the frequency of its occurrence is so minimal that it should not affect the comparison to be made here (see Hally and Langford 1988:47, 59; Sears 1958:150-157, 173-175). Table 50 presents the relative proportions of complicated stamped and incised ceramics from the excavation proveniences representing the various residential precincts at the site. This comparison evidences a rather consistent Lamar presence throughout all of the precincts. Overall, incised pottery contributes a 27 percent share and spatial proveniences range from over 20 percent in the southern portion of the site, to a high of 44 percent in the northern portion. Furthermore, if the complicated stamped pottery can be aportioned in a manner reflective of the relative contributions of the purely Etowah and purely Wilbanks types, an overall estimate of the contributions of the three components can be made. These calculations suggest the following representation: (1) Etowah: 16 percent, (2) Wilbanks: 57 percent, and (3) Lamar 27 percent. Keeping in mind that the Lamar component may be slightly underestimated due to typological problems in distinguishing Wilbanks and Lamar Complicated Stamp in small sherd collections, the resultant figures indicate a rather extensive and significant Lamar occupation. Moreover, because the spatial distributions of the types are fairly homogeneous, a strong argument can be made that the site was continuously occupied from sometime in Etowah, through Wilbanks, and into Lamar.

TABLE 50. Relative Proportions of Complicated Stamped and Incised Surface Treatments, 9Co45.

EU/Fea	Complicated Stamped	Incised	n
EU 1 (S. Precinct)	76.3%	23.7%	38
EU 2 (S-C. Precinct)	75.2%	24.8%	109
EU 3 (N-C. Precinct)	63.5%	36.4%	22
EU 4 (N. Precinct)	56.0%	44.0%	25
F. 1 (N-C. Precinct)	85.7%	14.3%	35
F.10 (N-C. Precinct)	0.0%	100.0%	2
F. 2 (N-C. Precinct)	75%	0.0%	12

One could argue that the derived component representations further indicate that the initial foundation of the village occurred in Late Etowah and that the village was abandoned sometime near the end of Early Lamar, at the beginning of the Brewster phase (see Caldwell 1957; Hally and Langford 1988:77-79). The latter inference is further supported by the low incidence of later Lamar rim treatments (i.e. folded rims, segmented rim fillets) on the one hand, and the low relative abundance of incising on the other. The former inference is more difficult to substantiate because no equivalent of an early Savannah Period has been defined in the Allatoona Lake region. Such phases, however, have been identified in the upper Savannah River Valley (Beaverdam), in the Oconee drainage (Scull Shoals), and in other regions in the surrounding area (see Hally and Rudolph 1986:51-63), and there is reason to believe that Caldwell's (1957:341-342) ill-defined Etowah IV horizon in the Allatoona area is a good candidate for such an equivalent as well. These assemblages contain both Savannah and Etowah stamped designs and it is assumed that this association represents a time of transition. Certainly one implication of the Lake Acworth settlement reconstruction is that it existed during this period of transition and it is possible that some, or all, of the Etowah ceramics are associated with this transitional time frame.

Two radiocarbon dates from the site provide additional information concerning the occupation (Table 51). One was obtained from charcoal in the macroplant flotation sample from Feature 1. It produced an uncalibrated radiocarbon age of 930±90 B.P., once the correction for fractionation was calculated. The calibration of this date, unfortunately for those of us who prefer straight-forward dating information, provides for a number of mean options ranging from A.D. 1040 to A.D. 1151 (Table 52). This date, it will be remembered, is not too much later than the one derived from Feature 4 at the Butler Creek Site, which contained a Late Swift Creek or Proctor "Focus" ceramic assemblage. Clearly the ceramics from Feature 1 are younger in affiliation. The pit fill, which is apparently derived from trash filling, consisted primarily of Wilbanks sherds and it can be argued on this basis that the pit was filled during the Wilbanks Phase. The small number of Lamar and Etowah ceramics are probably incidentally included as a consequence of disturbance factors. The Etowah sherds, on the other hand, could indicate an Etowah IV or transitional Savannah association. This issue simply cannot be resolved at present. The relative earliness of the date, however, lends credence to this possibility. The later mean options are consistent with the accepted range of dates derived from the Beaverdam Phase (Rudolph and Hally 1985; Hally and Langford 1988:37), and it can be tentatively suggested that Feature 1 represents a Beaverdam-like transitional phase deposit with a date mean ranging between A.D. 1095 and A.D. 1151.

The other radiocarbon date was derived from corn cob remains extracted from the flotation sample of one of the smudge pits (Feature 21) in the northern precinct (Concentration 3). The calibrated mean of A.D. 1418 places this pit squarely within the Early Lamar time range and the probability calculations strongly suggest an actual date for the corn somewhere between A.D. 1388 and 1445 (Table 52). There was a significant concentration of Lamar ceramics in this area of the site, suggesting a substantial Lamar occupation in the northern precinct. Moreover, the derived date lends support to the contention that an unrecognized Early Lamar component is present at the site.

TABLE 51. Radiocarbon Dates from the Lake Acworth Site , 9Co45.

Lab No.	Feature	Material	C-14 Age	C13/C12	Adjusted C-14 Age
Beta-41373	1	Wood	950±90	-26.3	930±90
Beta-41372	21	Corn	270±70	-10.3	510±70

TABLE 52. Calendrical Calibrations of Radiocarbon Dates from the Lake Acworth Site .*

Lab No.	Mean Options	1-Sigma Range	2-Sigma Range	Rel. Probability
Beta-41373	A.D. 1040 A.D. 1095 A.D. 1119 A.D. 1140 A.D. 1151	A.D. 999-1212	A.D. 901-1276	86% (A.D. 1019-1165) 12% (A.D. 1167-1191)
Beta-41372	A.D. 1418	A.D. 1329-1440	A.D. 1280-1490	64% (A.D. 1388-1445) 28% (A.D. 1324-1355)

* Source: Stuiver and Becker (1986).

Site Structure and Settlement Function

The evidence recovered from testing strongly suggests that the Lake Acworth Site is representative of a lower order Mississippian village within a larger system of settlement centered around the multi-mound site of Etowah (9Br1). Although Etowah was founded earlier, the later range of the occupations of the two sites is probably identical. Undoubtedly, the residents of the Lake Acworth Site had important social and political ties to Etowah, and may have been subordinate to the Etowah chiefdom. However, the subsistence data indicate that the villagers were economically rather self-sufficient. They were engaged in intensive corn agriculture, judging by the ubiquity and density of this crop in the flotation samples, and they also derived a substantial amount of their diet from locally available wild crops such as nuts, fleshy fruits, and seeds. It can also be inferred from the subsistence data that the site was occupied year-round as both late spring-summer and fall species were present in abundance. There would have been very little reason to move in the winter and early spring, because ample food was available most years from stored agricultural crops and probably nut harvests.

Three and possibly four residential precincts are inferred to exist at the site on the basis of feature and artifact distributions. Moreover, the ceramic evidence strongly argues that all of these were contemporaneously occupied throughout most of the site history. The site core, in which these precincts were located, extended over an area of approximately 2.8 acres and there is some indication (Feature 30) that the entire area was surrounded by a palisade wall. Such an obstacle might explain the extreme break in artifact density that can be seen across the site immediately adjacent and outside of the precincts (see Figure 30).

In spite of the rich and diverse history of archeological investigation in Northwest Georgia, very little is actually known about the nature of Mississippian settlement hierarchies or village plans. This is particularly true of the Etowah and Savannah Periods (see Hally and Langford 1988:41-67). What is known of these periods is primarily limited to the large mound centers, which have traditionally served as the focus for research. Moreover, most of the excavation has centered exclusively on the platform mounds *per se*, and the residential precincts of even the mound centers are *terra incognita*. Lower order sites such as Lake Acworth have the potential to contribute significant new information about not only the nature of the settlement hierarchy, but also about the minimal elements and organization of residential precincts in the larger mound centers.

The earliest classic Mississippian platform mounds in Northwest Georgia date to the Etowah Period. The structure and development of these early platform mounds are poorly understood at present because they tend to be buried beneath massive fill from later mound construction stages and and because the data that are available generally derive from excavations conducted prior to the establishment of modern techniques and controls. The earliest confirmed Etowah mound is represented by the Sixtoe Mound (Kelly et al. 1965). Only the latest of two construction stages was investigated, and only a portion of this summit was exposed. Four large, superimposed structures were encountered, ranging between 90 and 240 square meters in floor area and exhibiting wall trench construction. The size of these structures suggests a public, sacred and/or elite function, but no internal features were found, which seriously hampers further speculation regarding the exact purpose of the structures. The partially contemporaneous mound at Hiwassee Island in southeastern Tennessee, which has had its entire summit exposed, contained two levels, with a wall trench structure on each level (Lewis and Kneberg 1946). By contrast, these buildings contained evidence of numerous internal features including hearths, platforms, "seats," partition walls, and porch-like extensions. The mounds at the Etowah Site purportedly were begun during the Etowah Period (see Hally and Langford 1988:55; Sears 1953), but very little is known about these initial mound stages. It has been hypothesized that most of these early mounds were built over large earth lodges or earth embanked structures (Ferguson 1971; see also Kelly 1972; Rudolph 1984; Rudolph and Hally 1985). The Savannah Period mound at the Wilbanks Site, for instance, is built over a Late Etowah earth embanked structure measuring 14 meters on a side (Sears 1958). The chronological relationship between these two features is by no means clear, however. The Jarrett Phase mounds at Tugalo and Chauga support square, earth embanked summit structures measuring ca. 8 meters on a side and various architectural details of the entryways suggest that most, if not all, Wilbanks Period summit structures may have been earth embanked (Hally and Langford 1988:64; Polhemus 1985).

Due to greater accessibility, much more has been learned about the structure of Wilbanks mounds. Wilbanks summit structures generally tend to be smaller than Etowah examples, ranging between about 36 and 72 square meters in floor area, and are characterized by single-post wall construction with wall trench entryways (Hally and Langford 1988:64). Summit structures from this period also tend to occur in contemporary clusters of one sort or another. At Bell Field (Kelly 1972), four structures were present on each of two successive building stages and were tightly arranged around a small courtyard. The structures, moreover, were connected to one another by wall trench passageways. On each of these successive summits the southwestern half was raised approximately one meter and supported two of the four houses. A similar bi-level mound has been reported by Wauchope (1966) for the site of Two Run Creek, downstream from Etowah. Another aspect of platform mound structure, so far explored only around Mound C at Etowah, is a surrounding basal curtain wall or compound. At Mound C, a single-post wall or wall trench was erected at the base of each of 5 successive construction stages and, at least in the later stages, burials were placed between the wall and the mound base (Kelly and Larson 1956; Larson 1971). Overall, these burials exhibited much more elaborate grave treatments and furnishings than the sample from non-mound contexts at the site and Larson (1971) has argued that they represent an elite class of individuals, probably organized along lineage lines.

The meager available information on the structure and organization of the more mundane residential precincts of Etowah and Savannah Period settlements also comes primarily from large mound centers. Generally, such discoveries have been made accidentally while exploring submound deposits. Two single-post structures assigned to Late Etowah were discovered in the midden below Mound C at Etowah and three similarly constructed Wilbanks structures were found directly adjacent to this mound (Kelly and Larson 1956; Sears 1953). Caldwell (1957) has reported on the existence of two wall trench structures from the Stamp Creek Site and a semi-subterranean structure with a hearth at the Woodstock Fort Site, both located at Allatoona Lake, which appear to be associated with Late Etowah. Again, however, these were sporadic finds resulting from areally limited exposures. The only extensive exposure of a Mississippian site in northern Georgia from this time period is represented by Rucker's Bottom, a non-mound village on the Savannah River (Anderson and Schuldenrein 1985). Occupation at Rucker's Bottom was relatively continuous between about A.D. 1200 and A.D. 1450 and machine stripping revealed three separate village plans over that time. The earliest plan consisted of a non-palisaded cluster of domestic structures distributed around the periphery of a community plaza. The houses were circular in plan and ranged between 4 and 8 meters in diameter. One unusually large structure measuring 14 meters in diameter situat-` at the southeastern end of the plaza and facing onto it, has been hypo' ..ized to represent a public building. The later plans were shifted slightly north of the earlier one and were characterized by palisade enclosures, the initial one being rounded in aspect and the latest one assuming a roughly rectilinear form. A central plaza was also present in these later plans and a large circular structure (rotunda?) was situated at the south end of the plaza in a similar position to that described for the earliest component. Domestic houses were square or circular in shape and it is speculated that they may represent paired summer and winter houses for household groups, a common feature in Creek and Cherokee ethnohistoric accounts (Bartram 1909:55-56; Hudson 1976:216; Swanton 1946:386-420; see also Schroedel 1986:227). Whether Rucker's Bottom can serve as an analog of site structure and organization for non-mound and mounded villages alike in the Etowah Valley and the Allatoona Lake region is still an open question.

The data available for the Lamar Period, which are much more detailed than that discussed for the earlier periods, suggest that Rucker's Bottom may, in fact, offer a viable model. Lamar Period sites from Northwest Georgia appear to have a very similar organizational plan to the contemporary Dallas (Polhemus 1990) and Mouse Creek (Sullivan 1987) villages in southeast Tennessee (see Hally and Langford 1988:76). This inference primarily derives from the King Site, the only extensively excavated non-mound Lamar site in northern Georgia (Hally et al. 1975). This site encompasses about 5.2 acres and was encircled by a defensive ditch and palisade wall. A central plaza measuring 50 by 80 meters was surrounded by a village zone containing an estimated 47 winter houses (ie. substantially constructed square houses) and an undetermined number of post hole aggregates interpreted as paired summer houses. Two structures at the southern terminus of the plaza were also interpreted as public structures. One was similar, if not identical, to the standard winter house, while the other was unusually large, measuring 15.5 meters on a side, and might represent a council or meeting house. Based on his analysis of Dallas settlements, Polhemus (1990) has segregated villages of this time period into three hierarchically arranged units or building blocks. The minimal unit is represented by pairs of winter and summer houses with accompanying burials and extramural activity areas. Presumably this unit represents a household composed, normally, of an extended family. The next level identifies aggregates of paired structures which tend to open onto a common domestic courtyard. These aggregates are hypothesized to represent lineage segments. Some of the clusters of houses at the King site were also arranged in tight groupings opening onto common extramural spaces (Hally et al. 1975; Hally and Rudolph 1986:70). The third level, then represents the entire village with its associated integrative features. The integrative features, or public architecture and space, minimally include a large public structure, a central plaza and a segregated cemetery spatially associated with the plaza. Many Dallas villages contain mounds as well, and the size and number of the mounds at individual sites probably serves as a basis for identifying a settlement hierarchy ranging from non-mound, to single mound, to multiple mound villages. In light of the similarities between the King Site and the Dallas and Mouse Creek villages, it would appear that Polhemus' model has general applicability to a large area in the Piedmont and Ridge and Valley Provinces of the South Atlantic Slope.

Little Egypt, the presumed capital of the Coosa Province visited by DeSoto on the Coosawattee River (see Hudson et al. 1985), contained two Lamar Period mounds and appears to represent an example of a multi-mound center. Hally (1980) infers that the area between the two mounds was used as a large central plaza, further paralleling this general site organizational pattern. Another Lamar Period mound and village located on the Oconee River, the Dyar Site, has been shown to contain a large central plaza to the east of its single mound (Smith 1981). Both of these sites yielded abundant evidence of domestic structures in areas consonant with village zones, but excavations have not been sufficient to delineate aggregate patterns or the structure of residential precincts in general. The Etowah site seems to have lost its role as a regional center early in the Lamar Period according to Larson, and although there is a sizable Late Lamar component at the site there is no evidence of mound construction or continued use of the existing platform mounds (see Hally and Langford 1988:78). Other sites of this general time period in the Etowah Valley and the Allatoona Lake region are known only from surface collections and the only definite observation concerning these sites is that none of them contain platform mounds.

Examining the variability in site structure from level of the settlement hierarchy to the next is of tremendous importance to furthering our knowledge of Northwest Georgia prehistory. Discerning the elemental composition of bounded units of functional space at each level of the site hierarchy provides a basis for reconstructing a much more detailed picture of socio-economic development and political organization throughout the region. Documenting the presence or absence of features such as plazas, public buildings, and residential house arrangements at the Lake Acworth Site could provide an invaluable picture of the lifeways of small villages in the larger Etowah polity. In spite of the fact that the site has been plowed, the results of testing indicate that spatial organization data of this sort are still accessible. Moreover, the site contains undisturbed deposits that have a direct bearing on northwest Georgia chronology and sequence reconstruction. Finally, the preservation of floral and, probably to a lesser degree, other subsistence remains is excellent in the subplowzone deposits and could provide important subsistence data on Mississippian dietary and adaptive patterns. As a consequence, it is concluded that the Lake Acworth Site contains information that can significantly enhance our understanding of Mississippian culture in Northwest Georgia.

IV. SIGNIFICANCE EVALUATIONS AND RECOMMENDATIONS

It is evident from an evaluation of the research potential of these two sites that both contain significance under criterion "d" of the National Register of Historic Places and should therefore be considered eligible for inclusion on the Register. Not only do the sites retain a high degree of integrity of preservation, but they also contain archeological records that can address a number of long standing questions and problems that have hampered the advancement of prehistoric reconstruction in the Etowah drainage for years. Hally and Langford (1988:87-91) discuss most of these in their overview of Mississippian archeology in the Georgia Ridge and Valley province.

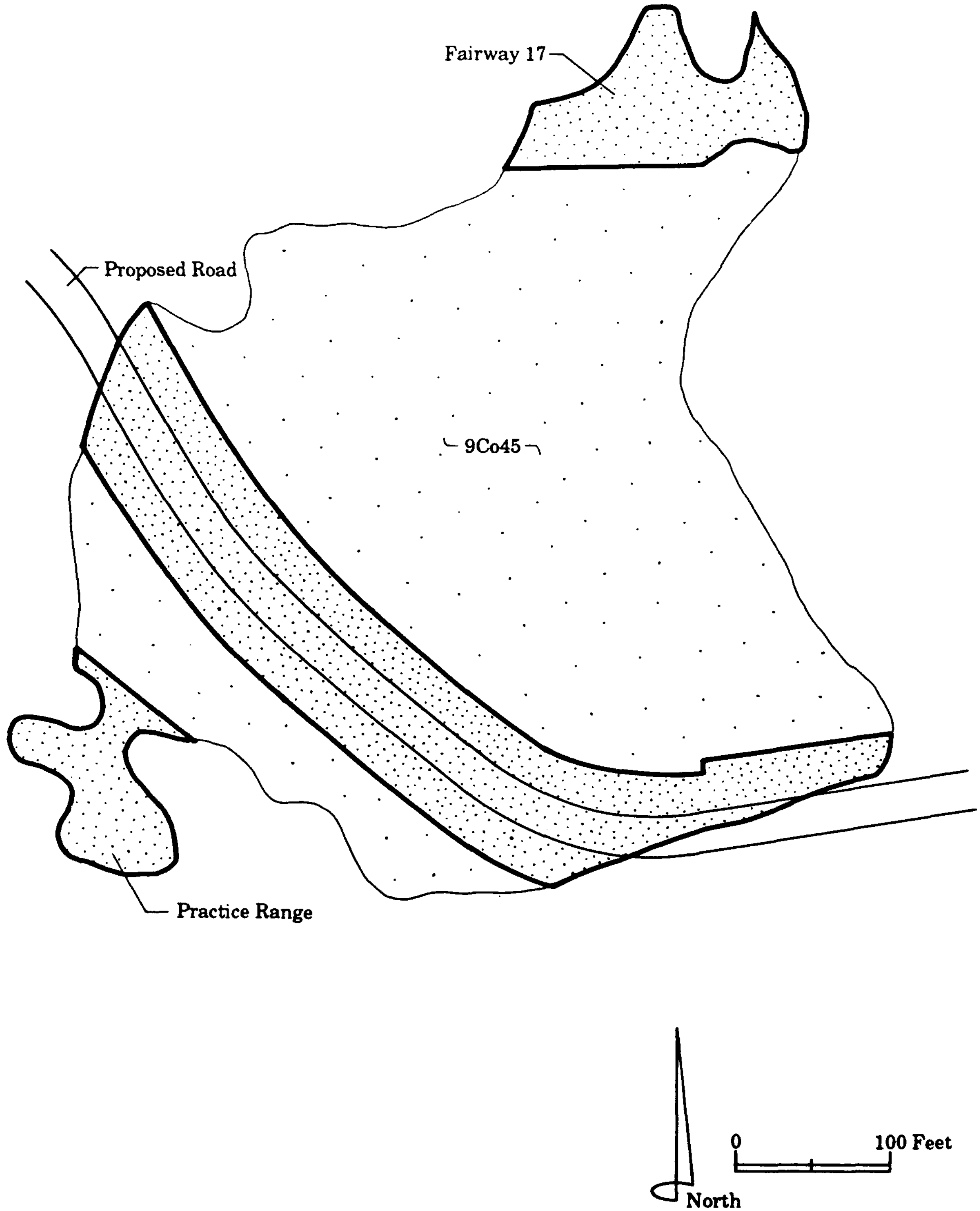
First, Butler Creek contains data bearing directly on issues of ceramic classification, chronology and subsistence. Hally and Langford (1988:87-91) ask two questions of relevance to the ceramic assemblage and site occupational period: (1) "What does the pre-Woodstock Swift Creek/Napier ceramic complex look like?" and (2) "When does the transition to Woodstock culture occur?" The Proctor Focus assemblage from Feature 4 may very well offer a glimpse into both questions, and discerning the character of the earlier Cartersville/Swift Creek complex at the site would go a long way toward answering the former question. In relation to subsistence they ask one additional question of pertinence to Butler Creek: "How important was maize horticulture in the Woodstock culture subsistence pattern?" Preliminary evidence from the site does not suggest the presence of corn or other cultigens, but a larger sample would be required to fully address this issue. The role of agriculture in the Middle and Late Woodland subsistence economies is a major issue throughout the eastern United States (Steponaitis 1986:378-379). Moreover, the Butler Creek Site contains preserved architectural remains and other subsistence data that can inform on the little understood Late Woodland settlement system of the Etowah Valley through site type definition and documentation of seasons of occupation.

Hally and Langford (1988:87-91) present numerous questions that specifically implicate the Lake Acworth Site. In the realm of ceramics and chronology they ask: (1) "Is there an early Savannah Phase in the study area comparable to Beaverdam and Scull Shoals Phases in the Georgia Piedmont that combines Etowah and Savannah ceramic characteristics?," (2) "Do Wilbanks Phase ceramics develop out of the preceding late Etowah ceramic complex or is there a sharp stylistic break between them?," (3) "Are Wilbanks Phase and the Bell Field site component contemporaneous, and do they date to the latter part of the Middle Mississippi period?," and (4) "What do early Lamar ceramics look like in the Etowah and Coosa Valleys?" Clearly the ceramic sequence outlined for the Lake Acworth Site coincides with issues surrounding all of these questions and the presence of demonstrably datable subplowzone deposits indicates that this site could contribute significantly to a better definition of the Mississippian ceramic sequence in the Etowah valley. Subsistence questions of relevance that they pose include the issues surrounding the possibility of upland agriculture - was it practiced and if so how intensively did the populations depend on it in the uplands. Although the actual location of the fields may have been in the bottoms of Butler Creek, the geographical situation of the Lake Acworth Site is squarely within the uplands as opposed to a major stream or river valley. Intensive agriculture appears to have taken place, but more documentation concerning this inference is needed. In terms of settlement patterns, the Lake Acworth Site can contribute to the definition of site types and settlement plans of lower order villages and hamlets and in this way can inform on the socio-economic integration of the Etowah polity and on the nature and organization of social units in smaller settlements (see Hally and Langford 1988:90-91).

This review of pertinent research domains to which the Butler Creek and the Lake Acworth Sites can contribute, indicates that they contain significance at both the local and state level and that mitigative plans should involve avoidance or data recovery prior to development of the Lake Acworth Golf Course. Fortunately, the interaction between the concerned agencies, the archeologists and the developers has had a positive effect in this situation. Close coordination has been maintained throughout the project, and construction plans have been altered to insure that damage to the sites will be as limited as practically possible. Originally, the Butler Creek Site was to be converted into a utility and service facility, while the Lake Acworth Site area was to support a driving range. Plans have now been modified so that the Butler Creek Site (9Co46) can be completely avoided and that most of the Lake Acworth Site (9Co45) will remain preserved. The driving range location has been shifted to the west and largely off of 9Co45, however, the site will receive impact in the form of an access road which runs across the site, from the 17th fairway, and from the practice range (Figure 48).

The construction of the access road will entail significant damage to a portion of the Lake Acworth Site and as a consequence it is recommended that a data recovery program be implemented on the direct impact zone of the road to mitigate adverse effect. Efforts should also be focused toward the areas to be impacted by the 17th fairway and practice range, although with the recognition that these locations are peripheral to the site's focus and will thus not likely contain the density of features to be found in the path of the access road. Care should be taken to insure that areas outside of the direct impact zone are not inadvertently damaged as a consequence of the construction. A feasible solution to this problem would be to define a right-of-way the width necessary to move heavy equipment and conduct construction operations and designate this area the direct impact zone for data recovery. The site deposits are so shallow that heavy equipment operation, especially during wet conditions, will destroy large portions of the site matrix. Since the site is known to local pot hunters, it is also recommended that Cobb County prepare a site protection plan to insure that collateral damage from such groups will not be incurred once the golf course is constructed. Once these precautions are met it is recommended that clearance be given for the project to begin, provided no other changes in design plans are made that would ultimately affect the site.

Figure 48
9Co45 Showing Impacts from Proposed Golf Course Design



REFERENCES CITED

Adair, J.
1930 *The History of the American Indians, (1775)*. Watauga Press, Johnson City, Tenn. Edited by S. C. Williams.

Anderson, D. G.
1985 Middle Woodland Societies on the Lower South Atlantic Slope: A View from Georgia and South Carolina. *Early Georgia* 13 (1 and 2): 29-66.

1988 Emergent Horticultural Economies: The Woodland Period. In *Prehistory and History Along the Upper Savannah River: Technical Synthesis of Cultural Resource Investigations, Richard B. Russell Multiple Resource Area*, by D. G. Anderson and J. W. Joseph, pp. 205-247. Report submitted to Interagency Archeological Services, Atlanta, Georgia by Garrow and Associates, Inc. Russell Papers 1988.

1990 Personal Communication to L. Raymer, National Park Service, Atlanta, November 1990.

Anderson, D. G. and J. W. Joseph
1988 *Prehistory and History Along the Upper Savannah River: Technical Synthesis of Cultural Resource Investigations, Richard B. Russell Multiple Resource Area.* Report submitted to Interagency Archeological Services, Atlanta, Georgia by Garrow and Associates, Inc. Russell Papers 1988.

Anderson, D. G. and J. Schuldenrein
1985 *Prehistoric Human Ecology Along the Upper Savannah River: Excavations at the Rucker's Bottom, Abbeville, and Bullard Site Groups.* Report submitted to Interagency Archeological Services, Atlanta, Georgia. Commonwealth Associates, Inc, Final Report No. 2602. Jackson, MI.

Baker, S. G.
1970 Selective Analysis of Two Historic Indian Trash Pits. *The Conference on Historic Sites Archaeology Papers* 5(1):122-137.

Bartram, J.
1942 *Diary of a Journey Through the Carolinas, Georgia, and Florida from July 1, 1765, to April 10, 1776, Annotated by Francis Harper*. Transactions of the American Philosophical Society n.s. 33(1). Philadelphia.

Bartram, W.
1909 Observations on the Creek and Cherokee Indians, 1789. *Transactions of the American Ethnological Society* 3(1):1-81. Facsimile reprint, originally published 1853.

1943 *Travels in Georgia and Florida, 1773-74: A Report to Dr. John Fothergill, edited by Francis Harper*. Transactions of the American Philosophical Society n.s. 33(2). Philadelphia.

Bell, R. E.
1958 Guide to the Identification of Certain American Indian Projectile Points. *Oklahoma Anthropological Society, Bulletin* No. 1.

Binford, L.R.
1967 Smudge Pits and Hide Smoking: The Use of Analogy in Archaeological Reasoning. *American Antiquity* 32(1):1-12.

Binford, L.R., and G.I. Quimby
1963 Indian Sites and Chipped Stone Materials in the Northern Lake Michigan Area. *Fieldiana-Anthropology* 36:277-307.

Blanton, D. B.
1986 Report of the Malbone Powerline Site in Bartow County, Georgia. Paper presented at the Society for Georgia Archeology, Spring Meeting, Macon Georgia.

Browman, D. L.
1981 Isotopic Discrimination and Correction Factors in Radiocarbon Dating. In *Advances in Archaeological Method and Theory,* Vol. 4, edited by Michael B. Schiffer, pp. 241-295. Academic Press, New York.

Cable, J.S.
1991 *Archeological and Historical Survey of Selected Shoreline Locations in the Impact Zone of the Proposed Expansion of the Conservation Pool, Falls Lake, North Carolina.* New South Associates Technical Report 46. New South Associates, Inc., Stone Mountain, Ga.

Caldwell, J. R.
1950 A Preliminary Report on Excavations in the Allatoona Reservoir. *Early Georgia* 1 (1): 5-21.

1953 *Appraisal of the Archaeological Resources, Buford Reservoir in Hall, Forsyth, Dawson, and Gwinnett Counties, Northern Georgia.* Ms., River Basin Surveys, Smithsonian Institution, Washington.

1957 *Survey and Excavations in the Allatoona Reservoir, Northern Georgia.* Anthropological Papers of the University of Georgia. (meters.S., 1952).

1958 Trend and Tradition in the Prehistory of the Eastern United States. *American Anthropological Association, Memoir* 88.

Caldwell, J. R., and C. McCann
1941 *Irene Mound Site, Chatham County, Georgia.* University of Georgia Press, Athens.

1947 Appraisal of the Archeological Resources, Allatoona Reservoir in Bartow, Cobb, and Cherokee Counties, Georgia. Manuscript on File, Smithsonian Institution, Washington.

Caldwell, J.R., C.E. Thompson, and S.K. Caldwell
1952 The Booger Bottom Mound, a Forsyth Period Site in Hall County, Georgia. *American Antiquity* 17(4):319-328.

Cambron, J. W.
1958 Projectile Point Types from the Tennessee Valley, Part III. *Journal of Alabama Archaeology* 4(2):10-12.

Cambron, J. W. and D. Hulse
1975 *Handbook of Alabama Archeology: Part I: Point Types.* Archeology Research Center Association of Alabama, Inc., Birmingham.

Chapman, C.H., and L.O. Anderson
1955 The Campbell Site: A Late Mississippi Town Site and Cemetery in Southeast Missouri. *Missouri Archaeologist* 17(2-3).

Chapman, J.
1973 *The Icehouse Bottom Site: 40MR23* Department of Anthropology, University of Tennessee, Report of Investigations 13. Report submitted to Tennessee Valley Authority.

Chapman, J., and A. B. Shea
1981 The Archaeobotanical Record: Early Archaic Period to Contact in the Lower Little Tennessee River Valley. *Tennessee Anthropologist* 6(1): 61-84.

Clark, W. Z., Jr., and A. C. Zisa
1976 *Physiographic Map of Georgia*. Geological and Water Resource Division, Department of Natural Resources, Atlanta.

Coe, J. L.
1964 The Formative Cultures of the Carolina Piedmont. *Transactions of the American Philosophical Society*, n.s., 54.

Crane, H. R., and J. B. Griffin
1962 University of Michigan Radiocarbon Dates VII. *Radiocarbon* 4.

Crook, M. R., Jr.
1984 *Cagle Site Report: Archaic and Early Woodland Period Manifestations in the North Georgia Piedmont.* Georgia Department of Transportation, Occasional Papers in Cultural Resource Management 2. Atlanta.

DeJarnette, D. L., E. Kurjak, and J. Cambron
1962 Stanfield-Worley Bluff Shelter Excavations. *Journal of Alabama Archeology* 8(1-2):1-124.

DeJarnette, D. L., E. Kurjak, and B.C. Keel
1963 Archaeological Investigations of the Weiss Reservoir of the Coosa River in Alabama, Parts I and II. *Journal of Alabama Archaeology* 9:1-200.

DePratter, C.B.
1979 Ceramics. In *The Anthropology of St. Catherines Island, 2. The Refuge-Deptford Mortuary Complex,* edited by David Hurst Thomas

and Clark Spencer Larsen, pp. 109-132. Anthropological Papers of the American Museum of Natural History No. 56 (1). New York.

1990 Personal Communication to John Cable, Institute of Archaeology and Anthropology, Columbia, S.C., November.

Dickens, R. S.
1975 A Processual Approach to Mississippian Origins on the Georgia Piedmont. *Southeastern Archaeological Conference Bulletin* 18: 31-42.

Eidt, R.C.
1985 Theoretical and Practical Considerations in the Analysis of Anthrosols. In *Archaeological Geology*, edited by G. Rapp, Jr. and J. A. Gifford, pp. 155-190. Yale University Press, New Haven.

Fairbanks, C. H. and B. C. Keel
1966 Excavations at the Elsom Mound. *Florida Anthropologist* 19:7-23.

Ferguson, L. G.
1971 *South Appalachian Mississippian.* Ph. D. Dissertation, Department of Anthropology, University of North Carolina, Chapel Hill. University Microfilms, Ann Arbor.

Ford, R. I.
1985 Patterns of Prehistoric Food Production in North America. In *Prehistoric Food Production in North America*, edited by Richard I. Ford, pp 341-364. Museum of Anthropology, University of Michigan, Anthropological Papers No. 75. Ann Arbor.

Garrow, P. H.
1975 The Woodland Period North of the Fall Line. *Early Georgia* 3(1):17-26.

Goad, S. I.
1979 *Chert Resources in Georgia: Archeological and Geological Perspectives.* Laboratory of Archeology, University of Georgia Series Report 21.

Goodyear, A. C., J. H. House, and N. W. Ackerly
1979 *Laurens-Anderson: An Archeological Study of the Interriverine Piedmont.* Anthropological Studies 4, Institute of Archeology and Anthropology, University of South Carolina.

Gresham, T. H., and K. G. Wood
1986 *Archaeological Data Recovery at 38AB387 and 9EB368, Richard B. Russell Lake, Abbeville County, South Carolina and Elbert County, Georgia*. Final Contract DACW21-86-M-0132, Report Prepared for the U.S. Army Corps of Engineers, Savannah.

Griffin, John W.
1974 *Investigations in Russel Cave*. National Park Service Publications in Archaeology No. 13.

Hally, D. J.
1970 *Archaeological Investigation of the Potts' Tract Site (9Mu103), Carters Dam, Murray County, Georgia.* University of Georgia, Laboratory of Archaeology Series Report No. 6. Athens.

1980 *Archaeological Investigations of the Little Egypt Site (9Mu102), Murray County, Georgia, 1970-72 Seasons.* Report submitted to the Heritage Conservation and Recreation Service, US Department of the Interior, by the University of Georgia, Laboratory of Archaeology.

1991 Personal Communication to L. Raymer. Laboratory of Archaeology, University of Georgia, Athens. January.

Hally, D. J., P. H. Garrow, and W. Trotti
1975 Preliminary Analysis of the King Site Settlement Plan. *Southeastern Archaeological Conference Bulletin* 18:55-62.

Hally, D. J., and J. B. Langford, Jr.
1988 *Mississippi Period Archaeology of the Georgia Valley and Ridge Province* . University of Georgia Laboratory of Archeology Series Report Number 25. Athens.

Hally, D. J., and J. L. Rudolph
1986 *Mississippi Period Archeology of the Georgia Piedmont.* University of Georgia Laboratory of Archeology Series Report Number 24. Athens.

Hargrove, Thomas H., Carol Spears, G. Ishmael Williams, and Scott Madry
n.d. *Archaeological Investigations of the National Register Bennehan-Cameron Plantation Historic District and the Areas of Recreational Development and Proposed Wildlife Subimpoundments at Falls Lake, Wake and Durham Counties, North Carolina*. Archaeological Research Consultants, Inc. Draft Report Submitted to U.S. Army Engineer District, Wilmington, Wilmington, North Carolina.

Hough, W.
1926 *Fires as an Agent in Human Culture.* Smithsonian Institution, United States National Museum Bulletin 139. Washington.

House, J. H. and D. L. Ballenger.
1976 *An Archaeological Survey of the Interstate 77 Route in the South Carolina Piedmont.* Institute of Archeology and Anthropology, University of South Carolina, Research Manuscripts Series 104.

Hudson, C,
1976 *The Southeastern Indians.* The University of Tennessee Press, Knoxville.

Hudson, C., M. Smith, D.J. Hally, R. Polhemus, and C. DePratter
1985 Coosa: A Chiefdom in the Sixteenth-Century Southeastern United States. *American Antiquity* 50:723-737.

Jeffries, R. W.
1976 Tunnacunne Site: Evidence of Hopewell Interaction in Northwest Georgia. Anthropological Papers of the University of Georgia, No. 1. Athens

Jenkins, N.J.
1975 The Wheeler Series and Southeastern Prehistory. *Florida Anthropologist* 18:17-26

Johannessen, S.
1984 Paleoethnobotany. In *American Bottoms Archeology: A Summary of the FAI-270 Project Contribution to the Culture History of the Mississippi River Valley,* edited by C. J. Bareis and J. W. Porter, pp. 197-214. University of Illinois Press, Urbana and Chicago.

Justice, N.D.
1987 *Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States, a Modern Survey and Reference*. Indiana University Press, Bloomington.

Keel, B. C.
1976 *Cherokee Archeology: A Study of the Appalachian Summit* University of Tennessee Press, Knoxville.

Keeley, L. H.
1980 *Experimental Determination of Stone Tool Uses* . University of Chicago Press. Chicago.

Kellar, J. H., A. R. Kelly, and E. V. Michael
1962 The Mandeville Site in Southwest Georgia. *American Antiquity* 27:336-355.

Kelly, A.R.
1972 *The 1970-1971 Field Seasons at Bell Field Mound, Carters Dam.* Report submitted to USDI, National Park Service, Atlanta, GA.

Kelly, A.R., and L.H. Larson, Jr.
1956 Explorations at Etowah Indian Mounds Near Cartersville, Georgia: Seasons 1954, 1955, 1956. *Archaeology* 10(1):39-48.

Kelly, A.R., and R.S. Neitzel
1961 *The Chauga Site in Oconee County, South Carolina* University of Georgia, Laboratory of Archaeology Series, Report 3. Athens.

Kelly, A.R., F. T. Schnell, D. F. Smith, and A. L. Schlosser
1965 *Explorations in Sixtoe Field, Carter's Dam, Murray County, Georgia: Seasons 1962, 1963, 1964* Report submitted to USDI, National Park Service, Atlanta, GA.

Kelly, A. R., and B. A. Smith
1975 *The Swift Creek Site, (9BI3), Macon, Georgia.* Ms., Department of Anthropology, University of Georgia, Athens.

Kobayashi, H.
1973 The Experimental Study of Bipolar Flakes. In *Lithic Technology: Making and Using Stone Tools* , edited by E. Swanton, pp. 115-127. Mouton Publishers, The Hague.

Kneberg, M.
1956 Some Important Projectile Point Types Found in the Tennessee Area. *Tennessee Archaeologist* 12(1):17-28.

1957 Chipped Stone Artifacts of the Tennessee Valley Area. *Tennessee Archaeologist* 13(1):55-66.

Langley, T.M., and W. L. Marter
1973 *The Savannah River Plant Site*. United States Atomic Energy Commission Report DP-1323.

Larson, L. H., Jr.
1971 Archaeological Implications of Social Stratification of the Etowah Site, Georgia. In *Approaches to the Social Dimensions of Mortuary Practices,* edited by J. A. Brown, pp. 58-67. Society for American Archaeology, Memoir 25.

Lay, D W.
1969 Foods and Feeding Habits of White-tailed Deer. In *White-tailed Deer in the Southern Forest Habitat*, edited by Lowell K. Halls, pp. 8-13. U.S.D.A. Forest Service, Southern Forest Experiment Station in Cooperation with the Forest Game Committee of the Southeastern Section of the Wildlife Society and the School of Forestry, Stephen F. Austin State University.

Ledbetter, J. R., W. D. Wood, K. G. Wood, and R. F. Ethridge
1986 *Cultural Resources Survey of Allatoona Lake Area.* Report submitted to the U. S. Army Corps of Engineers, Mobile District by Southeastern Wildlife Services, Inc.

Lefler, H. T. (editor)
1967 *A New Voyage of Carolina.* University of North Carolina Press, Chapel Hill.

Leggett, W. C.
1973 The Migration of the Shad. *Scientific American* 216:92.

Lewis, T. M. N. and M. Kneberg
1946 *Hiwassee Island.* University of Tennessee Press, Knoxville.

1957 The Camp Creek Site. *Tennessee Archaeologist* 11(2):75-82.

Logan, J. H.
1859 *A History of the Upper Country of South Carolina from the Earliest Periods to the Close of the War of Independence I.* S.G. Courtenay and Company, Charleston P.B. Glass, Columbia.

Martin, A. C., and W. D. Barkley
1961 *Seed Identification Manual.* University of California Press, Berkeley.

McConnell, K. I., and C. E. Adams
1984 *Geology of the Greater Atlanta Region.* Bulletin 96, Georgia Geologic Survey, Atlanta.

McKern, W.C.
1939 The Midwestern Taxonomic Method as an Aid to Archaeological Study. *American Antiquity* 4:301-313.

Milanich, J. T.
1973 The Southeastern Deptford Culture: A Preliminary Definition. *Bureau of Historic Sites and Properties, Division of Archives, History and Records Management, Bulletin* 3:51-63. Tallahassee.

Miller, C. F.
n.d. *Contributions to the Archeology of Georgia: Archeological Explorations in the Allatoona Reservoir, Northwest Georgia*. University of Georgia, Laboratory of Archaeology, Manuscript No. 109. Athens.

Mills, Robert
1826 *Statistics of South Carolina, Including a View of its Natural, Civil, and Military History, General and Particular.* Hurlbutt and Lloyd, Charleston.

Moerman, Daniel E.
1986 *Medicinal Plants of Native America* , Volume I. Research Reports in Ethnobotany, Contribution 2. University of Michigan Museum of Anthropology Technical Reports, Number 19.

Moore, W. H.
1967 *Deer Browse Resources of the Atomic Energy Commission's Savannah River Project Area.* U.S.D.A. Forest Service, Southeastern Forest Experimental Station, Resource Bulletin No. SE-6. Asheville, NC.

Montgomery, F. H.
1977 *Seeds and Fruits of Plants of Eastern Canada and Northeastern United States.* University of Toronto Press, Toronto.

Newcomer, M. H.
1971 Some Quantitative Experiments in Handaxe Manufacture. *World Archaeology* 3(1):85-93.

Newell, H. P., and A. D. Krieger
1949 *The George C. Davis Site, Cherokee County, Texas.* Memoirs of the Society for American Archaeology No. 5.

Pace, R. E., and G. A. Apfelstadt
1978 *Allison-LaMotte Culture of the Daugherty-Monroe Site, Sullivan County, Indiana.* Report submitted to Interagency Archeological Services, Atlanta.

Pearsall, D.
1989 *Paleoethnobotany: A Handbook of Procedures.* Academic Press, San Diego.

Peebles, C. S.
1978 Determinants of Settlement Size and Location in the Moundville Phase. In, *Mississippian Settlement Patterns*, edited by B. D. Smith, pp. 369-416. Academic Press, New York.

Penny, J. T.
1950 Distribution and Bibliography of the Mammals of South Carolina. *Journal of Mammology* 31(1):81-89.

Perino, G.
1966 The Banks Village Site, Crittenden, County, Arkansas. *Missouri Archaeological Society, Memoir* No. 4.

Polhemus, R.
1985 *Mississippian Architecture: Temporal, Technological, and Spatial Patterning of Structures at the ToquaSite (40MR6).* M.A. Thesis, Department of Anthropology, University of Tennessee, Knoxville.

1990 Dallas Phase Architecture and Sociopolitical Structure. In *Lamar Archaeology: Mississippian Chiefdoms in the Deep South,* edited by M. Williams and G. Shapiro, pp. 125-138. The University of Alabama Press, Tuscaloosa.

Powell, J. W.
1875 *Exploration of the Colorado River of the West and Its Tributaries, 1869-1872.* Smithsonian Institution, Washington.

Radford, A. E., H. E. Ahles, and C. R. Bell
1968 *Manual of the Vascular Flora of the Carolinas.* The University of North Carolina Press, Chapel Hill.

Ritchie, W. A.
1961 *A Typology and Nomenclature for New York Projectile Points.* New York State Museum and Science Service Bulletin No. 384.

1971 *A Typology and Nomenclature for New York Projectile Points.* New York State Museum and Science Service Bulletin No. 384. Revised Edition.

Rostlund, E.
1952 *Freshwater Fish and Fishing in Native North America.* University of California Press, Berkeley.

Roth, W. E.
1897 *Ethnological Studies Among the North-West-Central Queensland Aboriginies.* F. King and Sons, Halifax, England.

Rudolph, J. L.
1984 Earthlodges and Platform Mounds: Changing Public Architect e in the Southeastern United States. *Southeastern Archaeology* 3(1): 33-45.

1985 A South Appalachian Mississippian Adaptive Niche. Paper presented at the Annual Meeting of the Southeastern Archaeological Conference, Birmingham, Alabama.

Rudolph, J. L., and D. J. Hally
1985 *Archaeological Investigation of the Beaverdam Creek Site (9EB85), Elbert County, Georgia.* Atlanta Interagency Archeological Services Division, National Park Service, Russell Papers.

Rudolph, T. P.
1986 The Late Woodland "Problem" in North Georgia. Paper Presented at the 43rd Annual Meeting of the Southeastern Archaeological Conference, Nashville Tennessee. November 6, 1986.

Runquist, J.
1979 *Analysis of the Flora and Faunal Remains from Proto-historic North Carolina Cherokee Indian Sites.* Ph.D. Dissertation, Department of Anthropology, North Carolina State University, Raleigh.

Schiffer, Michael B.
1986 Radiocarbon Dating and the "Old Wood" Problem: The Case of the Hohokam Chronology. *Journal of Archaeological Science* 13:13-30.

Schroedl, G. F.
1986a Features, Postmolds, and Burial Pits. In *Overhill Cherokee Archaeology at Chota-Tanasee*, edited by Gerald F. Schroedl, pp. 43-123. University of Tennessee, Department of Anthropology, Report of Investigations 38.

1986b Toward an Explanation of Cherokee Origins in Eastern Tennessee. In *The Conference on Cherokee Prehistory*, assembled by D.G. Moore, pp. 122-138. Warren Wilson College, Swannanoa, North Carolina

Schroedl, G. F., and A. B. Shea
1986 Plant Remains. In *Overhill Cherokee Archaeology at Chota-Tanasee* , edited by Gerald F. Schroedl, pp. 43-123. University of Tennessee, Department of Anthropology, Report of Investigations 38.

Schnell, F. T.
1975 The Woodland Period South of the Fall Line. *Early Georgia* 3(1):27-36

Scully, E. G.
1951 *Some Central Mississippi Valley Projectile Point Types.* Museum of Anthropology, University of Michigan. Ann Arbor.

Sears, W. H.
1953 *Excavations at Etowah.* Department of Anthropology, University of Georgia, Athens.

1956 *Excavations at Kolomoki, Final Report*. University of Georgia Series in Anthropology No. 5. Athens.

1958 *The Wilbanks Site (9Ck5), Georgia*. Bureau of American Ethnology Bulletin 169:129-194.

1963 *The Tucker Site on Alligator Harbor, Franklin County, Florida*. Contributions of the Florida State Museum, Social Sciences No. 9.

Semenov, S. A.
1964 *Prehistoric Technology, An Experimental Study of the Oldest Stone Tools and Artefacts from Traces of Manufacture and Wear*. Barnes & Noble, Inc., New York. Translated and edited by W. Thompson.

Shelford, V. E.
1963 *The Ecology of North America.* University of Illinois Press, Urbana.

Smith, B. A.
1975 The Relationship Between Deptford and Swift Creek Ceramics as Evidenced by the Mandeville Site, 9 Ca 1. *Southeastern Archaeological Conference, Bulletin* 18:195-200.

Smith, B. D.
1978 Variations in Mississippian Settlement Patterns. In *Mississippian Settlement Patterns,* edited by B.D. Smith, pp. 479-503. Academic Press, New York.

1986 The Archaeology of the Southeastern United States: From Dalton to De Soto, 10,500-500 B.P. In *Advances in World Archaeology*, edited by F. Wendorf and A. Close, pp. 1-91. Academic Press, New York.

Smith, M. T.
1981 *Archaeological Investigations at the Dyar Site, 9GE5.* Wallace Reservoir Project Contribution No. 14, Department of Anthropology, University of Gerogia, Athens.

1983 The Development of Lamar Ceramics in the Wallace Reservoir: The Evidence from the Dyar Site, 9 GE 5. *Early Georgia* 11:74-85.

Snow, F. H,
1975 Swift Creek Designs and Distributions: A South Georgia Survey. *Early Georgia* 3(2(:38-59).

Southerlin, B.
1990 Personal Communication to L. Raymer, University of Georgia, Athens. November.

Speck, F. G.
1909 *Ethnology of the Yuchi Indians.* Anthropological Publications of the University Museum, University of Pennsylvania Vol. 1(1). Philadelphia.

Steponaitis, Vincas P.
1986 Prehistoric Archaeology in the Southeastern United States, 1970-1985. *Annual Review of Anthropology* 15:363-404.

Stuiver, M., and B. Becker
1986 High Precision Decadal Calibration of the Radiocarbon Time Scale, A. D. 1950-2,500 B. C. *Radiocarbon* 28(2B):863-910.

Sullivan, L.P.
1987 The Mouse Creek Phase Household. *Southeastern Archaeology* 6(1): 16-29.

Swanton, J. R.
1946 *The Indians of the Southeastern United States.* Smithsonian Institution, Bureau of American Ethnology, Bulletin 137.

Thomas, C.
1894 *Report on the Mound Explorations of the Bureau of Ethnology.* 12th Annual Report of the Bureau of American Ethnology, Washington.

Thomas, P. M., and L. J. Campbell
1985 The Deptford to Santa Rosa/Swift Creek Transition in the Florida Panhandle. *The Florida Anthropologist* 38 (1-2), Part 2:110-119.

United States Department of Agriculture
1948 *Woody-plant Seed manual* . U.S. Forest Service, Miscellaneous Publication 654.

1980 *Description of the Ecoregions of the United States.* United States Forest Service, Miscellaneous Publication 1391.

Wagner, G. E.
1982 Testing Flotation Recovery Rates. *American Antiquity* 47: 127-132.

Walthal, J. A.
1972 The Chronological Position of Copena in Eastern States Archaeology. *Journal of Alabama Archaeology* 18(2):137-151.

Waring, Antonio J., and Preston Holder
1968 The Deptford Ceramic Complex. In *The Waring Papers: the Collected Works of Antonio J. Waring* , edited by Stephen J. Williams, pp. 135-151. Harvard University, Papers of the Peabody Museum of Archaeology and Ethnology No. 58. Cambridge.

Watson, P. J.
1976 In Pursuit of Prehistoric Subsistence: A Comparative Account of Some Contemporary Flotation Techniques. *Mid-Continental Journal of Archeology* 1(1): 77-100.

Wauchope, R.
1966 *Archaeological Survey of Northern Georgia.* Memoirs of the Society for American Archeology 21, Salt Lake City.

Wharton, C. H.
1989 The Natural Environments of Georgia. *Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey, Bulletin* 114.

Willey, G. R.
1949 *Archeology of the Florida Gulf Coast.* Smithsonian Miscellaneous Collections 113.

1973 *Archaeology of the Florida Gulf Coast.* AMS Press, Inc., New York. Reprint.

Willey, G. R. and P. Phillips
1958 *Method and Theory in American Archaeology.* Aldine Publishing Co., Chicago.

Williams, J. M.
1990 Personal Communication to Leslie Raymer, August 31, 1990. University of Georgia, Athens.

Williams, J. M., and G. Shapiro, editors
1990 *Lamar Archaeology: Mississippian Chiefdoms in the Deep South* University of Alabama Press, Tuscaloosa.

Wilmsen, E. N.
1970 *Lithic Analysis and Cultural Inference: A Paleo-Indian Case*. Anthropological Papers of the University of Arizona Press, No. 16. The University of Arizona Press, Tucson.

Wood, W. D.
1981 *An Analysis of Two Early Woodland Households from the Cane Island Site, 9 PM 209.* Department of Anthropology, University of Georgia, Wallace Reservoir Project Contribution 4.

1990 Regional Chronology of Allatoona Lake. In *Lamar Archaeology: Mississippian Chiefdoms in the Deep South*, edited by J. M. Williams and G. Shapiro, pp. 44-46. University of Alabama Press, Tuscaloosa.

Wood, W. D., D. T. Elliott, T. P. Rudolph, and D. B. Blanton
1986 *Prehistory in the Richard B. Russel Reservoir: The Archaic and Woodland Periods of the Upper Savannah River: The Final Report of the Data Recovery at the Anderson and Elbert County Groups: 38AN8, 38AN29, 38AN126, 9EB17, 9EB19, and 9EB21*. Report prepared by Southeastern Archaeological Services for the National Park Service, Atlanta Archeological Services Division.

Yarnell, R. A.
1964 *Aboriginal Relationships Between Culture and Plant Life in the Upper Great Lakes Region*. Anthropological Papers, Museum of Anthropology, University of Michigan No. 23

Yarnell, R. A, and meters. J. Black
1985 Temporal Trends Indicated by a Survey of Archaic and Woodland Plant Food Remains from Southeastern North America. *Southeastern Archeology* 4(2): 93-106.

APPENDIX I: RESUME OF PRINCIPAL INVESTIGATOR

JOHN S. CABLE
ARCHEOLOGIST
NEW SOUTH ASSOCIATES

Education

PhD. Candidate, Arizona State University, 1989.
M.A., Anthropology, Arizona State University, 1977.
B.A., Anthropology, Arizona State University, 1972.

Areas of Specialization

Southwestern Prehistory
Southeastern Prehistory
Settlement Patterning
Hohokam Archeology
Statistical Methods
Ceramic Technology
Lithic Technology
Absolute Dating Techniques

Professional Memberships

American Anthropological Association
Society for American Archaeology
Arizona Archaeological Council (Book Review Editor 1989)
Southeastern Archeological Conference
Friends of North Carolina Archaeology
Archeological Society of South Carolina

Teaching Experience

1986 Certification Training, Arizona Archaeological Society, Pueblo Grande Museum
1977 Teaching Assistant, Department of Anthropology, Arizona State University
1976 Teaching Assistant, Department of Anthropology, Arizona State University

Professional Experience

1989 Archaeologist, New South Associates
1987 Archaeological Project Director, Soil Systems, Inc., Phoenix, Arizona
1985 Assistant City Archaeologist, Phoenix, Arizona
1982 Archaeological Project Manager, Soil Systems Inc., Phoenix, Arizona
1979 Archaeological Project Manager, Commonwealth Associates, Jackson, Michigan
1977 Highway Archaeologist, Institute of Archaeology and Anthropology, University of South Carolina.

Reports and Publications

1991 Williams, G. Ishmael, John S. Cable, and Mary Beth Reed. *An Archeological Survey of 2,195 Acres in the Cainhoy Area, Wambaw and Witherbee Districts, Francis Marion National Forest. Francis Marion National Forest Indefinite Services Survey Report 1.*New South Associates Technical Report 66. Report submitted to the USDA Forest Service,

1991 *Prehistoric Adaptations to the Interior Uplands Environment of the Central South Carolina Coast: Test Excavations at Three Sites (38BK769,38BK1176, and 38CH1189) in the Francis Marion National Forest.* New South Associates Technical Report 60. Report submitted to the USDA Forest Service.

1991 *Management Summary: Archeological Test Excavations at Three Prehistoric Sites (38BK769, 38BK1176, and 38CH1189) in Wambaw Swamp, Francis Marion National Forest, South Carolina.* New South Assocaites Technical Report 57. Report submitted to the USDA Forest Service.

1991 Cable, John C. and Leslie E. Raymer (with contributions). *Archeological Test Excavations at the Lake Ackworth Site (9co45) and the Butler Creek Site (9co46), Allatoona Lake, Cherokkee and Cobb Counties, Georgia.* New South Associates Technical Report 54. Report submitted to the Mobile Corps of Engineers.

1991 *Archeological and Historical Survey of Selected Shoreline Locations in the Impact Zone of the Proposed Expansion of the Conservation Pool, Falls Lake, North Carolina.* New South Associates Technical Report 46. Report submitted to the Wilmington Corps of Engineers.

1990 *Archeological Test Excavations On The Northeastern Perimeter Of The Buck Hall Site (38 Ch 644), Buck Hall Recreation Area, Francis Marion National Forest, South Carolina.* New South Associates Technical Report 44. Report submitted to the USDA Forest Service.

1990 J. W. Joseph, John S. Cable, Mary Beth Reed, and David C. Marsh. *Archeological Survey of the Proposed Conway Bypass Corridor, Horry County, South Carolina.* New South Associates Technical Report 42. Report submitted to Sverdrup and the SCDHPT.

1990 J. W. Joseph and John S. Cable. *An Archeological Survey of the Proposed Conway Bypass: Management Summary.* New South Associates Technical Report 40. Report submitted to the SCDHPT.

1990 *Management Summary: Archeological Test Excavations on the Northeastern Perimeter of th Buck Hall Site (38CH644), Buck Hall Recreation Area, Francis Marion National Forest, South Carolina.* New South Associates Technical Report 36. Report submitted to the USDA Forest Service.

1990 *Management Summary: Archeological Testing And Evaluation Of Two Piedmont Upland Sites (9 Co 45 And 9 Co 46 In The Allatoona Reservoir,* *Georgia*. New South Associates Technical Report 34. Report submitted to the Mobile Corps of Engineers.

1990 John S. Cable, David C. Marsh, and Janet Maione. *Cultural Resources Survey and Testing of the George E. Crouch Estate, Allendale County, South Carolina*. New South Associates Technical Report 29. Report submitted to Lowcountry Aquaculture.

1990 John S. Cable and Mary Beth Reed. *Cultural Resource Survey, R-2303, NC 24, I-95 To I-40: Cumberland, Duplin, And Sampson Counties: Background Research Report*. New South Associates Technical Report 20. Report submitted to De Leuw, Cather & Company.

1989 Review of "Recent Research on Tucson Basin Prehistory: Proceedings of the Second Annual Tucson Basin Conference, edited by William H. Doelle and Paul R. Fish. *Arizona Archaeological Council Newsletter* 13.

1989 A Consideration of the Colonial and Sedentary Period Segments of the Hohokam Chronology. In *El Caserto: Colonial Period Settlement Along the East Papago Freeway*, edited by Douglas R. Mitchell. Soil Systems Publications in Archaeology Number 14. Phoenix.

1988 *Archaeological Testing Along the Hohokam Expressway Corridor East of Pueblo Grande, Phoenix, Arizona: Results and Preliminary Research Design for Data Recovery*. Soil Systems Technical Reports No. 88-21. Phoenix.

1988 John S. Cable and C. Bruce Donaldson. Estimation and Evaluation of Fieldhouse Densities from Dispersed Trench Samples. In *Arizona Department of Transportation Archaeological Testing Program: Part 2, East Papago Freeway*, edited by Daniel E. Landis, pp 277-292. Soil Systems Publications in Archaeology No. 13. Phoenix.

1988 Jerry B. Howard and John S. Cable. Intrasite Land-Use Patterns and Community Organization. In *Excavations at Casa Buena: Changing Hohokam Land Use Along the Squaw Peak Parkway, Volume 1*, edited by Jerry B. Howard, pp 833-902. Soil Systems Publications in Archaeology No. 11. Phoenix.

1988 John S. Cable and Ronald R. Gould. The Casa Buena Ceramic Assemblage: A Study of Typological Systematics and Ceramic Change in Classic Period Assemblages. In *Excavations at Casa Buena: Changing Hohokam Land Use Along the Squaw Peak Parkway, Volume 1*, edited by Jerry B. Howard, pp 271-358. Soil Systems Publications in Archaeology No. 11. Phoenix.

1988 John S. Cable and Douglas R. Mitchell. La Lomita Pequeña in Regional Perspective. In *Excavations at La Lomita Pequeña: A Santa Cruz/Sacaton Phase Farmstead in the Salt River Valley*, edited by Douglas R. Mitchell, pp 395-446. Soil Systems Publications in Archaeology No. 10. Phoenix.

1988 John S. Cable, Anne-Marie Turley, and Richard Effland. The La Lomita Pequeña Ceramic Assemblage. In *Excavations at La Lomita Pequeña: A Santa Cruz / Sacaton Phase Farmstead in the Salt River Valley,* edited by Douglas R. Mitchell, pp 395-446. Soil Systems Publications in Archaeology No. 10. Phoenix.

1987 John S. Cable and Frank Ritz. *North Scottsdale Reconnaissance Survey, Scottsdale, Arizona.* Regional Environmental Consultants, Scottsdale.

1987 John S. Cable and David E. Doyel. Pioneer Period Village Structure and Settlement Pattern in the Phoenix Basin. In *The Hohokam Village: Site Structure and Organization* , edited by David E. Doyel. Southwestern and Rocky Mountain Division of the American Association of the Advancement of Science, Glenwood Springs, Colorado.

1987 John S. Cable and David E. Doyel. An Archival Investigation of the Pueblo Grande Ballcourt: Formation Processes and Chronology. Ms. on file. Pueblo Grande Museum, Phoenix.

1986 John S. Cable and David E. Doyel. 1986 Archeological Investigations at Las Canopas, Phoenix, Arizona. Ms. on file at Pueblo Grande Museum. Phoenix.

1986 John S. Cable and David E. Doyel. The Archaeology of Swillings Ditch: Phoenix' First Historic Canal. *Pueblo Grande Museum Anthropological Paper 2.* Phoenix.

1986 John S. Cable and David E. Doyel. *Archaeological Testing to the North of the Main Ruin at Pueblo Grande: The "Plaza " Testing Project* . Pueblo Grande Museum Papers. Phoenix.

1986 Review of "The Archaic Occupation of the Rosemont Area, Northern Santa Rita Mountains, Southeastern Arizona," by Bruce B. Huckell. *Arizona Archaeological Council Newsletter* 10.

1985 John S. Cable, Kathleen S. Hoffman, David E. Doyel, and Frank Ritz, editors. *City of Phoenix Archaeology of the Original Townsite: Block 24-East.* Soil Systems Publications in Archaeology No. 8. Phoenix.

1985 John S. Cable and David E. Doyel. Hohokam Land-Use Patterns Along the Terraces of the Lower Salt River Valley: The Central Phoenix Project. In *Proceedings of the 1983 Hohokam Symposium, Part I,* edited by Alfred. E. Dittert, Jr. and Donald E. Dove. Arizona Archaeological Society, Phoenix Chapter, Occasional Paper 2.

1984 John S. Cable, Jerry Howard, David A. Wilcox and Cory Dale Breternitz. *City of Phoenix, Archaeological Testing of the Squaw Peak Parkway: An Identification, Evaluation and Assessment of Its Cultural Resources.* Soil Systems Publications in Archaeology No. 6. Soil Systems, Inc. Phoenix.

1984 Review of "Hohokam Archaeology Along the Salt-Gila Aqueduct, Central Arizona Project, Volume V: Small Habitation Sites on Queen Creek", edited by Lynn S. Teague and Patricia L. Crown. *Arizona Archaeological Council Newsletter* 8.

1984 John S. Cable, Susan L. Henry, and David E. Doyel, editors. *City of Phoenix, Archaeology of the Original Townsite: The Murphy's Addition.* Soil Systems Publications in Archaeology No. 3. Soil Systems, Inc. Phoenix.

1983 John S. Cable, Susan L. Henry and David E. Doyel, editors. *City of Phoenix, Archaeology of the Original Townsite: Block 28-North* . Soil Systems Publications in Archaeology No. 2. Soil Systems, Inc. Phoenix.

1982 John S. Cable, Susan L. Henry and David E. Doyel, editors. *City of Phoenix, Archaeology of the Original Townsite: Blocks 1 and 2.* Soil Systems Publications in Archaeology No. 1. Soil Systems, Inc. Phoenix.

1982 John S. Cable, Charles E. Cantley and Andrea Lee Novick. The Lithic Analysis of the Truman Reservoir Easement Land Sample, Southeastern Missouri. In *Archaeological Survey and Reconnaissance within the Ten-Year Floodpool, Harry S. Truman Dam and Reservoir* , edited by Richard H. Taylor. Commonwealth Associates Report of Investigations (R-2324). Jackson, Michigan.

1981 Stephen R. Claggett and John S. Cable, Assemblers. *The Haw River Sites: Archaeological Investigations at Two Stratified Sites in the North Carolina Piedmont.* Commonwealth Associates Report of Investigations (R-2386). Jackson, Michigan.

1981 John S. Cable and James W. Mueller. *Excavations at 31CH366: Report of Findings, Resource Assessment and Recommendations* Commonwealth Associates Report of Investigations (R-2330). Jackson, Michigan.

1980 *Cultural Resources Survey and Evaluation of U.S. Highway 421 from Siler City to Staley, Chatham and Randolf Counties, North Carolina.* Commonwealth Associates Report of Investigations (R-2049). Jackson, Michigan.

1979 John S. Cable, Charles E. Cantley and Andrea Lee Novick. The South Carolina 151 Intensive Field Study. MS. on file, South Carolina Institute of Archeology and Anthropology, Columbia.

1978 John S. Cable, Charles E. Cantley and Jim S. Sexton. A Study of Prehistoric Utilization of the Inter-Riverine Piedmont: the U.S. 176 Bypass from Union to Pacolet, South Carolina. *Institute of Archeology and Anthropology, University of South Carolina Research Manuscript Series 131.*

1978 John S. Cable, James L. Michie, Charles E. Cantley, and Stephen M. Perlman. An Archaeological Reconnaissance of the Bobby Jones Expressway Corridor, Aiken County, South Carolina. *Institute of Archeology and Anthropology, University of South Carolina Research Manuscript Series 121.*

1977 John S. Cable, James L. Michie. Subsurface Testing of 38GR30 and 38GR66, Two Sites on the Reedy River, Greenville County, South Carolina. *Institute of Archeology and Anthropology, University of South Carolina Research Manuscript Series 120.*

1977 John S. Cable and James L. Michie. An Archaeological Reconnaissance of the Chesnee Bypass Route, Cherokee and Spartanburg Counties, South Carolina. *Institute of Archeology and Anthropology, University of South Carolina Research Manuscript Series 120.*

nd Who Were the Prehistoric Occupants of Ak-Chin? A Study Concerning the Relationship Between Ethnicity and Ceramic Style. In *The Final Report of the Ak-Chin Archaeological Data Recovery Project* . Soil Systems Inc., in preparation. Phoenix.

Presented Papers and Symposia

1990 *Factors Influencing Early Hohokam Village Formation in the Phoenix Basin, Arizona.* 55th Annual Meeting of the Society for American Archaeology. Las Vegas.

1988 John S. Cable, Douglas R. Mitchell, Jerry Howard, and Cory Dale Breternitz. *Settlement Growth and Integration in a Large Hohokam Canal System.* First AAC Special Topics Symposium: Prehistoric Irrigation in Arizona. Pueblo Grande Museum, Phoenix.

1988 *The Processes Leading to the Adoption of Agriculture in the Phoenix Basin, Arizona.* 53rd Annual Meeting of the Society for American Archaeology, Phoenix

1987 John S. Cable and David E. Doyel. *The Archaic to Hohokam Transition: A View from the Pioneer Period.* Proceedings of the 1987 Hohokam Symposium, Arizona State University, Tempe.

1985 John S. Cable and David E. Doyel. *Pioneer Period Village Structure and Settlement Pattern in the Phoenix Basin.* 61st Annual Meeting of the Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Tucson.

1983 John S. Cable and David E. Doyel. *Hohokam Land-Use Patterns Along the Terraces of the Lower Salt River Valley: The Central Phoenix Project.* Proceedings of the 1983 Hohokam Symposium, Arizona State University, Tempe.

1981 *Variability in Early to Mid-Holocene Hunter-Gatherer Adaptive Organization in the North Carolina Piedmont.* 46th Annual Meeting of the Society for American Archaeology, San Diego.

1980 John S. Cable and Rachel Most. *The Bipolar Technique: Error or Adaptation.* 44th Annual Meeting of the Society for American Archaeology, Vancouver, BC.

1979 John S. Cable and Charles E. Cantley. *The South Carolina 151 Intensive Field Study*. 1979 Annual Meeting of the South Carolina Archaeological Society, Columbia.

1978 Charles E. Cantley and John S. Cable. *The Use of Point Sampling in the Preliminary Testing of Archaeological Sites.* 1978 Eastern States Archaeological Federation, Bellmawr, NJ.

1978 John S. Cable and Charles E. Cantley. *The Uses of SYMAP and Random Shovel Test Designs in Predicting Artifactual Distributions within Forested Archaeological Sites: the Godley Site, a Case Study.* 1978 Annual Meeting of the South Carolina Archaeological Society, Columbia.

1977 John S. Cable and Stephen M. Perlman. *Comments on Archaeology with a small "s" by Michael Trinkley.* 34th Annual Southeastern Archaeological Conference, Lafayette, LA.

1976 John S. Cable, Kent G. Lightfoot and Jeffery L. Hantman. *The Carefree Life: Procurement in a Desert Environment.* 20th Annual Meeting of the Arizona Academy of Science, Tucson.

APPENDIX II: 9Co46 - SHOVEL TEST DATA

STP	Northing	Easting	Depth	Munsell	Chert Deb	Qtz Deb	Tot Deb	Lith Tools	Sherds	Tot Artifacts
1	505	501	28	10 YR 4/3	0	1	1	0	0	1
2	510	501	20	10 YR 4/3	1	0	1	0	0	1
3	515	501	22	10 YR 4/3	1	0	1	0	0	1
4	520	501	20	10 YR 4/2	0	0	0	0	0	0
5	525	501	21	10 YR 4/3	0	1	1	0	0	1
6	530	501	20	10 YR 4/3	0	0	0	0	0	0
7	535	501	20	10 YR 4/3	0	0	0	0	0	0
8	540	501	18	10 YR 4/3	0	0	0	0	0	0
9	545	501	17	10 YR 4/3	0	1	1	0	0	1
10	550	501	9	10 YR 4/3	0	0	0	0	0	0
11	495	501	20	10 YR 4/3	0	0	0	0	0	0
12	490	501	20	10 YR 4/3	0	3	3	0	0	3
13	485	501	25	10 YR 4/3	5	2	7	0	0	7
14	480	501	23	10 YR 4/3	1	0	1	0	0	1
15	475	501	31	10 YR 4/3	0	1	1	0	0	1
16	470	501	29	10 YR 4/3	1	5	6	0	0	6
17	499	495	20	10 YR 4/3	0	1	1	0	0	1
18	499	490	22	10 YR 4/3	1	3	4	0	0	4
19	499	485	23	10 YR 4/3	1	0	1	0	0	1
20	499	480	20	10 YR 4/3	1	1	2	0	0	2
21	499	475	24	10 YR 4/3	0	6	6	0	0	6
22	499	470	23	10 YR 4/3	2	1	3	0	0	3
23	499	505	29	10 YR 3/4	0	3	3	1	0	4
24	499	510	20	10 YR 3/4	1	0	1	0	0	1
25	499	515	25	10 YR 3/4	0	0	0	0	0	0
26	499	520	12	10 YR 2/2	0	0	0	0	0	0
27	479	495	23	10 YR 2/2	0	1	1	0	0	1
28	479	490	27	10 YR 2/2	0	0	0	0	0	0
29	479	485	27	10 YR 2/2	0	0	0	0	0	0
30	479	480	33	10 YR 2/2	1	0	1	0	0	1
31	479	505	25	10 YR 2/2	2	2	4	0	0	4
32	479	510	20	10 YR 3/4	0	1	1	0	1	2
33	519	495	24	10 YR 4/3	2	2	4	0	2	6
34	519	490	33	10 YR 3/3	0	1	1	0	5	6
35	519	485	30	10 YR 4/3	2	1	3	0	12	15
36	519	475	27	10 YR 3/2	1	4	5	0	11	16
37	519	470	27	10 YR 4/3	3	0	3	0	3	6
38	519	505	18	10 YR 4/4	0	0	0	0	0	0
39	519	510	22	10 YR 4/3	2	0	2	0	0	2
40	519	515	32	10 YR 4/4	2	0	2	0	0	2
41	465	486	24	10 YR 3/2	2	2	4	0	3	7
42	470	486	30	10 YR 3/2	2	1	3	0	2	5
43	475	486	24	10 YR 3/2	0	0	0	0	0	0
44	480	486	17	10 YR 2/2	2	2	4	0	3	7
45	485	486	25	10 YR 3/2	1	4	5	0	3	8
46	490	486	22	10 YR 2/2	2	3	5	0	1	6
47	495	486	25	10 YR 2/2	4	1	5	0	0	5
48	505	486	27	10 YR 2/1	1	0	1	0	0	1
49	510	486	37	10 YR 2/2	4	8	12	0	8	20
50	515	486	31	10 YR 2/2	3	1	4	0	9	13
51	525	486	18	10 YR 2/2	0	2	2	0	3	5
52	530	486	23	10 YR 2/2	2	2	4	0	5	9
53	535	486	20	10 YR 2/2	0	1	1	0	1	2
54	540	486	27	10 YR 4/4	2	1	3	0	3	6

STP	Northing	Easting	Depth	Munsell	Chert Deb	Qtz Deb	Tot Deb	Lith Tools	Sherds	Tot Artifacts
55	545	486	25	10 YR 2/2	0	0	0	0	0	0
56	550	486	49	10 YR 2/2	1	0	1	0	8	9
57	470	490	29	10 YR 3/2	0	0	0	0	1	1
58	470	495	25	10 YR 3/2	2	2	4	0	2	6
59	475	490	25	10 YR 2/2	4	0	4	0	2	6
60	475	495	20	10 YR 2/2	3	3	6	0	1	7
61	485	490	22	10 YR 2/2	1	2	3	1	3	7
62	485	495	26	10 YR 2/2	0	0	0	0	2	2
63	490	490	32	10 YR 2/2	2	1	3	0	0	3
64	490	495	28	10 YR 2/2	3	3	6	0	3	9
65	495	490	29	10 YR 3/4	5	0	5	1	4	10
66	495	495	20	10 YR 2/2	0	0	0	0	2	2
67	505	490	26	10 YR 2/2	5	1	6	0	1	7
68	505	495	26	10 YR 2/2	1	2	3	0	0	3
69	510	490	31	10 YR 2/1	1	0	1	0	4	5
70	510	495	28	10 YR 3/4	2	1	3	0	3	6
71	515	490	18	10 YR 2/2	0	2	2	0	5	7
72	515	495	17	10 YR 3/4	0	0	0	0	2	2
73	525	490	24	10 YR 3/4	0	0	0	0	3	3
74	525	495	12	10 YR 3/4	1	1	2	0	0	2
75	530	490	22	10 YR 3/3	3	0	3	0	4	7
76	530	495	22	10 YR 3/3	1	1	2	0	1	3
77	535	490	33	10 YR 2/6	0	0	0	0	4	4
78	535	495	30	10 YR 3/3	0	0	0	0	3	3
79	540	490	30	10 YR 2/6	1	0	1	0	2	3
80	541	495	35	10 YR 3/3	0	0	0	0	5	5
81	485	480	15	10 YR 3/1	0	1	1	0	0	1
82	490	480	20	10 YR 2/1	1	2	3	0	2	5
83	490	475	25	10 YR 3/1	0	0	0	0	0	0
84	495	480	18	10 YR 3/2	0	0	0	0	2	2
85	495	475	18	10 YR 3/1	1	3	4	0	0	4
86	505	480	18	10 YR 3/2	0	2	2	0	0	2
87	505	475	25	10 YR 3/2	0	0	0	0	0	0
88	505	470	30	10 YR 2/2	2	1	3	0	5	8
89	510	480	25	10 YR 3/2	0	1	1	0	5	6
90	510	475	33	10 YR 3/2	1	0	1	1	6	8
91	510	470	24	10 YR 2/2	2	1	3	0	2	5
92	515	480	24	10 YR 3/4	2	1	3	0	5	8
93	515	475	31	10 YR 2/2	0	1	1	0	5	6
94	515	470	25	10 YR 3/2	0	1	1	0	3	4
95	525	480	21	10 YR 2/2	2	1	3	0	3	6
96	525	475	20	10 YR 2/2	3	0	3	0	0	3
97	525	470	21	10 YR 2/2	0	2	2	0	4	6
98	530	480	21	10 YR 2/2	0	1	1	0	1	2
99	530	475	18	10 YR 2/2	1	0	1	0	3	4
100	535	480	18	10 YR 5/6	0	0	0	0	2	2
101	535	475	19	10 YR 5/6	0	0	0	0	1	1
102	475	505	30	10 YR 3/2	2	1	3	0	2	5
103	485	505	31	10 YR 3/4	1	0	1	0	4	5
104	485	510	24	10 YR 4/3	2	0	2	0	3	5
105	490	505	25	10 YR 3/4	2	1	3	0	6	9
106	490	510	24	10 YR 4/3	0	3	3	0	0	3
107	495	505	26	10 YR 3/4	1	0	1	1	5	7
108	495	510	15	10 YR 4/3	2	0	2	0	0	2

STP	Northing	Easting	Depth	Munsell	Chert Deb	Qtz Deb	Tot Deb	Lith Tools	Sherds	Tot Artifacts
109	495	515	12	10 YR 4/3	0	0	0	0	0	0
110	505	505	35	7.5 YR 4/2	0	0	0	0	0	0
111	505	510	18	10 YR 4/3	0	0	0	0	0	0
112	505	515	18	10 YR 4/3	0	0	0	0	0	0
113	510	505	16	10 YR 4/4	1	0	1	0	0	1
114	510	510	12	10 YR 4/3	0	0	0	0	0	0
115	510	515	14	10 YR 4/3	0	0	0	0	0	0
116	515	505	19	10 YR 4/4	0	0	0	0	0	0
117	515	510	17	10 YR 4/3	0	0	0	0	0	0
118	515	515	15	10 YR 4/3	0	1	1	0	1	2
										0
	Totals				117	112	229	5	210	444

APPENDIX III: 9Co46 - DEBITAGE DATA

Excavation Unit	Level	Lithic Material	P	S	I	T	UF	SH	Totals
EU 1	1	Chert	1	2	1	13		1	18
		Quartz			3	21		1	25
		Subtotal	1	2	4	34		2	43
	2	Chert	2	7	9	66		1	85
		Quartz	1		10	42		3	56
		Quartz Crystal				1			1
		Subtotal	3	7	19	109		4	142
	3	Chert	3			9		2	14
		Quartz			3	10			13
		Subtotal	3		3	19		2	27
	Gr. Totals								
		Chert	6	9	10	88		4	117
		Quartz	1		16	73		4	94
		Quartz Crystal				1			1
		Totals	7	9	26	162		8	212
EU 2	1	Chert	10	3	7	60		4	84
		Quartz	1		12	43		4	60
		Subtotal	11	3	19	103		8	144
	2	Chert	3	2	4	28		4	41
		Quartz			15	20		2	37
		Subtotal	3	2	19	48		6	78
	3	Chert	4		1	25		3	33
		Quartz	1			18		5	24
		Quartz Crystal			1				1
		Subtotal	5		2	43		8	58
	Wall	Chert	3	2		5		1	11
		Quartz				4			4
		Subtotal	3	2		9		1	15
	Gr. Totals								
		Chert	20	7	12	118		12	169
		Quartz	2	0	27	85		11	125
		Quartz Crystal			1				1
		Totals	22	7	40	203		23	295

Excavation Unit	Level	Lithic Material	P	S	I	T	UF	SH	Totals
EU 3	1	Chert	6	5	1	29		3	44
		Quartz			2	28		8	38
		Quartz Crystal				2			2
		Subtotal	6	5	3	59		11	84
	2	Chert		5	7	93	3	12	120
		Quartz	1	3	17	22	15	9	67
		Quartz Crystal		1	4	4	3	2	14
		Chlorite Schist				1			1
		Subtotal	1	9	28	120	21	23	202
	3	Chert	4	3	3	33			43
		Quartz			8	20		2	30
		Quartz Crystal				1			1
		Subtotal	4	3	11	54	0	2	74
	4	Chert				8			8
		Quartz		2	4	7		4	17
		Quartz Crystal				1			1
		Subtotal	0	2	4	16	0	4	26
	Gr. Totals								
		Chert	10	13	11	163	3	15	215
		Quartz	0	5	17	149	3	22	196
		Quartz Crystal	0	1	4	8	3	2	18
		Chlorite Schist	0	0	0	1	0	0	1
		Totals	10	19	32	321	9	39	430
EU 4	1	Chert	11	3	6	51		3	74
		Quartz	1	1	21	79		18	120
		Quartz Crystal				2			2
		Subtotal	12	4	27	132	0	21	196
	2	Chert	7	6	6	82		4	105
		Quartz	3	13	11	60		10	97
		Subtotal	10	19	17	142	0	14	202
	Gr. Totals								
		Chert	18	9	12	133	0	7	179
		Quartz	4	14	32	139	0	28	217
		Quartz Crystal				2			2

Excavation Unit	Level	Lithic Material	P	S	I	T	UF	SH	Totals
		Totals	22	23	44	274	0	35	398
EU 5	1	Chert	1	7	2	48		1	59
		Quartz	2	2	12	1		14	31
		Quartz Crystal				56			56
		Subtotals	3	9	14	105	0	15	146
	2	Chert			2	42		5	49
		Quartz			27	28		7	62
		Quartz Crystal				1		2	3
		Subtotal	0	0	29	71	0	14	114
	3	Chert				2			2
		Quartz			1	9			10
		Subtotal	0	0	1	11	0	0	12
	4	Chert				2			2
		Quartz				11		2	13
		Subtotal	0	0	0	13	0	2	15
	4A	Chert				2			2
		Quartz			2	17		2	21
		Quartz Crystal				1			1
		Subtotal			2	20		2	24
	5	Quartz				1			1
		Subtotal	0	0	0	1	0	0	1
	Gr. Totals								
		Chert	1	7	4	96	0	6	114
		Quartz	2	2	42	67	0	25	138
		Quartz Crystal	0	0	0	58	0	2	60
		Totals	3	9	46	221	0	33	312

Feature	Level	Lithic Material	P	S	I	T	UF	SH	Totals
2	1	Chert	2		1	5			8
		Quartz		1	1	1			3
	Gr. Total		2	1	2	6			11
4	1	Chert	1	2	7	37		2	49
		Quartz	4	1	6	20		3	34
		Quartz Crystal				1		3	4
		Subtotal	5	3	13	58		8	87
	2	Chert				5			5
		Quartz			3	5			8
		Quartz Crystal				1			1
		Subtotal			3	11			14
	3	Chert	1		1	14		1	17
		Quartz				6		2	8
		Subtotal	1		1	20		3	25
		Grand Totals							
		Chert	2	2	8	56		3	71
		Quartz	4	1	9	31		5	50
		Quartz Crystal				1			1
		Totals	6	3	17	88		8	122
6	1	Chert				3			3
		Quartz			1	1		2	4
		Quartz Crystal				1		1	2
		Totals			1	5		3	9
Legend:	P=Primary Flake, S=Secondary Flake,								
	I=Interior Flake, T=Thinning Flake,								
	UF=Unidentifiable Flake, SH=Shatter								

APPENDIX IV: 9Co46 - PROJECTILE POINT DATA

SITE	BAG	STP	EU	SU	FEA	LEV	TYPE	MAT	COLOR	LENG	WID	THICK	SHO WID	BL LENG	D HAFT	P HAFT	B CON	CONDITION
9Co46	126		3			1	Camp Creek	Chert	Lt Gray		19.0	5.0					EXC	Lateral Section Missing
9Co46	142		4			2	Camp Creek	Chert	Lt Gray		15.0	3.5					UNID	Tip Missing, Base Fragmented
9Co46	121		1			2	Coosa	Chert	Lt Gray	18.0	15.5	5.5	15.5	13.0	9.5	9.0	UNID	Base Missing
9Co46	128		3			2	Coosa	Chert	Lt Gray/Pink Mottled	19.0	19.0	8.0	19.0	20.0	12.0	12.0	NAT	Reworked
9Co46	142		4			2	Coosa	Chert	Dk Gray	21.0	16.0	4.5	16.0	13.5	11.5	11.5	ST	Base Hinged
9Co46	122		1			3	Coosa Notched	Chert	Dk Gray		17.0	5.0	17.0		13.0	16.0	EXC	Tip Missing
9Co46	123		2			1	Coosa Notched	Chert	Lt Gray		18.0	6.0	18.0		11.5	13.0	EXC	Blade Missing
9Co46	125		2			2	Coosa Notched	Chert	Black			7.0			12.0	16.5	ST	Lateral Section Missing
9Co46	127		2			3	Coosa Notched	Chert	Black/Cream Mottled		22.5	7.0	22.5		14.0	18.0	ST	Upper Blade Missing
9Co46	127		2			3	Coosa Notched	Chert	Lt Gray	24.5	14.5	6.0	14.5	15.0	12.0	14.5	ST	Base Hinged
9Co46	126		3			1	Coosa Notched	Chert	Lt Gray	26.0	14.5	7.0	14.5	17.5	12.0	13.0	EXC	Tip Missing
9Co46	128		3			2	Coosa Notched	Chert	Black		19.0	7.0	19.0		15.0	16.0	EXC	Tip Missing
9Co46	128		3			2	Coosa Notched	Chert	Lt Gray	36.0	18.5	7.5	18.5	26.5	13.0	14.0	ST	Base Hinged
9Co46	128		3			2	Coosa Notched	Chert	Lt Gray			7.0			14.0	17.5	EXC	Blade Missing, Lateral Section Missing
9Co46	132		3			4	Coosa Notched	Chert	Gray/Brown Tran		20.0	7.0	20.0		15.5	19.0	EXC	Tip Missing, Asymmetrical Notching
9Co46	135		4			1	Coosa Notched	Chert	Lt Gray			7.5			13.0	15.5	EXC	Blade Missing
9Co46	135		4			1	Coosa Notched	Chert	Black/Grayish Brown		16.0	9.0	16.0		12.0		EXC	Tip/Basal Ears Missing
9Co46	138		4		4	1	Coosa Notched	Chert	Lt Gray			5.0			13.0	15.0	EXC	Lateral Section Missing
9Co46	138		4		4	1	Coosa Notched	Chert	Lt Gray	25.5	14.5	5.5	14.5	14.0	13.5	14.5	FRAG	Base Fragmented
9Co46	136		4			2	Coosa Notched	Chert	Black		17.0	5.0	17.0		13.5	16.0	UNID	Tip Missing, Base Hinged, Reworked
9Co46	152		4		4	3	Coosa Notched	Chert	Dk Gray		16.0	7.0	16.0		13.5	16.0	EXC	Upper Blade Missing
9Co46	137		5			1	Coosa Notched	Chert	Red/Brown Chalced	27.0	19.5	7.0	19.5	16.5	14.0	20.0	EXC	Shoulder Ear Missing
9Co46	139		5			2	Coosa Notched	Qtzite	Red	38.0	21.0	11.0	21.0	25.0	19.0	21.0	EXC	Tip Missing
9Co46	139		5			2	Coosa Notched	Chert	Dk Gray		18.5	8.0	15.5		15.0	18.5	EXC	Blade Missing
9Co46	153			2		0	Coosa Notched	Chert	Dk Gray/Cream Mottl		20.5	8.5	20.5		16.5	19.0	EXC	Tip Missing
9Co46	153			2		0	Coosa Notched	Chert	Yellowish Brown	40.0	17.0	7.0	17.0	28.0	14.0	15.0	EXC	Basal Ears Missing
9Co46	65	65					Coosa Notched	Chert	Dk Gray/Cream Mottl	30.5	15.5	8.5	15.5	20.5	11.5	13.0	EXC	Whole
9Co46	90	90					Coosa Notched	Chert	Lt Gray		15.5	7.0	15.5		13.0	15.5	ST	Base Hinged, Tip Missing
9Co46	107	107					Coosa Notched	Chert	Lt Gray		17.5	6.5	17.5		14.0	17.0	EXC	Tip Missing
9Co46	125		2			2	Copena	Chert	Dk Gray	35.0	18.0	8.0					ST	Whole
9Co46	146		2			W	Copena	Chert	Dk Gray	37.0	17.5	6.0					1.0	Whole
9Co46	126		3			1	Gary	Vein Qtz		40.5	22.0	8.5	22.0	27.0	16.5	14.0	UNID	Base Fragmented
9Co46	140		4			1	Gary	Gran Qtz		62.5		10.5		45.0	23.0	19.5	ST	Lateral Section Missing
9Co46	119					0	Gary	Gran Qtz		48.5	22.5	9.5	22.5	35.0	18.0	14.0	EXC	Whole
9Co46	153			2		0	Jacks Reef	Chert	Dk Gray	38.0	23.5	6.0	22.5	26.0	12.0	18.0	EXC	Shoulder Ear Missing
9Co46	123		2			1	Madison	Chert	Black		16.0	3.0					2.0	Upper Blade Missing
9Co46	135		4			1	Madison	Chert	Black		16.0	3.0					3.0	Upper Blade Missing
9Co46	140		4			1	Madison	Chert	Lt Gray		19.0	3.5					1.0	Upper Blade Missing
9Co46	135		4			1	Pickwick	Chert	Lt Gray	40.5	30.0	9.0	30.0	30.0	18.0	15.0	EXC	Shoulder Ear Missing
9Co46	153			2		0	Pickwick	Vein Qtz		38.5	35.0	9.0	35.0	28.0	21.5	17.0	EXC	Whole

APPENDIX V: MACROPLANT ANALYSIS METHODS

Floral and Faunal Analyses

Specialized analyses of the artifact collections included the analysis of macroplant remains from 13 bulk soil samples that were collected from 11 features at 9Co45 and 9Co46. The soil samples were processed by flotation and the recovered macroplant remains were identified by Ms. Leslie Raymer of New South Associates. The methods used in the recovery of the floral remains are described in the following section. Faunal remains that were recovered from Feature 4 at 9Co46 were identified by Mr. Bobby Southerlin of the University of Georgia.

Flotation Methods

Processing Techniques

Bulk soil samples were collected from nine features at 9Co45 and two features at 9CO46. The samples were collected from near the center and bottom of each feature. Whenever it was possible, five liter soil samples were collected from each sampled provenience. Several features contained less than 5 liters of soil in their fill. In these cases, the entire feature fill was collected for flotation. Twenty liters of soil from the Middle to Late Woodland features at 9Co46 and 30.25 liters from the Middle to Late Mississippian features at 9Co45 were submitted to the author for flotation and analysis.

Each sample was subjected to machine-assisted water separation in a scaled-down version of the Shell Mound Archeological Project (SMAP) flotation device described by Watson (1976). This system was selected because SMAP-style flotation systems consistently exhibit the greatest retrieval rates in recent tests evaluating macroplant recovery with various flotation devices (Pearsall 1989:91-94; Wagner 1982). The SMAP-style system used in this analysis was constructed by Ms. Raymer from nested five-gallon buckets. Except for the difference in size, this system is identical to those described by Watson (1976) and Pearsall (1989). The heavy fraction insert of this device is lined with 500 micron stainless steel wire mesh.

Because of the high clay content in the soil at 9Co45, the flotation samples that were collected from this site required defloculation. The 9Co46 flotation samples were not defloculated prior to their flotation. Each 9Co45 soil sample was placed in a ten percent solution of sodium bicarbonate and warm water for approximately half an hour. After the samples were throughly defloculated, the clay slurry that resulted from the defloculation process was gently agitated and all of the suspended charcoal was scooped out using a strainer made with 500 micron wire mesh. The clay slurry was then placed in the SMAP-type device and floated. The macroplant remains that were recovered by flotation from the SMAP device were combined with the suspended plant remains that were scooped out of the defloculated clay slurry. This combined material forms the light fractions from these samples. The heavy fractions consist of the material that settled to the bottom of the screen-lined insert during the flotation process.

Ethnobotanical Analysis Laboratory Methods

In the laboratory, each flotation light fraction and portions of four heavy fractions were first weighed, and than passed through nested geologic sieves (2.0 mm., 1.0 mm., 0.5 mm., 0.29 mm.). Each size-graded sub-sample was fully sorted under low magnification (10-25x). All of the material that was greater than 2.0 mm was pulled from the sample matrix and was quantified by material type (uncharred organic, wood charcoal, nutshell, corn remains, seeds, baked clay, unknown charred), by weight, and by count (nutshell, corn, seeds). Material that was smaller than 2.0 mm was fully sorted, but only the charred seeds were removed. All charred seeds were removed and tabulated by count.

A sample of the wood charcoal that was retained in the 2 mm geologic seive was identified. Whenever it was possible, twenty fragments of charred wood were identified to genus or to the more general categories of conifer, ring-porous dicot, diffuse-porous dicot, and unidentifiable dicot. The wood was so poorly preserved in several samples that it was impossible to identify twenty specimens.

TABLE 1. Heavy Fraction Recovery of the Greater Than 2mm Fraction and of the 75 ml Subsample of the Less Than 2mm Fraction, 9Co45.

Provenience	Sample Wt.	Wood Charcoal	Hickory Nutshell	Corn Remains
Fea. 21	308.0 gm	0.7	1/0.1	11/0.1
Fea. 24	174.0 gm	5.3	---	---

NOTE: 1. Wood Charcoal is recorded as weight in grams and Nutshell and Corn are recorded as count/wt. in grams.
2. The Corn Remains include 5 corn cupules and 6 corn kernal fragments.
3. No seeds were recovered from the 75 ml < 2mm subsample.

TABLE 2. Heavy Fraction Recovery, 100 ml Subsamples, 9Co46.

Provenience	Sample Wt.	Wood Charcoal	Hickory Nutshell	Black Walnut Nutshell	Walnut Fam. Nut
Fea. 4, center	193.8 gm	1	--	--	4
Fea. 4, edge	155.2 gm	1	1	2	4

NOTE: The total weight of the charred material from each sample was 0.1 gm.

The heavy fractions from two samples (Features 21 and 24) from 9Co45 and and two samples (Feature 4, Center and Feature 4, near the edge) from 9Co46 were partially sorted in addition to the light fractions in order to check the recovery rates of the flotation process. The macroplant material that was held in the 2.0 mm. sieves of each 9Co45 heavy fraction was fully sorted, and a 75 ml subsample of material which passed through the 2.0 mm sieve was sorted (see Table 1). One hundred milliliter subsamples from each of the 9Co46 heavy fractions were sorted (Table 2).

The flotation separation of these four samples appears to be excellent. Only 0.2 gm of charred material was recovered from the > 2mm fractions of the 9Co46 heavy fractions. The > 2mm. fraction of the Feature 21 sample from 9Co45 yielded 0.9 grams of charred plant remains and the 9Co45 Feature 24 sample contained 5.3 gm of wood charcoal. In contrast, the light fractions from these two features contained 35.4 gm and 24.3 gm of material, respectively. The charred plant remains collected from these heavy fractions are not considered further in this analysis.

Seeds and other plant parts were identified with standard reference texts (Martin and Barkeley 1961; Montgomery 1977; Radford, et al 1968; USDA 1948) and the author's personal reference collection.

Ethnobotanical Analytical Procedures

A variety of methods were employed to determine if the identifications were an artifact of a particular analytical procedure, or if they accurately reflected the structure of the data set. Three specific measures that were employed were: (1) species ubiquity, (2) species density, and (3) species abundance.

Species Ubiquity. Ubiquity analysis is used to describe the occurrence of the macroplant remains from 9Co45. In this form of analysis, the occurrence of each plant type is expressed as a percentage of the total number of proveniences in which a particular taxon is present. This measure ascribes equal weight to the physical presence of a given taxon, regardless of the abundance of that plant type in a particular sample. Therefore, a sample that contains one seed of a given taxon is equivalent to a sample containing several hundred of the same seed. This analysis offers a way to assess the relative importance of various plant specie and gives an indication of how common each plant type is at the site.

Species Density. Species density is used to show the count or weight of a species per liter of soil that is processed by flotation. This measure enables us to compare the relative densities of different plant taxa and is useful for standardizing raw count/weight data.

Species Abundance. Species abundance is used to measure the overall abundance of each taxon in a given macroplant assemblage. In this form of analysis, the occurrence of each plant type is expressed as a percentage of the total number of seeds that are recovered from each site (cf. Table 3). This analytical technique offers a way to assess the relative importance of each plant taxa within each macroplant assemblage.

TABLE 3. 9CO45 Charred Seeds, Tabulated by Count.

Taxon	F.1	F.2	F.21	F.23	F.24	F.25	F.29	F.100	F.116
Cultigens									
Corn Kernals	--	--	14	--	--	--	60	--	--
Corn Cupules	9	--	2028	1	--	--	35	9	--
Corn Cob Frag.	--	--	36	--	--	--	--	--	--
Hervaceous Plants									
Goosefoot	--	--	--	4	--	--	1	--	--
Purslane	--	--	--	--	--	--	--	--	1
Grass Family	--	--	--	--	--	--	--	1	--
Nightshade Fam.*	--	--	--	--	--	--	--	1	--
Fleshy Fruits									
Grape	--	--	--	--	--	15	--	--	--
Maypop	-	--	--	--	--	--	--	--	1
Nutshell									
Acorn	20	1	--	4	4	--	13	--	3
Hickory	--	3	2	1	--	5	445	--	--
Unidentifiable Seeds	2	--	--	--	--	5	1	--	--
Unknown Seeds	--	--	--	--	--	3**	--	--	--

NOTE: * Possible Nightshade Family
** 1 unknown, 1 possible knotweed, 1 possible grass family.

APPENDIX VI: 9Cc45 - SHOVEL TEST DATA

STP	Northing	Easting	Depth	Munsell	Chert Deb	Qtz Deb	Tot Deb	Lith Tools	Sherds	Tot Artifacts
1	500	501	18	7.5 YR 3/4	1	1	2	0	0	2
2	490	501	22	7.5 YR 3/4	2	2	4	0	1	5
3	480	501	18	10 YR 3/4	0	1	1	0	0	1
4	470	501	27	10 YR 3/4	0	2	2	0	5	7
5	460	501	10	10 YR 3/4	2	0	2	0	2	4
6	450	501	10	10 YR 3/4	1	0	1	0	0	1
7	510	501	23	10 YR 3/4	0	1	1	0	0	1
8	520	501	33	7.5 YR 3/4	2	1	3	0	10	13
9	530	501	8	10 YR 3/4	1	0	1	0	4	5
10	540	499	23	7.5 YR 3/4	1	0	1	0	8	9
11	550	501	22	10YR 3/3	5	0	5	0	2	7
12	560	501	27	7.5 YR 3/2	2	0	2	0	9	11
13	570	501	24	10 YR 3/2	0	0	0	0	0	0
14	580	501	41	10 YR 3/3	0	0	0	0	0	0
15	499	510	46	10 YR 3/4	6	2	8	0	10	18
16	499	520	21	10 YR 2/2	0	0	0	0	4	4
17	499	530	30	10 YR 2/2	3	2	5	0	6	11
18	501	540	24	10 YR 3/2	4	0	4	0	2	6
19	499	550	24	10 YR 2/2	1	0	1	0	1	2
20	499	560	17	10 YR 3/3	2	1	3	0	1	4
21	499	570	10	10 YR 3/3	1	0	1	0	1	2
22	499	490	19	7.5 YR 3/4	1	1	2	0	2	4
23	499	480	12	10 YR 3/4	2	0	2	0	2	4
24	499	470	10	10 YR 3/4	0	0	0	0	1	1
25	499	460	10	10 YR 3/4	0	2	2	0	0	2
26	499	450	2	10 YR 3/4	0	0	0	0	0	0
27	499	440	1	10 YR 3/4	0	1	1	0	0	1
28	499	430	18	10 YR 4/4	0	0	0	0	0	0
29	499	420	24	10 YR 4/4	0	0	0	0	0	0
30	499	410	8	2.5 YR 4/8	0	1	1	0	0	1
31	490	510	50	10 YR 3/4	6	4	10	0	14	24
32	489	520	26	10 YR 2/2	2	1	3	0	3	6
33	490	530	22	10 YR 2/2	1	0	1	0	3	4
34	489	540	30	10 YR 2/2	2	0	2	0	1	3
35	490	550	30	10 YR 2/2	2	2	4	0	3	7
36	490	560	26	10 YR 2/2	0	1	1	0	1	2
37	489	570	24	10 YR 2/2	3	1	4	0	1	5
38	480	510	45	10 YR 2/2	3	3	6	0	11	17
39	479	520	27	10 YR 2/2	1	0	1	0	1	2
40	480	530	15	10 YR 2/2	0	0	0	1	0	1
41	479	540	20	10 YR 2/2	3	1	4	0	6	10
42	480	550	20	10 YR 2/2	2	1	3	0	0	3
43	479	560	20	10 YR 2/2	1	0	1	0	1	2
44	479	570	19	10 YR 2/2	0	0	0	0	2	2
45	470	510	30	10 YR 3/3	1	0	1	0	7	8
46	469	520	18	10 YR 3/2	1	1	2	0	2	4
47	470	530	55	10 YR 3/6	0	0	0	0	6	6
48	469	540	24	10 YR 3/3	0	2	2	0	2	4
49	470	550	23	10 YR 2/2	1	2	3	0	5	8
50	471	560	23	10 YR 3/2	1	1	2	0	2	4
51	469	570	18	10 YR 5/2	1	3	4	0	1	5
52	460	510	17	10 YR 2/2	0	0	0	0	1	1
53	459	520	20	10 YR 2/2	1	0	1	0	0	1
54	460	530	29	10 YR 3/2	0	0	0	0	0	0

STP	Northing	Easting	Depth	Munsell	Chert Deb	Qtz Deb	Tot Deb	Lith Tools	Sherds	Tot Artifacts
55	459	540	22	10 YR 2/2	0	1	1	0	3	4
56	460	550	40	10 YR 2/2	2	3	5	0	15	20
57	460	560	18	10 YR 2/2	1	1	2	0	1	3
58	459	570	22	10 YR 4/2	1	1	2	0	0	2
59	450	510	14	10 YR 4/4	0	0	0	1	1	2
60	449	520	10	10 YR 4/2	0	0	0	0	4	4
61	450	530	27	10 YR 3/2	2	0	2	0	2	4
62	449	540	28	10 YR 3/2	9	1	10	0	2	12
63	450	550	26	10 YR 3/2	8	6	14	0	2	16
64	450	560	20	10 YR 4/4	0	0	0	0	2	2
65	451	570	13	10 YR 4/4	0	0	0	0	2	2
66	439	540	20	10 YR 4/4	2	1	3	0	0	3
67	440	550	20	10 YR 4/4	0	0	0	0	5	5
68	440	560	15	10 YR 5/4	0	1	1	0	0	1
69	439	570	16	10 YR 5/4	2	5	7	0	0	7
70	490	490	16	7.5 YR 3/4	1	0	1	0	0	1
71	489	480	15	10 YR 4/3	2	0	2	0	0	2
72	490	470	11	10 YR 4/6	1	0	1	0	0	1
73	489	460	1	2.5 YR 4/6	0	1	1	0	0	1
74	490	450	1	2.5 YR 4/6	0	2	2	0	0	2
75	489	440	15	10 YR 4/4	0	0	0	0	0	0
76	490	430	9	7.5 YR 4/6	0	0	0	0	1	1
77	489	420	21	10 YR 4/4	0	0	0	0	0	0
78	480	490	17	10 YR 4/4	0	2	2	0	2	4
79	479	480	10	7.5 YR 4/4	1	1	2	0	0	2
80	480	470	1	2.5 YR 3/6	0	1	1	0	0	1
81	479	460	1	2.5 YR 3/6	0	0	0	0	0	0
82	480	450	1	2.5 YR 3/6	0	0	0	0	0	0
83	479	440	1	2.5 YR 3/6	0	1	1	0	0	1
84	470	490	40	10 YR 3/4	0	1	1	0	9	10
85	469	480	7	10 YR 4/6	0	2	2	0	0	2
86	470	470	1	2.5 YR 3/6	0	0	0	0	0	0
87	469	460	1	2.5 YR 3/4	0	0	0	1	0	1
88	470	450	1	2.5 YR 3/6	0	0	0	0	0	0
89	469	440	1	2.5 YR 3/6	0	0	0	0	0	0
90	460	490	15	10 YR 4/4	4	2	6	0	4	10
91	459	480	13	10 YR 4/6	1	1	2	0	0	2
92	460	470	8	5 YR 3/4	0	0	0	0	0	0
93	459	460	1	2.5 YR 3/4	0	0	0	0	0	0
94	510	490	18	5 YR 3/4	0	1	1	0	0	1
95	509	480	19	5 YR 3/4	1	0	1	0	0	1
96	510	470	12	10 YR 4/4	0	0	0	0	2	2
97	509	460	9	5 YR 4/6	0	0	0	0	0	0
98	510	450	8	2.5 YR 4/6	0	1	1	0	0	1
99	509	440	1	2.5 YR 3/6	0	0	0	0	0	0
100	510	430	14	10 YR 4/6	0	1	1	0	0	1
101	509	420	18	10 YR 4/3	0	0	0	0	0	0
102	520	490	33	10 YR 3/4	1	4	5	0	7	12
103	519	480	24	7.5 YR 3/4	1	0	1	0	2	3
104	520	470	32	10 YR 4/6	0	1	1	0	4	5
105	519	460	26	7.5 YR 4/4	0	1	1	0	3	4
106	520	450	10	10 YR 4/4	0	0	0	0	1	1
107	519	420	10	10 YR 4/4	0	0	0	0	0	0
108	530	470	7	10 YR 3/4	4	0	4	0	0	4

STP	Northing	Easting	Depth	Munsell	Chert Deb	Qtz Deb	Tot Deb	Lith Tools	Sherds	Tot Artifacts
109	529	480	9	10 YR 4/4	0	0	0	1	2	3
110	530	490	5	5 YR 3/4	0	1	1	0	2	3
111	529	460	18	10 YR 3/4	3	0	3	0	1	4
112	539	460	10	5 YR 3/2	0	0	0	0	1	1
113	540	470	1	5 YR 4/6	0	0	0	0	0	0
114	541	480	7	10 YR 4/4	1	0	1	0	0	1
115	540	490	10	10 YR 2/2	3	0	3	0	2	5
116	549	460	20	10 YR 2/2	1	0	1	0	2	3
117	550	470	9	10 YR 4/6	0	0	0	0	2	2
118	549	480	11	10 YR 3/4	4	0	4	0	3	7
119	550	490	27	5 YR 3/2	1	0	1	0	8	9
120	559	480	26	10 YR 4/4	2	0	2	0	0	2
121	569	480	20	10 YR 3/4	0	1	1	0	3	4
122	510	510	42	7.5 YR 3/4	3	2	5	2	25	32
123	509	520	32	10 YR 3/4	3	2	5	0	22	27
124	510	530	33	10 YR 2/2	8	2	10	0	24	34
125	511	540	36	10 YR 2/2	5	1	6	0	41	47
126	510	550	18	7.5 YR 2/2	2	1	3	0	7	10
127	509	560	12	10 YR 3/6	0	3	3	0	1	4
128	520	510	22	5YR 3/3	1	0	1	0	4	5
129	519	520	24	10 YR 4/3	5	0	5	0	9	14
130	520	530	28	5 YR 3/2	2	1	3	0	7	10
131	519	540	25	10 YR 2/2	5	4	9	0	17	26
132	520	550	27	5 YR 3/3	6	2	8	0	20	28
133	519	560	15	10 YR 4/4	2	0	2	0	3	5
134	520	570	12	10 YR 4/4	4	0	4	1	0	5
135	519	580	10	5 YR 3/3	3	2	5	0	0	5
136	530	510	27	5 YR 3/3	3	2	5	0	15	20
137	529	520	26	10 YR 3/6	8	2	10	0	13	23
138	530	530	30	5 YR 3/2	8	2	10	0	15	25
139	529	540	23	10 YR 3/4	5	1	6	0	5	11
140	530	550	22	5 YR 3/3	2	0	2	0	8	10
141	529	560	18	10 YR 3/6	1	2	3	0	8	11
142	530	570	24	10 YR 3/4	2	0	2	0	8	10
143	529	580	16	10 YR 3/4	0	0	0	0	1	1
144	540	510	14	10 YR 4/4	3	1	4	0	4	8
145	539	520	28	10 YR 2/2	1	0	1	0	7	8
146	540	530	29	7.5 YR 3/3	2	0	2	1	8	11
147	539	540	30	10 YR 3/4	4	0	4	0	6	10
148	540	550	18	10 YR 3/4	2	1	3	0	7	10
149	539	560	17	10 YR 3/4	1	3	4	0	5	9
150	540	570	21	10 YR 3/4	1	1	2	0	4	6
151	539	580	15	10 YR 3/4	0	2	2	0	2	4
152	540	590	20	10 YR 3/4	2	3	5	0	0	5
153	541	600	47	10 YR 3/4	2	0	2	0	0	2
154	550	510	18	10 YR 3/6	2	0	2	0	1	3
155	551	520	18	10 YR 3/6	3	0	3	0	2	5
156	550	530	21	7.5 YR 3/2	4	2	6	1	8	15
157	549	540	21	10 YR 3/4	2	0	2	0	7	9
158	550	550	28	7.5 YR 3/2	6	4	10	0	1	11
159	549	560	20	10 YR 3/4	4	0	4	0	0	4
160	550	570	25	7.5 YR 3/2	8	4	12	0	6	18
161	549	580	22	7.5 YR 3/2	1	1	2	0	2	4
162	550	590	30	7.5 YR 3/2	0	2	2	0	5	7

STP	Northing	Easting	Depth	Munsell	Chert Deb	Qtz Deb	Tot Deb	Lith Tools	Sherds	Tot Artifacts
163	549	600	31	7.5 YR 3/2	2	1	3	0	4	7
164	550	610	13	10 YR 5/4	1	2	3	0	0	3
165	559	520	22	7.5 YR 3/2	3	1	4	0	4	8
166	560	530	30	7.5 YR 3/2	5	0	5	0	8	13
167	559	540	19	10 YR 3/4	6	0	6	0	8	14
168	560	550	30	7.5 YR 3/2	10	1	11	1	9	21
169	559	560	28	7.5 YR 3/2	7	0	7	0	5	12
170	559	570	28	7.5 YR 3/2	7	3	10	0	4	14
171	559	580	31	7.5 YR 3/2	99	32	132	8	5	145
172	559	590	10	10 YR 4/4	0	0	0	0	0	0
173	559	600	17	10 YR 4/4	0	0	0	0	1	1
174	559	610	30	10 YR 5/4	0	0	0	0	2	2
175	559	620	35	10 YR 5/4	4	0	4	0	0	4
176	569	520	17	7.5 YR 3/2	0	0	0	0	3	3
177	570	530	40	10 YR 3/4	8	3	11	1	24	36
178	570	570	27	5 YR 4/3	1	0	1	0	1	2
179	569	580	14	5 YR 4/3	0	1	1	0	0	1
180	570	590	18	10 YR 4/4	0	1	1	0	0	1
181	569	600	30	10 YR 4/4	2	2	4	0	0	4
182	570	610	11	10 YR 4/4	0	0	0	0	0	0
183	570	619	15	10 YR 4/4	0	0	0	0	1	1
184	579	580	25	10 YR 3/4	0	0	0	0	0	0
185	580	590	30	10 YR 4/4	0	0	0	0	0	0
186	579	600	18	10 YR 4/4	2	0	2	0	0	2
187	580	610	10	10 YR 4/4	0	0	0	0	0	0
	Totals				411	186	598	19	651	1268

APPENDIX VII: 9Co45 - DEBITAGE DATA

Excavation Unit	Level	Lithic Material	P	S	I	T	UF	SH	Totals
EU 1	1	Chert		2	3	29	4	5	43
		Quartz	1	3	15	12	4	14	49
		Quartz Crystal						2	2
		Subtotal	1	5	18	41	8	21	94
	2	Chert	2	2	8	60		1	73
		Quartz			25	31		11	67
		Quartz Crystal				1			1
		Subtotal	2	2	33	92	0	12	141
	3	Chert	1	3	1	14		1	20
		Quartz			4	33		2	39
		Quartz Crystal						1	1
		Subtotal	1	3	5	47	0	4	60
	Gr. Totals								
		Chert	3	7	12	103	4	7	136
		Quartz	1	3	44	76	4	27	155
		Quartz Crystal	0	0	0	1	0	3	4
		Totals	4	10	56	180	8	37	295
EU 2	1	Chert		3	7	66	3	9	88
		Quartz			22	42	6	6	76
		Quartz Crystal				1			1
		Chlorite Schist				1			1
		Subtotal	0	3	29	110	9	15	166
	2	Chert		5	20	77	4	15	121
		Quartz	2	1	17	15	3	10	48
		Subtotal	2	6	37	92	7	25	169
	3	Chert		7	11	68	9	19	114
		Quartz			16	10	7	13	46
		Quartz Crystal						1	1
		Subtotal	0	7	27	78	16	33	161
	4	Chert						2	2
		Quartz						1	1
		Subtotal	0	0	0	0	0	3	3
	5	Chert		6		15		1	22
		Quartz				10			10
		Subtotal	0	6	0	25	0	1	32

Excavation Unit	Level	Lithic Material	P	S	I	T	UF	SH	Totals
EU 2	Gr. Totals								
		Chert	0	21	38	226	16	46	347
		Quartz	2	1	55	77	16	30	181
		Quartz Crystal	0	0	0	1	0	1	2
		Chlorite Schist	0	0	0	1	0	0	1
		Totals	2	22	93	305	32	77	531
EU 3	1	Chert	13	9	4	127		3	156
		Quartz			10	32		4	46
		Quartz Crystal				3			3
		Subtotal	13	9	14	162	0	7	205
	2	Chert	2	3	12	101	16	5	139
		Quartz			12	14	5	5	36
		Subtotal	2	3	24	115	21	10	175
	3	Chert	4	5	3	21		1	34
		Quartz				3		5	8
		Quartz Crystal				1			1
		Subtotal	4	5	3	25	0	6	43
	Gr. Totals								
		Chert	19	17	19	249	16	9	329
		Quartz	0	0	22	49	5	14	90
		Quartz Crystal	0	0	0	4	0	0	4
		Totals	19	17	41	302	21	23	423
EU 4	1	Chert	2	7	6	59	2	1	77
		Quartz			3	8	1		12
		Subtotal	2	7	9	67	3	1	89
	2	Chert	1	3	8	127	28	8	175
		Quartz			4	7			11
		Quartz Crystal			1	1	1	1	4
		Subtotal	1	3	13	135	29	9	190
	3	Chert		2	3	37	12	2	56
		Quartz			1	6	1		8
		Quartz Crystal					1		1
		Subtotal	0	2	4	43	14	2	65

Excavation Unit	Level	Lithic Material	P	S	I	T	UF	SH	Totals
	Gr. Totals								
		Chert	3	12	17	223	42	11	308
		Quartz	0	0	8	21	2	0	31
		Quartz Crystal	0	0	1	1	2	1	5
		Totals	3	12	26	245	46	12	344
Feature	Level	Lithic Material	P	S	I	T	UF	SH	Totals
1	1	Chert			4	28		5	37
		Quartz			16	12		1	29
	Gr. Total		0	0	20	40	0	6	66
2A	1	Chert			1				1
		Quartz			2				2
		Total	0	0	3	0	0	0	3
2B	1	Chert		1	4	5			10
		Quartz				2			2
		Total	0	1	4	7	0	0	12
2C	1	Chert		5	3	100		8	116
		Quartz				6			6
		Total	0	5	3	106	0	8	122
100	1	Chert		1		1			2
123	1	Chert				6		1	7
		Quartz				1			1
		Totals				7		1	8
Legend:	P=Primary Flake, S=Secondary Flake,								
	I=Interior Flake, T=Thinning Flake,								
	UF=Unidentifiable Flake, SH=Shatter								

APPENDIX VIII: 9Co45 - PROJECTILE POINT DATA

SITE	BAG	STP	EU	FEA	LEV	TYPE	MAT	COLOR	LENG	WID	THICK	SHO WID	BL LENG	D HAFT	P HAFT	B CON	CONDITION
9CO45	200		1		3	Benton Broad Stem	Gran Qtz				7.5			27.0	25.0		Blade Missing
9CO45	195		3		1	Bradley Spike	Chert	Dk Gray Transluscent	29.5	12.0	5.5	12.0	18.0	10.0	8.5		Whole
9CO45	201			1		Bradley Spike	Chert	Lt Gray		18.0	10.0	17.0		12.5	13.0		Upper Blade Missing
9CO45	188		2		1	Camp Creek	Chert	Dk Gray Chalcedony		18.0	5.5					1.0	Upper Blade Missing
9Co45	189		2		2	Camp Creek	Chert	Dk Gray Chalcedony		13.5	7.0					1.5	Upper Blade Missing
9Co45	191		2		4	Camp Creek	Chert	Lt Gray		19.0	9.0					0.5	Upper Blade, Basal Ear Missing
9Co45	196		3		2	Camp Creek	Basalt	Black	24.0	15.0	6.5						Basal Ear, Tip Missing, Stepped Base
9Co45	122	122				Camp Creek	Chert	Pink/White Mottled	30.0	14.5	6.5						Whole
9Co45	168	168				Coosa Notched	Chert	Lt Gray/Red Mottled			6.0			16.0	20.0		Blade and Shoulder Missing
9Co45	196		3		2	Unid. Pentagonal	Chert	Dk Gray			5.0						Lateral Section Missing
9Co45	250				0	Unid. Pentagonal	Vein Qtz		31.0	22.0	9.0	22.0	22.0				Tip Missing
9Co45	250				0	Unid. Pentagonal	Chert	Dk Gray Chalcedony		23.0	8.0	23.0	26.0				Base M issing
9Co45	250				0	Unid. Pentagonal	Chert	Dk Gray Transluscent		16.0	3.5	16.0	20.0				Base Missing
9Co45	146	146				Unid. Pentagonal	Vein Qtz			21.0	10.0	21.0					Tip Missing, Possible Preform
9Co45	87	87				Unid. Pentagonal	Vein Qtz		28.0	22.5	9.5	22.5	17.5				Stepped Base
9Co45	195		3		1	Ebenezer	Chert	Lt Gray/Dk Gray Band	29.5	15.5	6.0	15.5	21.0	9.5	6.5		Whole
9Co45	250				0	Gary	Gran Qtz		46.0	29.0	12.0	29.0	30.0	19.0	14.0		Whole
9Co45	15	15				Gary	Vein Qtz			32.0	10.5	32.0		18.5	11.5		Upper Blade Missing
9Co45	201			1		Gary	Vein Qtz		41.5	29.0	10.5	29.0	27.0	18.0	14.0		Whole
9Co45	200		1		3	Madison	Chert	Dk Gray Transluscent		18.0	3.5					0.5	Upper Blade Missing
9Co45	189		2		2	Madison	Chert	Lt Gray	15.0	17.0	4.0					1.0	Whole
9Co45	189		2		2	Madison	Chert	Dk Gray Transluscent		13.0	3.0						Upper Blade Missing, Serrated
9Co45	189		2		2	Madison	Chert	Dk G-.y Transluscent			3.0					2.0	Upper Blade Missing
9Co45	190		2		3	Madison	Chert	Dk Gray Chalcedony			4.0					1.0	Basal Ears, Tip Missing
9Co45	190		2		3	Madison	Chert	Black	20.0	10.5	3.0					1.5	Whole
9Co45	190		2		3	Madison	Chert	Lt Gray			2.5					1.0	Basal Ear, Tip Missing
9Co45	190		2		3	Madison	Chert	Lt Gray			2.0					0.5	Basal Ears, Tip Missing
9Co45	196		3		2	Madison	Chert	Dk Gray Transluscent		17.0	3.0					1.5	Upper Blade Missing
9Co45	196		3		2	Madison	Chert	Dk Gray Transluscent		15.0	3.0						Upper Blade Missing
9Co45	197		4		1	Madison	Chert	Lt Gray		16.5	2.5					2.0	Upper Blade Missing
9Co45	197		4		1	Madison	Chert	Lt Gray		13.0	3.0					0.5	Basal Ears, Tip Missing
9Co45	198		4		2	Madison	Chert	Dk Gray Transluscent	14.0	10.5	2.5						Whole
9Co45	198		4		2	Madison	Chert	Dk Gray Transluscent		15.0	2.0					1.5	Tip Missing
9Co45	198		4		2	Madison	Chert	Dk Gray Chalcedony		18.5	3.0					2.0	Blade Missing
9Co45	250				0	Madison	Chert	Dk Gray Transluscent	13.0	13.0	3.0						Whole
9Co45	250				0	Madison	Chert	Dk Gray Transluscent			5.0					3.0	Upper Blade, Basal Ear Missing, Serrat
9Co45	109	109				Madison	Chert	Lt Gray		14.0	2.0					1.0	Upper Blade Missing
9Co45	198		4		2	Nodena	Chert?	Black, Vessicular	33.5	17.0	7.5						Whole
9Co45	197		4		1	Nolichucky	Vein Qtz		20.0	16.5	6.0	16.5	11.0	15.5	16.5		Whole
9Co45	196		3		2	Pickwick	Chert	Yellow/White Mottled			8.0		32.0				Base and Shoulders Missing
9Co45																	
9Co45	197		4		1	Drill	Chert	Lt Gray	35.0	11.5	6.0						Whole