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FINAL REPORT

A CULTURAL RESOURCES SURVEY OF THE RIVER TRACE PERMIT AREA, MARION, CRITTENDEN COUNTY, ARKANSAS

A NEGATIVE FINDING REPORT

GARROW & ASSOCIATES, INC.
SEPTEMBER, 1990

93-10873

Final Report

A CULTURAL RESOURCES SURVEY OF THE RIVER TRACE PERMIT AREA, MARION, CRITTENDEN COUNTY ARKANSAS

A NEGATIVE FINDING REPORT

Prepared for:

Department of the Army
Memphis District, Corps of Engineers
B-202 Clifford Davis Federal Building
Memphis, Tennessee 38103-1894

Prepared by:

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Authors

September, 1990

ABSTRACT

This report documents a cultural resources intensive survey of an approximately 13+ acre tract of land located near the City of Marion, Crittenden County, Arkansas. The tract is within the direct impact area of a proposed lake that will be part of the River Trace, Inc. housing development. At the request of the U.S. Army Corps of Engineers, Memphis District, investigations within the permit area included a cultural resources background and literature search and archaeological intensive survey and artifact analysis, which was conducted by Garrow & Associates, Inc. under Purchase Order No. DACW6690M1111.

The study area consists of an irregular parcel of land located in a relict Mississippi River channel. The area is presently situated in a swale between low ridges, and was part of Marion Lake until the early twentieth century. Properties immediately surrounding the project area are currently being developed as part of the proposed River Trace, Inc. development.

A review of the Arkansas Archeological Survey state site files, Crittenden County Library, and Crittenden County Courthouse Tax Assessment Records shows that no previously recorded cultural resources were located on or immediately adjacent to the study area. Systematic surface survey and subsurface testing recovered a total of five artifacts scattered across the entire 13 plus acreage, representing recent disposal and slope wash. The survey did not record any archaeological sites or other significant cultural resources. No further work is recommended.

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I. INTRODUCTION

PURPOSE OF THE STUDY

This report documents a cultural resources intensive survey of the River Trace, Inc. permit area, located in the City of Marion, Crittenden County, Arkansas. At the request of the U.S. Army Corps of Engineers, Memphis District, investigations at the site were conducted by Garrow & Associates, Inc. under Purchase Order DACW6690M1111.

The purpose of the study was to determine the presence of any cultural resources within the 13+ acres permit area which might be eligible for nomination to the National Register of Historic Places. The survey was conducted in partial fulfillment of obligations under the National Historic Preservation Act of 1966 (P.L. 89-665), as amended; the National Environmental Policy Act of 1969 (P.L. 91-190); Executive Order 11593, "Protection and Enhancement of the Cultural Environment"; the Archaeological Resources Protection Act of 1979 (P.L. 96-95); and the Advisory Council on Historic Preservation, "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800).

PROJECT LOCATION

The River Trace Inc. study area is located within Township 7 N, Range 8 E, Section 24, NE 1/4, NE 1/4 in east-central Crittenden County, Arkansas. It is irregular in shape, running northwest to southeast, and is situated to the east of the railroad tracks which service the City of Marion, and one and one-half miles east of Fifteenmile Bayou. The northern limit of the study area is the section line, while the western, eastern, and southern limits are defined by the borders of Blocks 1, 2, and 3, respectively, of the proposed River Trace subdivision. The latter were delimited in the field by the borders of milo, soybean, and wheat fields. The project area is located on the West Memphis Ark.-Tenn. 7.5 minute series USGS quadrangle map (Figure 1).

OUTLINE OF THE REPORT

Background information on the site was gathered from the Arkansas Archeological

Survey state site files, the Crittenden County Public Library, and from the Crittenden County Courthouse tax assessment records. Information was also gathered from reports of previous archaeological investigations in the area. No previously recorded sites were located within the area of the proposed housing development.

Archaeological field investigations were conducted on July 10 and 11, 1990. The investigations entailed a complete surface inspection of the unvegetated parts of the study area and subsurface inspection with screened shovel tests of those parts where visibility was impeded by dense vegetation. No significant cultural resources were recorded on or below the surface of the study area. Based on this negative finding, no further archaeological work is recommended.

The following report describes the prehistoric and historic background of the region in which the study area is located, and documents the procedures and results of this study. Chapter II is a brief overview of the physical environment of the region. Chapter III is a synopsis of the cultural sequence of the region and historic factors affecting the condition of the present archaeological record. Also included in Chapter III is a review of previous archaeological investigations in Crittenden County. Chapter IV discusses the research design of the study, as well as the methods used during the literature and records search and the field investigations. Chapter V presents the results of the study. Chapter VI summarizes the findings of this project and delineates the project recommendations. The sources cited in the report are listed in the References Cited section. Appendix 1 contains a copy of the Scope of Work for the project, while Appendix 2 contains the resumes of key project personnel.

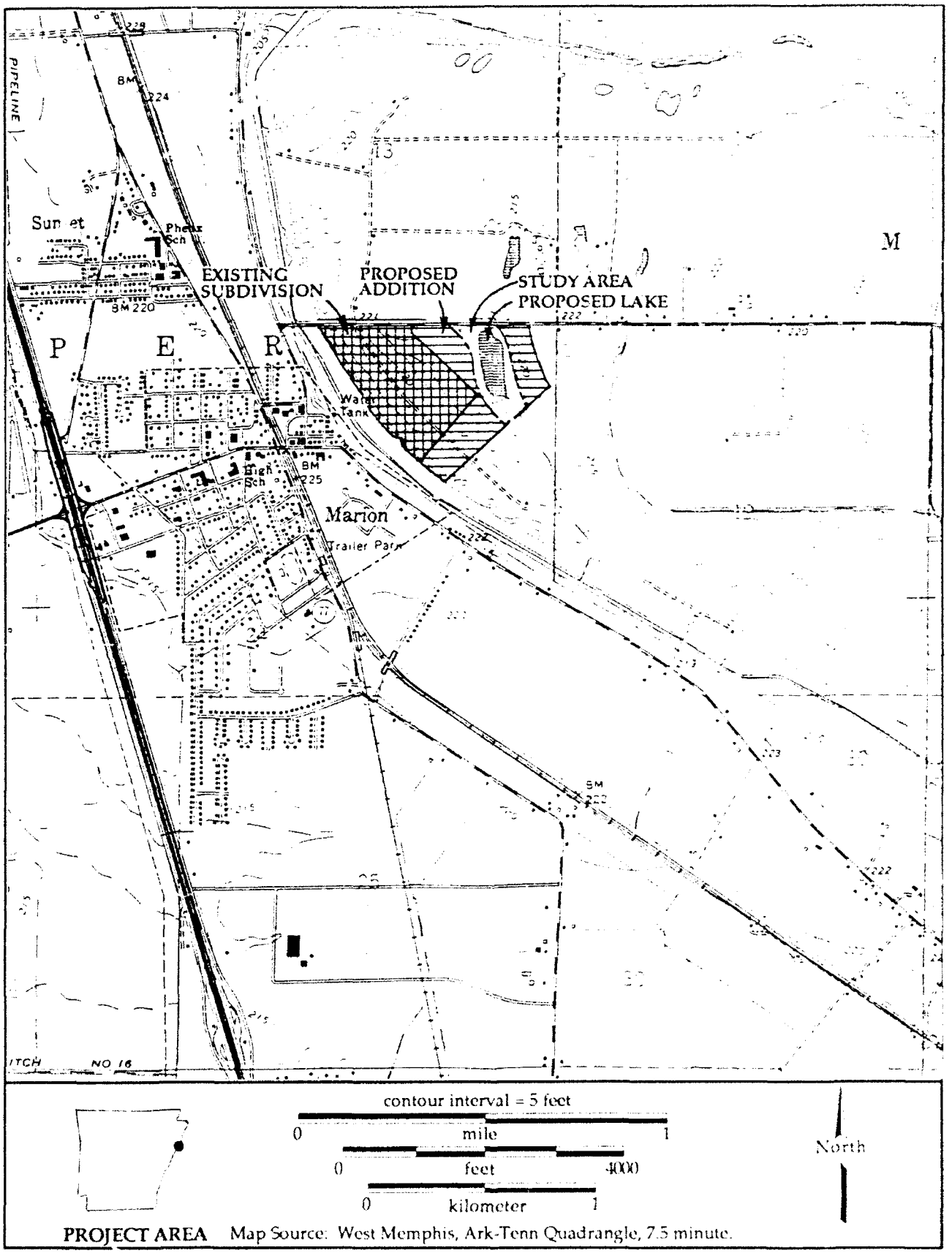

Figure 1. Project Location Map.

II. ENVIRONMENTAL SETTING

CLIMATE

The climate of Crittenden County is warm and moist, with relatively mild winters. The hottest month is July, with an average high temperature of 91.1° F and average low of 71.5° F. The coolest months are December and January, with average high temperatures of about 50° F and average lows of 32.4° F. Temperature extremes range from over 100° in the summer, to the teens in the winter. The growing season lasts approximately 230 days (Gray and Ferguson 1974:3).

Relative humidity averages about 70 percent throughout the year. Rainfall averages 49.7 inches per annum, and comes mainly in the fall. Winter is the driest time of year (Gray and Ferguson 1974:3-4). Thunderstorms are common in the summer. Before the construction of a permanent levee system in 1918, floods that covered the City of Marion with up to five feet of water were common (Woolfolk 1982).

PHYSIOGRAPHY AND SOILS

Crittenden County is within the Eastern Lowlands subdivision of the Central Mississippi Valley (Morse and Morse 1983:2). The sediments are alluvium and terrace deposits of the Mississippi River bottomlands (Foti n.d.). Until ditch and levee construction was begun in the late nineteenth century, the entire county was subject to frequent flooding by the Mississippi River and its local tributaries. The surface alluvium exceeds 100 feet in depth and is derived from soil, rock, and sediment from throughout the upper Mississippi River Basin (Gray and Ferguson 1974:2). The topography of the county ranges from broad flats to areas of alternating ridges and swales.

Drainage in the county is generally southward through a system of artificial channels and natural drainways which empty into the Mississippi River (Gray and Ferguson 1974:2). The county has many streams, bayous, and lakes. Major drainages in Crittenden County include the Tyronza River, Fifteenmile Bayou, Tenmile Bayou, and Big Creek.

The River Trace, Inc. project location is in an area called Middle Lake, Marion Lake, or Lake Grandee (Woolfolk 1982) that was continually submerged until the construction of the levee northeast of Marion. It is now a swale approximately 120 meters wide at the northern end and 30 meters wide at the southern end. While the

average elevation of the swale is approximately 210 feet above mean sea level (AMSL), the land rises to 214 feet AMSL approximately forty meters to the west of the site's western border, and to 220 feet AMSL fifty meters to the east of the eastern border.

These differences in elevation are marked by distinctive sediment types. The U.S. Soil Conservation Service has mapped the natural sediments in the study area as Sharkey silty clay, 0-1% slopes (Gray and Ferguson 1974: Sheet 41). It is characterized as:

> ...poorly drained, level to gently undulating soils in slack water areas. These soils formed in thick beds of clayey sediments. The content of organic matter is moderate to high. These soils shrink and crack when dry, and expand when wet. A representative profile of Sharkey silty clay shows an Ap layer from 0-5 inches composed of 10 YR 3/2 silty clay; an A12 layer from 5-8 inches composed of 10 YR 3/1 blocky silty clay; underlain by a B21 layer from 8-17 inches composed of 10 YR 4/1 clay with 10 YR 5/6 mottles (Gray and Ferguson 1974:20).

Sharkey silty clay 0-1% slopes is generally found on broad flats. Proportionally, this soil type is found over 31.6% of Crittenden County, making it the most frequent soil type represented in the county (Gray and Ferguson 1974:8).

At the approximate eastern and western boundaries of the study area, where the land begins to rise, this silty clay is replaced by Dubbs silt loam, gently undulating. The Dubbs Series is described as :

> well-drained, level and gently undulating soils on older natural levees along bayous and abandoned river channels. These soils formed in stratified beds of loamy sediments. In a representative profile, the surface layer is dark grayish-brown silt loam about 4 inches thick. The upper 14 inches of the subsoil is yellowish-brown silty clay loam. The lower part, which extends to a depth of about 30 inches, is yellowish-brown silt loam mottled with pale brown....Dubbs silt loam, gently undulating...is generally on the tops and sides of natural levees, in areas of alternating long, narrow swales and low ridges that rise 2 to 5 feet above the swales (Gray and Ferguson 1975:13-14).

Field observations showed that in the areas bordering the project area, the ground surface was very sandy. This fine white sand appeared in alluvial fans from the

bordering ridges. This is in accord with historical records indicating that the study area was continually submerged until 1918, when it was drained for farming.

FLORA AND FAUNA

When settlers first arrived in Crittenden County, the land was covered with dense hardwood forests. The rich alluvial soils supported some of the best hardwoods in the South. The principle species include sweetgum (*Liquidambar styraciflua*), cottonwood (*Populus deltoides*), hackberry (*Celtis occidentalis*), pecan (*Carya illinoensis*), baldcypress (*Taxodium distichum*), ash (*Fraxinus americana*), sycamore (*Platanus occidentalis*), oaks (*Quercus* spp.), and black willow (*Salix nigra*) (Morse and Morse 1983:14). In recent years, much of the acreage has been cleared for agriculture, and the original forest cover has been reduced to about 10% or less of the land area (Gray and Ferguson 1974:2).

The dense hardwood forest supported a wide variety of wildlife. Native mammals included bison (*Bison* spp.), white tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*) (rarely hunted prehistorically), wolf (*Canis* spp.), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), opposum (*Didelphis virginiana*), red fox (*Vulpes vulpes*), grey fox (*Urocyon cinereoargenteus*), beaver (*Castor canadensis*), and squirrels (*Sciurus* spp.). The area also supported a diverse number of reptiles and amphibians. Turkey (*Meleagris gallopavo*) were an important source of food for the early inhabitants of the area, as were migratory mallard ducks (*Anas platyrhynchos*) and canadian geese (*Branta canadensis*). Fish from the larger streams, oxbow lakes and beaver ponds, such as the flathead catfish, alligator gar, drum, buffalo, largemouth bass, walleye, channel catfish, bowfin, gar, suckers, and many smaller fish, were also an important food source for prehistoric and historic occupants (Morse and Morse 1983:15).

III. CULTURAL HISTORY

PREHISTORIC OVERVIEW

The prehistoric period in the southeastern United States is traditionally divided into four major periods: Paleoindian, Archaic, Woodland, and Mississippian. Each of these periods is defined by characteristic artifact assemblages and patterns of subsistence and settlement. Northeastern Arkansas has long been recognized as one of the richest archaeological areas in eastern North America in terms of the wealth and complexity of prehistoric settlement. The area has seen extensive investigation since the middle of the last century. More recently, a number of large scale survey and excavation projects have been conducted in northeastern Arkansas, as detailed later in this chapter. In the following sections, a brief description of the cultural history of Crittenden County is presented in a period by period format.

Paleoindian Period

The Paleoindian period (ca. 11,500-9800 B.P.) represents the earliest human occupation in the southeastern United States. The placement of these occupations in the terminal Pleistocene Periods indicates an adaptation to cooler climatic conditions and a different physiographic regime than found in the modern Holocene Period. Aboriginal groups of the period were likely small, mobile bands dependent upon a hunting and gathering economy. Although they may have hunted some of the megafauna that became extinct at the end of the Pleistocene, such as mastodon (*Mammut americanum*), bison (*Bison bison antiquus*), and ground sloth (*Megalonyx sp.*), it is likely that the subsistence base was varied and included a number of plant and animal foods. Most of the known finds in northeast Arkansas are from surface contexts and tend to occur along the major river systems. The major diagnostic artifacts of the Paleoindian period are lanceolate, fluted points.

The Dalton period is considered to be transitional between the Paleoindian and Archaic traditions. In terms of chronological placement, it is often considered either terminal Paleoindian or Early Archaic. Goodyear (1982) has argued that Dalton represents a distinct temporal interval between the two periods, occurring between 8500-7800 B.C. In terms of adaptation, however, Dalton appears to be very similar to Paleoindian. The key distinguishing feature of material culture is the Dalton point, which is lanceolate, but is not fluted.

Archaic Period

The Archaic period has been dated from about 7800-1000 B.C. in northeast Arkansas. It is traditionally divided into three shorter intervals: Early Archaic (ca. 7800-5000 B.C.), Middle Archaic (ca. 5000-3000 B.C.), and Late Archaic (ca. 3000-1000 B.C.). The transition to the Early Archaic is marked by the beginning of the Holocene period and the evolution of a new regime of flora and fauna. In contrast to Paleoindian adaptations, the Early Archaic appears to represent a shift to a more localized subsistence strategy based on seasonal harvest of plant and animal resources. Similar to earlier occupations, Early Archaic sites tend to be light scatters, reflecting a mobile lifestyle by small groups. Diagnostic projectile points for this period in northeast Arkansas include the San Patrice, St. Charles Notched, Hardin Barbed, and Rice Constricting Stemmed. Terminal Early Archaic bifurcated forms, common in other areas of the southeast, are absent (Chapman 1975:152; Morse and Morse 1983:104).

The Middle Archaic period is poorly represented in the lowlands of the northern Mississippi Alluvial Valley. The Middle Archaic (ca. 5000-3000 B.C.) represents a period of increasingly localized exploitation of the resource base, and expanded efficiency in the utilization of terrestrial and riverine resources. Morse (1983) has suggested the term "Hypsithermal Archaic" be used for this period in the Central Mississippi Valley, to denote depopulation of the lowlands in response to a warmer, dryer climatic era. In contrast to Morse, Chapman (1975) has argued that lowlands were occupied in the Middle Archaic, based on observations in Missouri. Population levels seem to have significantly increased, judging from the greater number of recorded sites. Large, intensely occupied sites appear for the first time in the archaeological record throughout the southeast. Smaller campsites are also commonly found. Some interregional exchange of "exotic" goods such as copper artifacts occurs during this period.

The Late Archaic period (ca. 3000-1000 B.C.) continued the development of more sophisticated adaptations to localized resource zones. The large number of sites documented for this period suggests that population levels continued to increase. Human habitation of the lowlands expanded and intensified during this period. The use of cultigens becomes widespread, with evidence for the use of native seed plants and tropical species (squash, gourd). Two temporal units, the Frierson and O'Bryan Ridge phases, have been tentatively identified in northeast Arkansas. Late Archaic sites are identified by a range of artifact types, including Gary, Big Creek and Table Rock Stemmed projectile points, chipped stone adzes and rarely, steatite vessels (Chapman 1975:217; Morse and Morse 1983). Toward the end of the Late Archaic period, clear relationships with the Poverty Point complex in the Lower Alluvial Valley are evident in the widespread occurrence of baked clay balls and lapidary items, such as carved and polished beads.

Woodland Period

The Woodland period in the southeast is also divided into three periods: Early Woodland (1000-500 B.C.), Middle Woodland (ca. 500 B.C.-A.D. 500), and Late Woodland (ca. A.D. 500-800). The Early Woodland period is traditionally marked by the introduction of pottery, the appearance of elaborate burial mound ceremonialism and the first evidence of intensive horticulture. Settlement systems were characterized by small dispersed villages located in the lowlands, with upland areas at best little more than seasonally occupied hinterlands (Morse and Morse 1983:143-144). The term Tchula has been used to refer to Early Woodland components in the northern portion of the Lower Mississippi Alluvial Valley (Phillips et al. 1951:431-436).

The Middle Woodland (ca. 500 B.C.-A.D. 500) period witnessed the emergence of widespread exchange networks throughout the Southeast and Midwest, involving a number of raw materials and finely crafted finished goods. In the Central and Lower Mississippi valley this period is referred to as the Marksville period (Helena phase). A number of large mound sites occur within the major drainages, many of them containing burials associated with a wealth of imported goods, including copper, mica, and shell artifacts. Generally, the nature of the Hopewell/Marksville influence in northeast Arkansas is not well understood. The archaeological record of the Middle Woodland consists mainly of ceramic assemblages, with little detailed information on the lifeways of the people. A pattern of dispersed autonomous villages and infrequent ceremonial centers is suggested (Morse and Morse 1983:162). The Helena Mounds, a major Marksville site at Helena Crossing, Arkansas, contained numerous burials and artifacts suggestive of both northern and southern spheres of influence (Ford 1963). Mound City, in Crittenden County, may also represent a major Marksville site with mounds.

The Late Woodland period (ca. A.D. 500-800) is poorly understood throughout the Southeast. The elaborate ceremonialism, trade networks, and earthworks associated with Middle Woodland times appears to have died out or become greatly attenuated. In northeast Arkansas, this period is divided geographically into two major study units -- Baytown (see Phillips 1970) in the southern portion of the region and along the eastern border, and Barnes (Dunkin phase), concentrated in the northern portion. In general, plain grog tempered pottery predominates, although cord marking is most typical of Baytown period sites, while sandy paste ceramics typify Barnes.

The Late Woodland developed into a Coles Creek period culture along and south of the Arkansas River, after about A.D. 700. The Toltec site near Little Rock was a major regional center during Coles Creek period (Rolingson 1982). During the Late Woodland, the foundations of the cultural adaptation known as the Mississippian developed in the central Mississippi Valley, and northeast Arkansas may be the area

where this development first emerged.

Mississippian Period

The Mississippian period (ca. A.D. 800-1540) witnessed the development of the most complex sociopolitical systems in the southeastern United States. The widespread construction of earthworks, rank-size settlement systems, and the reemergence of long-distance exchange systems attest to the development of hierarchical societies commonly considered to be chiefdoms (*sensu* Service 1962). Moreover, maize became the primary cultigen throughout much of the Southeast, providing a crop more susceptible to intensification than the native starchy and oily seeds that were favored during the Woodland period.

Mississippian sites are commonplace in this portion of Arkansas. The best documented initial Mississippian assemblage comes from the Zebree site in northeast Arkansas (Morse and Morse 1980), which is the type site for the Big Lake phase. In southern Crittenden County, Early and Middle Mississippian sites have been recorded, but more research is needed before local phases can be defined.

In the late Mississippian period populations began to nucleate along the Mississippi and St. Francis Rivers. Local ceramic variations lead initially to the identification of four distinct phases in the eastern lowlands; Kent, Parkin, Nodena, and Walls (Phillips 1970), which are often interpreted as competing chiefdoms. In southern Crittenden County, late Mississippian sites have been previously classified as Walls phase (Phillips 1970), and have been more recently included in the Kent phase (House 1982) or Horseshoe Lake phase (G. Smith 1990).

Protohistotric Period

Protohistoric occupations (ca. A.D. 1540-1673) in the northeast Arkansas area have been summarized by a number of authors (e.g., Phillips et al. 1951; Morse and Morse 1983). Initial European contact in the general project area occurred in June 1541, when the de Soto entrada crossed the Mississippi River, and encountered complex Mississippian polities in the Eastern Lowlands of northeastern Arkansas. Descriptions of existing cultures by the de Soto chroniclers are the only historic record of the late prehistoric Mississippian occupations in the region (Brain 1985). Horizon markers for the contact period include Chevron glass beads and Clarksdale bells.

HISTORIC OVERVIEW

Early Historic Period

Following the de Soto expedition there were no further written descriptions of northeastern Arkansas until 1673, when the Frenchmen Father Marquette and Louis Jolliet travelled down the Mississippi from Canada in canoes. During the 132 years between the de Soto expedition and this first recorded French expedition, the complex Mississippian chiefdoms with large populations disappeared. There is little doubt that disease epidemics introduced by contact with Old World viruses depopulated large areas of the interior southeast, including northeastern Arkansas (M. Smith 1987; Ramenofsky 1987). At the mouth of the Arkansas River, in 1673, the French encountered the Quapaw, who already possessed such European goods as beads, knives, and hoes. La Salle encountered the Quapaw nine years later, and Henri de Tonti established Arkansas Post in 1686.

After the initial European discovery, Arkansas alternately was claimed as a possession of Spain ("Florida") or France ("Louisiana"). Both used the native American groups as allies in their wars with the British. During this time, smallpox further reduced the native populations. Spain acquired Louisiana again in 1792. Disrupted native American groups such as the Delaware and Shawnee began moving west of the Mississippi. Cherokee began moving to the St. Francis drainage in 1795. Stringent religious and political requirements kept most American settlers from trying to move to Spanish territory until these strictures were eased at the end of the eighteenth century.

The earliest land records available for Crittenden County show 40 eighteenth century Spanish land grants (Goodspeed 1890:390). One of the earliest settlers was Benjamin Fooy, a native of Holland, who was sent by Don Manual Gayoso de Lemos, Spanish Governor of Louisiana, as a agent to the Chickasaw. In 1797 he moved from Ft. San Fernando de las Barrancas (present day Memphis) to a new fort on the west bank of the Mississippi, named "Camp de l'Esperanza" (Hale 1962). The spanish was translated to Camp Hope, and later the town became known as Hopefield. Hopefield was the second European settlement in Arkansas.

The first noted resident in the vicinity of Marion was Augustine Grande, or Grandee, a Spanish sargent who settled there after the Jefferson Purchase. He built a house on one of the ridges in the middle of Lake Grandee, named after him. William Russell, "the most active real estate speculator in Arkansas," acquired much of the land in Crittenden County in the first quarter of the nineteenth century (Woolfolk 1982).

The Jefferson Purchase of 1803 acquired Louisiana territory for the United States,

and the area was finally open for American settlement. Arkansas Post was taken over by government traders. Quapaw, Delaware, Chickasaw, and Osage all traded there. Arkansas Post became the capitol of Arkansas territory in 1819. It then had a population of about 60 families. Little Rock became the capitol in 1820.

Crittenden County was created by act of the Arkansas Territorial Legislature in 1825 (Goodspeed 1890:390). The original area of the county included present day Cross, Lee, and St. Francis Counties. In 1826, ferry service between Memphis and Hopefield was opened. Steamboats from the Mississippi often docked at Marion during times of high water (Woolfolk 1982). It was also during this period that the Military Road from Memphis to Little Rock was being surveyed. Completed in 1829, the construction of the Military Road greatly facilitated immigration to Arkansas (Chowning 1954:7). The government used this route to move Choctaw and Chickasaw Indians from Mississippi to Oklahoma in the 1830s, and it was dubbed by some the "trail of tears" (Woolfolk 1982). Cherokee who were already living in Arkansas also ceded their lands and moved to the Indian territory. The Quapaw had given up much of their territory as early as 1818, and ceded the final two million acres in 1824. The Native American population was essentially eliminated from Arkansas by 1840.

In 1836, the year Arkansas became a state, Marion was selected as the county seat of Crittenden County. Railroad surveys began in 1850-1851 (Woolfolk 1967). The railroads were important because the swamps of eastern Arkansas made the 133 miles from Hopefield to Little Rock almost intraversable. Early railroads were frequently washed out by floods, but in 1858 the line was completed from Hopefield to Little Rock. During the period from the 1840s up to the Civil War, Crittenden County enjoyed prosperity based on the plantation system. Cotton was the main cash crop.

The Civil War and Reconstruction: 1860-1900

Early in the war, on June 5, 1862, Federal Troops landed at Mound City, four miles east of Marion, and captured Hopefield (Hale 1962). During the Battle of Memphis the next day, two Confederate rams were sunk in the shoals of the Mississippi River out from Hopefield. On February 13, 1863, Hopefield was burned by Federal Troops in retaliation for a raid by Confederate guerillas in which a steamboat and seven barges of coal were sunk. The town never fully recovered.

Period documentation from the Reconstruction period suggests that the white inhabitants of Crittenden County harbored much resentment against negro office holders and "carpetbaggers". The late nineteenth century was a period of violent racial strife in Marion, and at times the state militia was called in (Woolfolk 1982). The reconstruction period ended in 1874 with the adoption of new State

constitution (Goodspeed 1890:392).

Crittenden County witnessed devastating damage in the major floods of 1882, 1883, 1897, and 1912. Little was done to improve the railroads until 1868. Prosperity was enhanced, however, when in May, 1892, the Frisco Railroad bridge over the Mississippi River was opened. It was the first bridge over the Mississippi at Memphis and, at the time, the third largest bridge in the world (Woolfolk 1967).

Modern Era: 1900-1990

The 1980 census listed the population of Marion at 2,996 (Woolfolk 1982). It was a primarily rural area that experienced little growth until the late 1970s. The majority of land annexations in Crittenden County since the early 1900s have occurred in the last thirty years as a result of subdivision developments (Woolfolk 1982).

Since 1933, when the first allotment was placed on cotton, the importance of that crop has declined (Grey and Ferguson 1974:2). Today, a more diversified cropping system that includes soybeans, milo, wheat, rice, alfalfa, sorghum, and pasture characterizes most farms in the county. Machinery began to replace livestock as the major source of farm power, and the acreage of corn needed to feed livestock in the county decreased. Farms in Crittenden County have been decreasing in number and increasing in size since 1959.

In the modern era, West Memphis has become the largest city in the county and 77 percent of the county's population now resides in urban areas (Crittenden County Historical Society n.d.). Service industries have replaced farming in number of people employed.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

The area in and around Crittenden County, Arkansas has been the subject of numerous archaeological investigations, beginning in the late nineteenth century with C.B. Moore (1911) and Edward Palmer (1917). Standard references in northeast Arkansas include the report of archaeological investigations on the Cache River (Schiffer and House 1975), the Zebree archaeological project (Morse and Morse 1980), the Village Creek archaeological project (Klinger 1986) and the St. Francis Basin comprehensive overview program (Dekin et al. 1978). Morse and Morse (1983), Klinger et al. (1983), and Lafferty and Watkins (1987) have prepared excellent synthesis and listings of archaeological work in northeast Arkansas by both vocational and professionals archaeologists. The Arkansas Archeological Survey

also maintains a comprehensive list of publications and manuscripts available on a county by county basis.

A number of large scale cultural resources surveys have been initiated in recent years. A survey of 90 miles of the L'Anguille River Basin in Lee, St. Francis, Cross, and Poinsett Counties, in which 222 sites were documented, was conducted by Garrow & Associates for the Memphis District Corps of Engineers (Anderson et al. 1989). This survey documents the nature of human occupation in the L'Anguille basin for the past 11,000 years. Important environmental information was also derived from a pollen sequence obtained from Hood Lake.

Other cultural resource management studies conducted in Crittenden County include work on Big Creek (Dwyer 1978; LeeDecker 1979a; Klinger 1981, 1982, 1983, 1985; McNeil 1984), Blackfish Bayou (LeeDecker 1979b), Little Cypress Bayou (Thomas 1986), Ten Mile Bayou and Fifteen Mile Bayou (Smith 1975), the Wapanocca National Wildlife Refuge (Jackson 1978), and in the West Memphis-Memphis Metropolitan area (Kern 1979). In addition, various surveys by the Corps of Engineers are reported by McNeil (1981, 1985a, 1985b). Investigations in Crittenden County conducted by the Arkansas Archeological Survey are reported by McCurkan (1976), Williams (1988), Martin (1978), Dan Morse (1967) and Phyllis Morse (1977), Cande (1980), and Waddell (1981).

Mississippian period sites associated with mound complexes have been the subject of much archaeological interest over the years (see Palmer, 1917; Dellinger and Dickinson 1940; Perino 1966, 1967). Building on previous work by Phillips, Ford and Griffin (1951) and Phillips (1970), recent research on the Walls phase are reported by G. Smith (1990) and McNutt and Lumb (1989). The Parkin phase was the subject of a site cachement analysis by Phyllis Morse (1981). The Parkin phase may be associated of the province of Casqui, documented by the de Soto chroniclers (Morse and Morse 1983:292). East-central Arkansas and the Kent phase in particular, has been intensively studied by John House for a number of years (1982).

The Belle Meade and Beck sites, south of the project location, may represent the first towns of the Aquixo encountered by the de Soto entrada west of the Mississippi River (Morse and Morse 1983:296). Belle Meade has been excavated by Memphis State University field schools in recent years. David Dye and Charles McNutt, Memphis State University, Department of Anthropology, utilized a ceramic collection excavated by an amateur archaeologist from the Belle Meade site in a paper utilizing mathematical clustering indices for whole vessel morphology (Dye and McNutt 1988). David Dye and Sheri Moore have also presented the results of excavations of a portion of a burned house floor from the Belle Meade site (Dye and Moore 1989).

Historic archaeology in Arkansas has generally centered on the pre-twentieth

century periods. The site of Arkansas Post and the trading post of Caldron have been excavated (Stewart-Abernathy 1982:302). In June, 1988, a number of local and professional archaeologists attempted to conserve and excavate a group of sunken nineteenth century river boats, near Hopefield, exposed by record low Mississippi River levels (Stewart-Abernathy 1990).

IV. RESEARCH DESIGN AND METHODOLOGY

RESEARCH DESIGN

The Arkansas State Plan provides a statement of guidance for historical archaeology in Arkansas (Davis 1982). It includes a definition of historic archaeology and a discussion of a number of research problems and goals with which historical archaeologists should be concerned.

The analysis and background research portions for this project were conducted under a general research design that is in keeping with the goals of the Arkansas State Plan. This research design was developed by Garrow & Associates for the southeastern United States and Carribean Basin (Garrow & Associates, Inc. 1988:12-15). Four general research areas were delineated that could be applied to reconnaissance, survey, and data recovery level investigations. Those research domains applicable to the present project are discussed below.

Settlement Studies

The major use of reconnaissance and survey data is to determine the distribution of archaeological resources across the landscape. Such data can be utilized for a synchronic, spatial analysis to examine how groups of a single phase adapt to a range of natural settings. The results can also be used to address change in settlement to determine how cultures of a specific setting evolved in response to changes in the natural and cultural environment. The basic underlying premise of such research is that settlement location will be predicated by the pattern of natural resources, the organization of culture, and the subsistence focus. The distribution of smaller, non-village sites is poorly documented in the Mississippi River valley, and a significant portion of the settlement pattern is not well understood. Before archaeology can move toward explaining major cultural change (e.g. the development of hierarchical chiefdoms and concomitant ritual public works), it is necessary to document the full settlement sphere.

Various phenomena appear to affect or cause settlement change through time. These include the incipience of horticulture, the development of cultural complexity, the European intrusion (in terms both of European belligerence and the depopulating effect of newly introduced diseases), the rise of large plantations (which tends to cluster the population in rural centers), the rise in importance of family agricultural production, and industrialization. In addition, settlement

patterns probably were altered in response to extra-insular influences. Synchronic variation in settlement should be related to the environmental potential of various ecological zones, although the organization of the various indigenous and historic cultures would also have had an impact.

Settlement patterning can also be understood at the site level, by examining the relations of individual structures and features to one another. Such analyses provide useful information for the interpretation of past cultural systems. The relation of refuse dumps to living areas; of ceremonial structures to residences; of elite occupations to the workers; and of technical to domestic spheres, all provide insights.

Stylistic/Ethnic Variation, Borders, and Mixing

The culture history of the Mississippi River valley has been interpreted as a mosaic of diverse cultural influences entering the area from different sources and with different results. As such, the prehistory and history of the area can provide an excellent context for the study of culture contacts and dynamics. While an elementary culture history has been generated which covers portions of the valley, it is important to fill in the gaps in the record and document the manifestations of the border areas. Ethnographers have recognized that the character of cultural mixing (as demonstrated in material culture and, therefore, the archaeological record) is dependent on a number of factors including social organization, subsistence base, and population size. Additionally, major factors involved in the European-Indian contact were weaponry, mobility, and resistance to non-native diseases.

The results from reconnaissances, surveys, and large scale excavations in different areas of the southeastern United States can provide pieces of the puzzle for recognizing cultural boundaries. Furthermore, if the analysis of materials is conducted with an emphasis on cultural markers (e.g. surface motifs and ceramic paste characteristics), surveys and reconnaissances can address culture contact in specific areas. Explicit awareness of this research avenue is necessary if these proposed projects are to fill their archaeological potential.

Vernacular Architecture and Disappearing Structures

A research sphere that is often downplayed in the preliminary stages of cultural resource management is the documentation of vernacular architecture. Cultural resources surveys and reconnaissances in the area have often ignored standing structures or ruins unless they are part of large, well-documented plantations. The possibility is strong that significant examples of isolated vernacular structures have

been sacrificed to development because they were not carefully documented by archaeologists. The surviving buildings represent functional adaptations to unique area needs, expressed in a mixed cultural/vernacular tradition. As with the documentation of artifact style distributions, the recording of the spatial and temporal variation in house types will allow for questions of cultural interaction to be addressed. Historic structures and their archaeological expressions are cultural resources and must be carefully documented.

Site Formation and Preservation Factors

Recently, post-depositional processes have become a major theoretical and methodological focus of archaeology (e.g. Binford , 1981; Schiffer 1972, 1976). Most archaeological investigation is done with much attention to the factors that have affected the character and condition of an archaeological deposit, in the hope of being able to make more meaningful inferences from the present archaeological record to past phenomena. This has led to more geologically-oriented investigation and to controlled studies of the ways in which particular kinds of material are affected by various conditions that may exist during the life of an archaeological deposit, in terms of both intra-site spatial relationships and the quality of preservation.

This focus on post-depositional and site-formational processes offers important contributions to culture resources surveys. In a study in which the goal is to determine if archaeological remains are present, knowledge of local geomorphology and sedimentary and erosional processes will help form expectations about the probabilities of locating such remains. This knowledge will also aid in understanding the results of such a study. One general kind of contribution that this focus on site formational and post-depositional processes has made is a renewed faith in the integrity of surface deposits.

ARCHIVAL AND FIELD METHODS

Background and Literature Search

A comprehensive examination of existing literature and records was conducted for the purpose of inferring the potential presence and character of cultural resources in the study area. The Arkansas Archeological Survey state site files provided information on previous archaeological investigations and site locations. Information was sought on any sites within 3 km of the project area, and on previous archaeological investigations conducted in Crittenden County. Additional documentary research included a review of Crittenden County history at the

Crittenden County Public Library and a review of the Crittenden County Courthouse Tax Assessment Records. A 7.5 minute series U.S.G.S. quadrangle map (1966) provided topographic information. The extensive libraries that Garrow and Associates maintains in Memphis and Atlanta were also consulted.

Field Methods

The primary goal of the field investigations was to locate and assess the significance of any archaeological artifacts and deposits located within the project area. The results were intended for use in determining potential for nomination to the National Register of Historic Places. Field techniques were designed to allow determination of the existence, nature and integrity of any intact surface or subsurface archaeological deposits that might be present, their horizontal extent, and chronological and functional information on such deposits.

The Field Director performed the intensive survey on July 10 and 11. Most of the site area had been plowed two weeks earlier, but about 75% of the surface was covered in vegetation that made ground visibility poor to nil. The field director therefore performed a surface survey of all of the areas where ground visibility was fair or better. A pin flag at the north-west corner of the site served as a 0 m South/0 m East coordinate for marking the area off into the transects which were paced and for mapping purposes. In the areas with good visibility, east-west oriented transects were paced at 20 m intervals. An exception to this was the pacing of the entire 10 meter-wide strip of sandy sediment that extended along the eastern border of the site area. When artifacts were found, they were marked with a pin flag and collected later.

Nine shovel tests were excavated in area where undergrowth was too dense for reliable visual inspection. The shovel tests, located at 30 m intervals, were excavated to a depth of 50 cm, and measured 30 to 50 cm wide. All sediments were screened through 0.25-inch hardware cloth, and the resulting profile was described by texture, structure and Munsell color codes.

Laboratory Analysis

All artifacts recovered from the survey were returned to the Garrow & Associates, Inc. branch office in Memphis, Tennessee, for washing and analysis. Historic artifacts were described by descriptive typological categories, discussed in detail below. Curation of the artifacts is presently being arranged with the Arkansas Archeological Survey.

V. RESULTS

RESULTS OF THE LITERATURE AND RECORDS SEARCH

Arkansas Archaeological Survey State Site Files

The Arkansas Archaeological Survey provided information on site locations within a 3 km radius of the project area. Only one site has been recorded within this 3 km zone. Site 3CT200 was surveyed in 1979 (Kern 1980). It is located in a wooded lot at the north-eastern corner of the City of Marion proper, about 1100 meters west of the River Trace, Inc., study area. 3CT200 consists chiefly of a historic occupation refuse associated with a dwelling dating between 1900-1960.

No previously recorded sites are located in, or immediately adjacent to, the present project area.

Crittenden County Tax Assessment Ledgers

The background and literature search included a review of Crittenden County Tax assessment ledgers from 1865 to present. Records prior to 1865 were not available for review. Ledgers prior to 1900 were in poor condition, and from 1865 to 1883 no ledgers could be located. The information gleaned from these records applies to the entire northern half of the section, an approximately 180-tract that has never been partitioned into smaller plots. The site area is located within this tract, but it and much of the rest of this tract was covered by Lake Marion until 1918. Tax records show private ownership, as well as steadily increasing land value for the half-section from the late nineteenth century to the present. Apparently, then, the land value prior to 1918 applied mainly to the dry part of the section, west of Military Road S (previously the limit of Marion development) (Figure 1).

The 1865 ledger has no listing for the NE 1/4 of Section 24, suggesting that the land was not in private ownership. The first available listing is in 1889, when J.F. Smith was assessed for $50 for the "N. Frl. 1/2" (193 acres). J. F. Smith is assessed every year for the same property until 1913 (although the acreage is listed as 190 after 1903). In 1918, Mrs. Louis Barton is assessed for $3000 for the property, and she retained ownership until it was passed to an apparent relative, Mrs. Mary C. Barton, by 1952, at which time the tract was described as 180 acres and assessed at $2800. By 1962, Mrs. Martha B. Hawkinson of Marion owned the property. By 1980, however, the ownership of the N Frl. 1/2 of Section 24 was split between Frank B. Hawkinson, of

New Jersey, who owned 176.8 acres, and W. M. P. Blair, Jr., of California, who owned 4.9 acres. These individuals retained ownership until 1984, which is the last year for which real estate records were available. The larger lot was then assessed at $20,155.

Thus, the northern half of section 24, part of which lies within the developed part of the City of Marion, has never been partitioned into smaller than a 180-acre tract. However, most of this 180-acre tract was covered by Lake Marion until 1918, at which time it was drained and cleared for farming. Meanwhile, the value of the land continued to rise rapidly, except for a brief period during the 1920s and 1930s. Since 1918, ownership has apparently been retained in two families, first the Bartons, and then the Hawkinsons. Since the early 1950s, the study area has been rented to a single family for farming: that of C. Bond of Bond Consulting Engineers (C. Bond, personal communication).

RESULTS OF THE FIELDWORK

Surface Survey

Approximately 75 percent of the study area was covered in low or high dense vegetation, in places with a straw mat from a previous wheat harvest. Visibility in these areas was generally poor to nil (Figure 2 and 3). All of the areas with exposed ground were covered in a pedestrian walk over.

Five artifacts were located within the project area. Three were located approximately 340 meters south of the site's northern border on the sandy sediment that bordered the eastern edge of the site. This sandy sediment exhibits evidence of downslope movement from the ridge to the east, in places forming miniature alluvial fans on the clay loam that covers the swale within which the project area is located. The provenience of the artifacts were recorded in relation to the 0 m South/0 m East coordinate, and mapped.

Subsurface Testing

Shovel tests were excavated in places where vegetation prohibited reliable pedestrian surface survey. One test was located in the northern end of the site area, five were along a vegetated strip in the middle, and three were at the southern end (Figure 3). None of the shovel test pits contained cultural material.

In the northern shovel test (ST 1), the upper 20 cm was composed of a friable grayish-brown (10YR5/2) sandy loam with much visible organic material, particularly in the upper 10 cm. From 20 to 50 cm, the material was a dark brown

Figure 2. Project Area. View towards the Southeast.

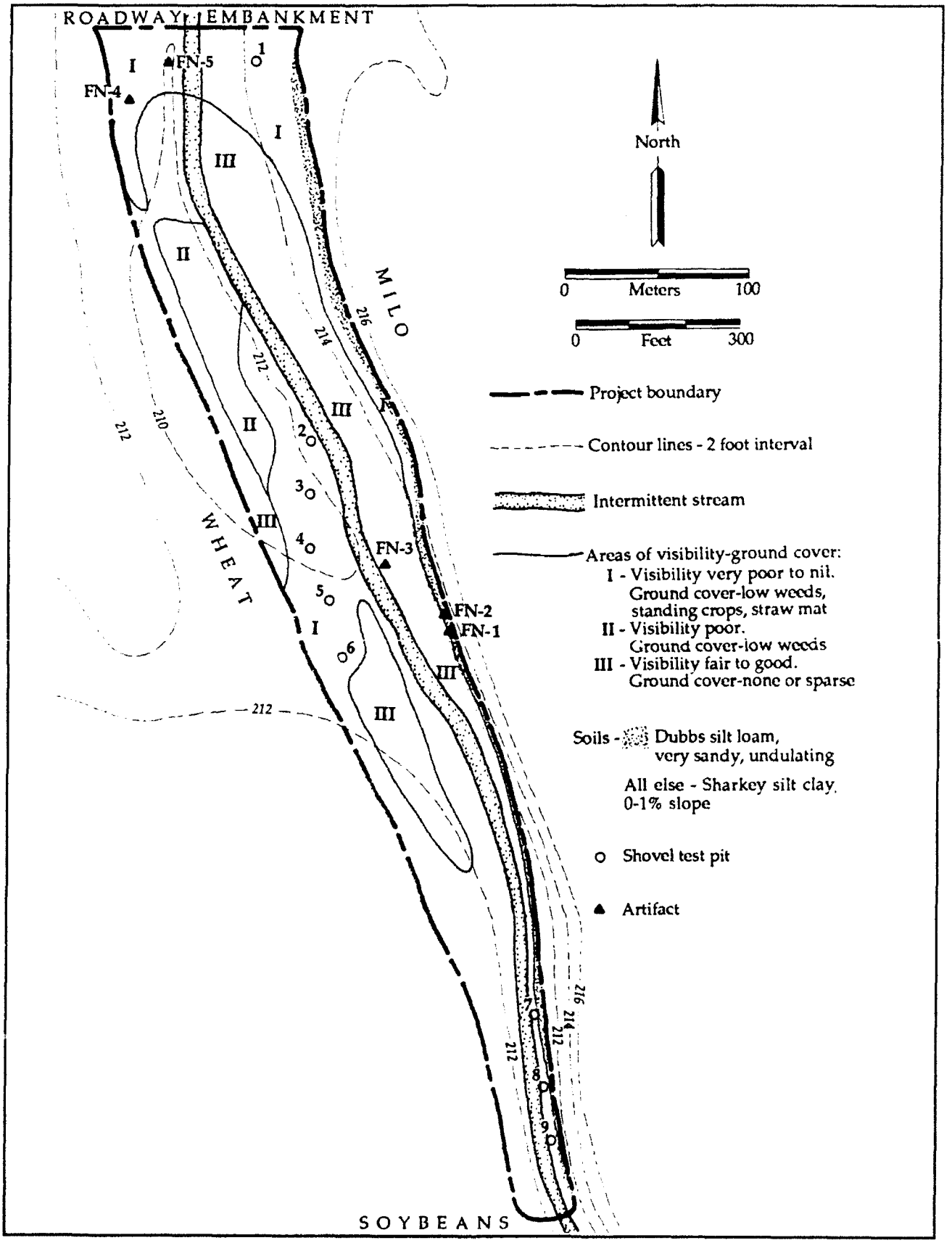

Figure 3. Map of Project Area.

(10YR4/3), moist clay. There were small (0.5 to 2 cm), rounded quartzite and chert pebbles throughout the profile. This was interpreted as a 20 cm-deep layer of plow zone laying on top of fluvial or lacustrine material that was deposited when the project area was submerged.

The sediments exposed in most of the other tests (ST 2-5, 8, and 9) followed a similar pattern and supports the same interpretation. The upper 10 to 20 cm was usually a grayish brown (10YR5/2) sandy loam, friable and dry. Usually, this lay over 30 to 40 cm of very dark gray (10YR3/1) or black (10YR2/1) clay, very moist and compact. In some of the tests, this clay was mottled with yellowish-red (5YR5/8) stains. Two of the nine pits were exceptions to this pattern. In one (ST6), 360 meters south of the 0 m South/0 m East coordinate and 10 meters east of the western border of the site area, the entire 50 cm of the test pit consisted of yellowish brown material, very compact, with some sand and silt but less clay than the other pits. In ST 7, 460 meters south of the 0 m South/0 m East coordinate, and 20 m from the western border of the site, the entire 50 cm of the test pit consisted of a very loose, very sandy sediment apparently low in organic material, silt, and clay, with sparse rounded pebbles. This sediment conforms to the SCS description of Dubbs silt loam, gently undulating (Gray and Ferguson 1974:14). It is interpreted as being material that was deposited on the ridge immediately to the east of the site area when it was covered in water, then washed downslope after it was drained and cleared.

Laboratory Analysis

The artifacts were analysed by Garrow & Associates, Inc. using a system based on South's (1977) artifact patterning concept. In this system, kitchen ceramics are divided among three categories: earthenware, stoneware, and porcelain, with earthenware being the most commonly recovered historic ceramic from nineteenth-century occupations.

One earthenware sherd (FN-5) was recovered from the northern end of the study area during surface inspection (Table 1). It was identifiable generically as "white refined earthenware", because its size (3 mm) prevents more precise identification. Only one other sherd was recovered: a stoneware piece with gray salt glaze exterior and brown Albany-Type slip glaze interior (FN-2). Slip glazes began to be used in America during the first quarter of the nineteenth century. A well-known clay from Albany, New York was first discovered to have the quality of being able to melt and cover the surface of a stoneware pot at a lower temperature than that needed for firing the vessel. Later, other clays from Elkhart, Indiana, and Rowley, Michigan were found to produce an effect so similar that it is difficult to distinguish the three. Workers often use the generic term "Albany-Type slip glaze" for brown glazes (Greer 1981). During the nineteenth century, vessels with such a brown glaze on the

interior surface were commonly coated on the exterior with a salt glaze in order to create an impermeable container (Greer 1981). On this basis, the Albany Type slip interior/salt glaze exterior sherd could be attributed to the nineteenth century.

Table 1. Artifact Inventory for the River Trace, Inc. Permit Area

Field Number	Count	Artifact Description
FN-1	1	Green bottle glass, possibly mold-blown
FN-2	1	Base of stoneware vessel, grey salt glaze exterior/brown Albany type slip interior
FN-3	1	Amber machine-made bottle glass
FN-4	1	Unidentified metal object (iron)
FN-5	1	Unidentified white refined earthenware

Two glass artifacts were also recovered from the study area. FN-1 is a fragment of amber machine-made bottle glass, and is of a size that would quickly reduce if it came into contact with a plow. It is considered to be modern trash. The other is a piece of green bottle glass (FN-1) that may have been formed by mold-blowing. While most early glass containers was free-blown, mold-blown and machine made bottles became common during the nineteenth and twentieth centuries. Mold-blown glass occurs after ca. 1818. Machine made bottles were used in commercial production beginning in 1893, although fully automatic devices were not introduced until 1917 (Jones and Sullivan 1985:39). The one piece of possibly mold-blown glass therefore may have a nineteenth-century origin.

The metal artifact that was recovered form the northern end of the site is a piece of iron (FN-4). It is not identifiable as to function, but appears to be a part from a modern vehicle or farm machinery.

VI. SUMMARY AND MANAGEMENT RECOMMENDATIONS

A cultural resources intensive survey at the River Trace, Inc. permit area in the City of Marion, Crittenden County, Arkansas, was conducted at the request of the U.S. Army Corps of Engineers, Memphis District by Garrow & Associates, Inc. The investigations included an intensive field survey at the project area, a cultural resources background and literature search, artifact analysis and report preparation.

The literature and records search included consultations of Arkansas Archeological Survey State site files, a review of Tax Assessment Records at the Crittenden County Courthouse, and documentary research into the history of Crittenden County at the Crittenden County Library

The results of the literature and records search indicate that no previously recorded prehistoric or historic sites are present in the project area.

The archaeological fieldwork included a pedestrian survey of all of the areas where visibility was fair or better, and shovel tests every thirty meters in the areas where vegetation prevented visual survey. All artifacts found were located on the surface. Their locations were mapped and they were collected for laboratory analysis.

A total of five artifacts was found. There location indicates they were deposited as a result of modern refuse disposal, modern farming practices, and slope wash from the ridge to the east. No cultural resources meeting criteria established for eligibility for nomination to the National Register of Historic Places were encountered.

Based on the negative findings from the archaeological testing and the literature and records search, combined with the fact that the area was submerged until 1916, it appears that the potential for significant cultural resources within the project area is very low. No further archaeological work is recommended.

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APPENDIX 1: SCOPE OF WORK

DESCRIPTION/SPECIFICATIONS

A CULTURAL RESOURCES INTENSIVE SURVEY, WITH TESTING, WITHIN THE PROPOSED PERMIT AREA

1-1. General Scope of Services. The types of services to be performed by the Contractor include:

a. A Cultural Resources Background and Literature Searches, Intensive Survey and Site Surface and Subsurface Evaluations Within the Proposed Permit Area.

b. Detailed analysis of data obtained from fieldwork and other sources for the purpose of determining site significance with respect to National Register of Historic Places or to supply data prerequisite to performance of other work tasks.

c. Compilation and synthesis of all necessary data for making determinations of cultural resources site eligibility for the National Register of Historic Places, including preparation of National Register nomination forms.

d. Written cultural resources assessments and evaluations for environmental impact statements, environmental assessments, and other project documents.

e. Preparation of technical reports containing results of work accomplished under this contract.

1.2. Legal Contexts. Tasks to be performed are in partial fulfillment of the Memphis District's obligations under the National Historic Preservation Act of 1966 (P.L. 89-665), as amended; the National Environment Policy Act of 1969 (P.L. 91-190); Executive Order 11593, "Protection and Enhancement of Cultural Environment; the Archaeological Resources Protection Act of 1979 (PL 96-95); and the Advisory Council on Historic Preservation, "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800).

1.3. Personnel Standards.

a. The Contractor shall utilize a systematic, interdisciplinary approach to conduct the study. Specialized knowledge and skills will be used during the course of the study to include expertise in archeology, prehistory, ethnology, history, architecture, geology and other disciplines as required to fulfill requirements of this Scope of Work. Techniques and methodologies used for the study shall be representative of the state of current professional knowledge and development.

b. The following minimal experiential and academic standards shall apply to personnel involved in investigations described in this Scope of Work:

(1) Archeological Project Directors or Principal Investigator(s) (PI). Individuals in charge of an archeological project or research investigation contract, in addition to meeting the appropriate standards for archeologists, must have a publication record that demonstrates extensive experience in successful field project formulation, execution and technical monograph

reporting. Unless otherwise directed by the Contracting Officer, it will be mandatory that at least one individual actively participating as Principal Investigator or Project Director under this contract, have demonstrated competence and ongoing interest in relevant research domains in the Southeast Missouri Region. Extensive prior research experience as Principal Investigator or Project Director in immediately adjacent areas will also satisfy this requirement. The requirement may also be satisfied by utilizing consulting Co-principal Investigators averaging no less than 25% of Principal Investigator paid hours for the duration of contract activities. Changes in any Project Director or Principal Investigator during a delivery order must be approved by the Contracting Officer. The Contracting Officer may require suitable professional references to obtain estimates regarding the adequacy of prior work.

(2) Archeologist. The minimum formal qualifications for individuals practicing archeology as a profession are a B.A. or B.S. degree from an accredited college or university, followed by a minimum of two years of successful graduate study or equivalent with concentration in anthropology and specialization in archeology and at least two summer field schools or their equivalent under the supervision of archeologists of recognized competence. A Master's thesis or its equivalent in research and publication is highly recommended, as is the M.A. degree.

(3) Architectural Historian. The minimum professional qualifications in architectural history are a graduate degree in architectural history, historic preservation, or closely related fields, with course work in American architectural history; or a bachelor's degree in architectural history, historic preservation, or closely related field plus one of the following:

(a) At least two years full-time experience in research, writing, or teaching in American history or restoration architecture with an academic institution, historical organization or agency, museum, or other professional institution; or

(b) Substantial contribution through research and publication to the body of scholarly knowledge in the field of American architectural history.

(4) Other Professional Personnel. All other personnel utilized for their special knowledge and expertise must have a B.A. or B.S. degree from an accredited college or university, followed by a minimum of two years of successful graduate study with concentration in appropriate study and a publication record demonstrating competing in the field of study.

(5) Other Supervisory Personnel. Persons in any supervisory position must hold a B.A., B.S. or M.A. degree with a concentration in the appropriate field of study and a minimum of 2 years of field and laboratory experience in tasks similar to those to be performed under this contract.

(6) Crew Members and Lab Workers. All crew members and lab workers must have prior experience compatible with the tasks to be performed under this contract.

c. All operations shall be conducted under the supervision of qualified professionals in the discipline appropriate to the data that is to be discovered, described or analyzed. All contract related activities shall be

performed consistent with the Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation, and the Society of Professional Archeology's Code of Ethics and Standards. Vitae of personnel involved in project activities may be required by the Contracting Officer at anytime during the period of service of this contract.

1.4. The Contractor shall designate in writing the name or names of the Principal Investigator(s). In the event of controversy or court challenge, the Principal Investigator shall be available to testify with respect to report findings. The additional services and expenses will be at Government expense, per paragraph 1.9 below.

1.5. The Contractor shall keep standard field records which may be reviewed by the Contracting Officer. These records shall include field notes, appropriate state site survey forms and any other cultural resource forms and/or records, field maps and photographs necessary to successfully implement requirements of the Scope of Work.

1.6. To conduct field investigations, the Contractor will obtain all necessary permits, licenses; and approvals from all local, state and Federal authorities. Should it become necessary in the performance of the work and services of the Contractor to secure the right of ingress and egress to perform any of the work required herein on properties not owned or controlled by the Government, the Contractor shall secure the consent of the owner, his representative, agent, or leasee, prior to effecting entry and conduct the required work unless otherwise notified by Contracting Officer on such property.

1.7. Innovative approaches to data location, collection. description and analysis, consistent with other provisions of this contract and the cultural resources requirements of the Memphis District, are encouraged.

1.8. No mechanical power equipment other than that referenced in paragraph 3.7. shall be utilized in any cultural resource activity without specific written permission of the Contracting Officer.

1.9. The Contractor shall furnish expert personnel to attend conferences and furnish testimony in any judicial proceedings involving the archeological and historical study, evaluation, analysis and report. When required, arrangements for these services and payment therefor will be made by representatives of either the Corps of Engineers or the Department of Justice.

1.10. The Contractor, prior to the acceptance of final reports, shall not release any sketch, photographs, report or other material of any nature obtained or prepared under this contract without specific written approval of the Contracting Officer.

1.11. The extent and character of the work to be accomplished by the Contractor shall be subject to the general supervision, direction control and approval of the Contracting Officer. The Contracting Officer may have a representative of the Government present during any or all phases of Scope of Work requirements.

1.12. The Contractor shall obtain Corps of Engineers Safety Manual (EM 385-1-1) and comply with all appropriate provisions. Particular attention is directed to safety requirements relating to the deep excavation of soils.

1.13. There will be two categories of meetings between Contractor and Contracting Officer: (1) scheduled formal meetings to review contract performance, and (2) informal, unscheduled meetings for clarification, assistance, coordination and discussion. The initial meeting may be held prior to the beginning of field work. Category (1) meetings will be scheduled by the Contracting Officer and will be held at the most convenient location, to be chosen by the Contracting Officer. This may sometimes be on the project site, but generally will be at the office of the Contracting Officer.

2. DEFINITIONS.

2.1. "Cultural resources" are defined to include any building, site, district, structure, object, data, or other material relating to the history, architecture, archeology, or culture of an area.

2.2. "Background and Literature Search" is defined as a comprehensive examination of existing literature and records for the purpose of inferring the potential presence and character of cultural resources in the study area. The examination area may also serve as collateral information to field data in evaluating the eligibility of cultural resources for inclusion in the National Register of Historic Places or in ameliorating losses of significant data in such resources.

2.3. "Intensive Survey" is defined as a comprehensive, systematic and detailed on-the-ground survey of an area, of sufficient intensity to determine the number, types, extent and distribution of cultural resources present and their relationship to project features.

2.4. "Mitigation " is defined as the amelioration of losses of significant prehistoric, historic, or achitectural resources which will be accomplished through preplanned actions to avoid, preserve, protect, or minimize adverse effect upon such resources or to recover a representative sample of the data they contain by implementaion of scientific research and other professional techniques and procedures. Mitigation of losses of cultural resources includes, but is not limiteed to, such measures as: (1) recovery and preservation of an adequate sample of archeological data to allow for analysis and published interpretation of the cultural and environmental conditions prevailing at the times(s) the area was utilized by man; (2) recording, through architectural quality photographs and/or measured drawings of buildings, structures, districts, sites and objects and deposition of such documentation in the Library of Congress as a part of the National Architectural and Engineering Record; (3) relocation of buildings, structures and objects; (4) modification of plans or authorized projects to provide for preservation of resources in place; (5) reduction or elimination of impacts by engineering solutions to avoid mechanical effects of wave wash, scour, sedimentation and related processes and the effects of saturation.

2.5. "Reconnaissance" is defined as an on-the-ground examination of selected portions of the study area, and related analysis adequate to assess the general nature of resources in the overall study area and the probable impact on resources of alternative plans under consideration. Normally reconnaissance will involve the intensive examination of not more than 15 percent of the total proposed impact area.

2.6. "Significance" is attributable to those cultural resources of historical, architectural, or archeological value when such properties are included in or have been determined by the Secretary of the Interior to be eligible for inclusion in the National Register of Historic Places after evaluation against the criteria contained in 36 CFR 63.

2.7. "Testing" is defined as the systematic removal of the scientific, prehistoric, historic, and/or archeological data that provide an archeological or architectural property with its research or data value. Testing may include controlled surface survey, shovel testing, profiling, and limited subsurface test excavations of the properties to be affected for purposes of research planning, the development of specific plans for research activities, excavation, preparation of notes and records, and other forms of physical removal of data and the material analysis of such data and material, preparation of reports on such data and material and dissemination of reports and other products of the research. Subsurface testing shall not proceed to the level of mitigation.

2.8. "Analysis" is the systematic examination of material data, environmental data, ethnographic data, written records, or other data which may be prerequisite to adequately evaluating those qualities which contribute to their significance.

3. STUDY AREA

3.1. Study Area

The project area is the proposed permit area and associated fill and/or borrow areas.

4. GENERAL PERFORMANCE SPECIFICATIONS.

4.1. Research Design.

Survey, testing and data recovery shall be conducted within the framework of a regional research design including, where appropriate, questions discussed in the State Plan. All typological units not generated in these investigations shall be adequately referenced. It should be noted that artifactual typologies constructed for other areas may or may not be suitable for use in the study area. It is, therefore, of great importance that considerable effort be spent in recording and describing artifactual characteristics treated as analytically diagnostic in this study as well as explicit reasons for assigning (or not assigning) specific artifacts to various classificatory units. Specific requirements of research designs undertaken as individual work items will be listed in delivery orders.

4.2. Background and Literature Search.

a. This task shall include an examination of the historic and prehistoric environmental setting and cultural background of the study area and shall be of sufficient magnitude to achieve a detailed understanding of the overall cultural and environmental context of the study area. It is axiomatic that the background and literature search shall normally preceed the initiation of all fieldwork.

b. Information and data for the literature search shall be obtained, as appropriate, from the following sources: (1) Scholarly reports - books, journals, theses, dissertations and unpublished papers; (2) Official Records - Federal, state, county and local levels, property deeds, public works and other regulatory department records and maps; (3) Libraries and Museums - both regional and local libraries, historical societies, universities, and museums; (4) Other repositories - such as private collections, papers, photographs, etc.; (5) Archeological site files at local universities, the State Historic Preservation Office, the office of the State Archeologist; (6) Consultation with qualified professionals familiar with the cultural resources in the area, as well as consultation with professionals in associated areas such as history, sedimentology, geomorphology, agronomy, and ethnology.

c. The Contractor shall include as an appendix to the draft and final reports, written evidence of all consultation and any subsequent response(s), including the dates of such consultation and communications.

d. The background and literature search shall be performed in such a manner as to facilitate the construction of predictive statements (to be included in the study report) concerning the probable quantity, character, and distribution of cultural resources within the project area. In addition, information obtained in the background and literature search should be of such scope and detail as to serve as an adequate data base for subsequent cultural resources work undertaken for the purpose of discerning the character and significance of specific cultural resources or for the constuction of research designs undertaken in conjunction with future area cultural resources tasks.

4.3. Intensive Survey

a. Intensive survey shall include the on-the-ground examination of the entire study area.

b. Unless excellent ground visability and other conditions conducive to the observation of cultural evidence occurs, shovel test pits, or comparable subsurface excavation units, shall be installed at intervals no greater than 30 meters throughout the study area. Note that auger samples, probes, and coring tools will not be considered comparable subsurface units. Shovel test pits shall be minimally 30 x 30 centimeters in size and extend to a minimum depth of 50 centimeters. Unit fill material shall be screened using ¼" mesh hardware cloth. Additional shovel test pits shall be excavated in areas judged by the Principal Investigator to display a high potential for the presence of surface and near surface cultural resources deposits. All shovel test pits shall be refilled. If, during the course of intensive survey activities, areas are encountered in which disturbance or other factors clearly and decisively preclude the possible presence of significant cultural resources, the Contractor shall carefully examine and document the nature and extent of the factors and then proceed with survey activities in the remainder of the study area. Documentation and justification of such action shall appear in the survey report. The location of all shovel test units and surface observations shall be recorded and shown in the report of investigations.

c. When cultural remains are encountered, preliminary horizontal site boundaries shall be derived by the use of surface observation procedures. The Contractor shall establish a primary site datum at the discovered cultural loci which shall be precisely related to a permanent reference point (in terms of

azimuth and distance) by means of a transit level. If possible, the permanent reference point used shall appear on Government blueline (project) drawings and/or 7.5 minute U.S.G.S. quad maps. If no permanent landmark is available, a permanent datum, consisting minimally of a metal rod, shall be established in a secure location for use as a reference point. The permanent datum shall be precisely plotted and shown on U.S.G.S. quad maps and project drawings. All descriptions of site location shall refer to the location of the primary site datum.

d. All standing buildings and structures (other than those patently modern, i.e., less than 50 years old) shall be recorded and described. For a building to be considered "standing" it must retain four walls and at least a skeletal roof structure. A building or structure found in the field to be partially or totally collapsed will be considered an archeological site. In these cases, general data concerning construction materials and techniques and floor plan, if discernible, must be collected. The Contractor shall supply preliminary information concerning the suitability of a structure or building for relocation and restoration (structural soundness for example).

e. For each archeological site or architectural property recorded during the survey, the Contractor shall complete and submit the standard state archeological site or architectural property survey form, respectively. The Contracor shall be responsible for reproducing or obtaining a sufficient quantity of these forms to meet the needs of the project. The Contractor shall be responsible for coordinating with the appropriate state agency to obtain state site-file numbers for each archeological site and architectural property recorded.

4.4. Site Surface Evaluation

a. Surface collection of the site area shall be accomplished in order to obtain data representative of total site surface content. Both historic and prehistoric items shall be collected. The Contractor shall carefully note and report descriptions of surface conditions of the site including ground cover and the suitability of soil surfaces for detecting cultural items (ex: recent rainfall, standing water or mud). If ground surfaces are not highly conducive to surface collection, screened shovel tests units shall be used to augment surface collection procedures. It should be noted, however, that such units should be substituted for total surface collection only where the presence of ground cover requires such techniques.

b. Care should be taken to avoid bias in collecting certain classes of data or artifact types to the exclusion of others (ex: debitage or faunal remains) so as to insure that collections accurately reflect both the full range and the relative proportions of data classes present (ex: the proportion of debitage to finished implements or types of implements to each other). Such a collecting strategy shall require the total collection of quadrat or other sample units in sufficient quantities to reasonably assure that sample data are representative of such descrete site subareas as may exist. Since the number and placement of such sample units will depend, in part, on the subjective evaluation of intrasite variability, and the amount of ground cover, the Contractor shall describe in the study report the rationale for the number and distribution of collection units. In the event that the Contract utilizes systematic sampling procedures in obtaining representative surface samples, care should be taken to avoid periodicity in recovered data. No individual sample

unit type used in surface data collection shall exceed 36 square meters in area. Unless a smaller fraction is approved by the Contracting Officer, surface collected areas shall constitute no less than 25 percent of total site areas. No two surface collection units shall be adjacent to each other. Detailed results of controlled surface collections shall be graphically depicted in plan view in the report of investigations.

c. The Contractor shall undertake (in addition and subsequent to sample surface collecting) a general site collection in order to increase the sample size of certain classes of data which the Principal Investigator may deem rerequisite to an adequate site-specific and intersite evaluation of data.

d. As an alternative to surface collecting procedures discussed above, where surface visability is excellent, the Contractor may collect all visable artifacts. If such a procedure is undertaken, the precise proveniences of all individual artifacts shall be related to the primary site datum by means of a transit level.

4.5. Subsurface Testing/Evaluation

a. Subsurface testing and evaluation may include but not be limited to the excavation of formal test units, excavation of informal test units (ex: shovel tests), block excavations, mechanical excavation, stripping and feature excavation.

b. Subsurface test units (other than shovel cut units) shall be excavated in levels no greater than 10 centimeters. Where cultural zonation or plow disturbance is present however, excavated materials shall be removed by zones (and in 10 cm. levels within zones where possible). Subsurface test units shall extend to a depth of at least 20 centimeters below artifact bearing soils. A portion of each test unit, measured from one corner (of a minimum 30 x 30 centimeters), shall be excavated to a depth of 40 centimeters below artifact bearing soils. All excavated materials (including plow zone material) shall be screened using a minimum of ¼" hardware cloth. Representative profile drawings and photographs shall be made of excavated units. Subsequent to preparation of documentation for each test unit, the unit shall be backfilled and compacted to provide reasonable pedestrian safety.

c. Stringent horizontal spatila control of testing shall be maintained by relating the location of all test units to the primary site datum either by means of a grid system (including those used in controlled surface collection) or by azimuth and distance.

d. If features are encountered in the excavation of formal units, test units, if necessary, shall be expanded and all feature fill (including floatation samples) shall be removed and documented when such expansion and removal is consistent with the quantity of work specified in the contract delivery order. If such removal exceeds authorized work quantities, only the portion of the feature within the initial test units (including a floatation sample) shall be removed and documented. As appropriate, drawings, piece plotting, photographs and other documentation of feature contents shall be made.

e. If in situ human remains are encountered and all skeletal remains and associated cultural items cannot be properly removed and documented under the

terms of the contract and delivery order, burials shall not be excavated but shall be carefully refilled in a manner which will afford maximum protection to the burial in the event of later excavation.

4.6. Laboratory Processing, Analysis and Preservation.

All cultural materials recovered will be cleaned and stored in deterioration resistant containers suitable for long term curation. Diagnostic artifacts will be lableled and catalogued individually. A diagnostic artifact is defined herein as any object which contributes individually to the needs of analysis required by this Scope of Work or the research design. All other artifacts recovered must minimally be placed-in labeled, deterioration resistant containers, and the items catalogued. The Contractor shall describe and analyze all cultural materials recovered in accordance with current professional standards. Artifactual and non-artifactual analysis shall be of an adequate level and nature to fulfill the requirements of this Scope of Work. All recovered cultural items shall be catalogued in a manner consistent with state requirements. The Contractor shall consult with appropriate state officials as soon as possible following the conclusion of field work in order to obtain information (ex.: accession numbers) prerequisite to such cataloging procedures.

5. Curation.

All artifacts shall be prepared for curation in accordance with the criteria of the state in which they are found.

6. GENERAL REPORT REQUIREMENTS.

6.1. The primary purpose of the cultural resources report is to serve as a planning tool which aids the Government in meeting its obligations to preserve and protect our cultural heritage. The report will be in the form of a comprehensive, scholarly document that not only fulfills mandated legal requirements but also serves as a scientific reference for future cultural resources studies. As such, the report's content must be not only descriptive but also analytic in nature.

6.2. Upon completion of all field investigation and research, the Contractor shall prepare a report detailing the work accomplished, the results, and recommendations for the for the project area. Copies of the draft and final reports of investigation shall be submitted in a form suitable for publication and be prepared in a format reflecting contemporary organizational and illustrative standards for current professional archeological journals. The final report shall be typed on standard size 8½" x 11" bond paper with pages numbered and with page margins one inch at top, bottom and sides. Photographs, plans, maps, drawings and text shall be clean and clear.

6.3. The report shall include, when appropriate, the following items:

a. Title Page. The title page should provide the following information; the type of task undertaken, the study areas and cultural resources which were assessed; the location (county and state), the date of the report; the contract number; the name of the author(s) and/or the Principal Investigator; and the

agency for which the report is being prepared. If a report has been authored by someone other than the Principal Investigator, the Principal Investigator must at least prepare a forward describing the overall research context of the report, the significance of the work, and any other related background circumstances relating to the manner in which the work was undertaken.

b. Abstract. An abstract suitable for publication in an abstract journal shall be prepared and shall consist of a brief, quotable summary useful for informing the technically-oriented professional public of what the author considers to be the contributions of the investigation of knowledge.

c. Table of Contents.

d. Introduction. This section shall include the purpose of the report, a description of the proposed project, a map of the general area, a project map, and the dates during which the investigations were conducted. The introduction shall also contain the name of the institution where recovered materials and documents will be curated.

e. Environmental Context. This section shall contain, but not be limited to, a discussion of probable past floral, faunal, and climatic characteristics of the project area. Since data in this section may be used in the evaluation of cultural resources significance, it is imperative that the quantity and quality of environmental data be sufficient to allow subsequent detailed analysis of the relationship between past cultural activities and environmental variables.

f. Previous Research. This section shall describe previous research which may be useful in deriving or interpreting relevant background data, problem domains, or research questions and in providing a context in which to examine the probability of occurrence and significance of cultural resources in the study area.

g. Literature Search and Personal Interviews. This section shall discuss the results of the literature search, including specific data sources, and personal interviews which were conducted during the course of investigations.

h. Research Design. Where possible, the research design should contain a discussion of potentially relevant research domains and questions. Field and analytical methods and other data should be explicitly related to research questions.

i. Fieldwork Methods and Collected Data. This section should contain a description of field methods and their rationale as well as, a description of data collected. All cultural items collected must be listed with their respective proveniences either in the main body of the report or as an appendix. Where appropriate, field methods should be explicitly related to the research design.

j. Analytical Methods and Results. This section shall contain an explicit discussion of analytical methods and results, and shall demonstrate how field data, environmental data, previous research data, the literature search and personal intervies have been utilized. Specific research domains and questions as well as methodological strategies employed should be included where possible.

k. Recommendations.

(1) When appropriate and when sufficient information is available, this section should contain assessments of the eligibility of specific cultural properties in the study area for inclusion in the National Register of Historic Places. Where insufficient data are present for such evaluation, the Contractor shall list activities necessary to obtain such data.

(2) Significance should be discussed explicitly in terms of previous regional and local research and relevant problem domains. Statements concerning significance shall contain a detailed, well-reasoned argument for the property's research potential in contributing to the understanding of cultural patterns, processes or activities important to the history or prehistory of the locality, region or nation, or other criteria of significance. Conclusions concerning insignificance likewise, shall be fully documented and contain detailed and well-reasoned arguments as to why the property fails to display adequate research potential or other characteristics adequate to meet National Register criteria of significance. For example, conclusions concerning significance or insignificance relating solely to the lack of contextual integrity due to plow disturbance or the lack of subsurface deposits will be considered inadequate. Where appropriate, due consideration should be given to the data potential of such variables as site functional characteristics, horizontal intersite or intrasite spatial patterning of data and the importance of the site as a representative systemic element in the patterning of human behavior. All report conclusions and recommendations shall be logically and explicitly derived from data discussed in the report.

(3) The significance or insignificance of cultural resources can be determined adequately only within the context of the most recent available local and regional data base. Consequently, the evaluation of specific individual cultural loci examined during the course of contract activities shall relate these resources not only to previously known cultural data but also to a synthesized interrelated corpus of data including those data generated in the present study.

l. References (American Antiquity Style).

m. Appendices (Maps, Correspondence, etc.). A copy of this Scope of Work shall be included as an appendix to the final report of investigations.

6.4. All of the above items may not be appropriate to all delivery order tasks. further, the above items do not necessarily have to be in descrete sections so long as they are readily discernable to the reader.

6.5. In order to prevent potential damage to cultural resources, no information shall appear in the body of the report which would reveal precise resource location. All maps which include or imply precise site locations shall be included in reports as a readily removable appendix (e.g.: envelope).

6.6. No logo or other such organizational designation shall appear in any part of the report (including tables or figures) other than the title page.

6.7. Unless specifically otherwise authorized by the Contracting Officer, all reports shall utilize permanent site numbers assigned by the state in which the study occurs.

6.8. All appropriate information (including typologies and other classificatory units) not generated in these contract activities shall be suitably referenced.

6.9. Reports shall contain site specific maps when appropriate. Site maps shall indicate site datum(s), location of data collection units (including shovel cuts, subsurface test units and surface collection units), site boundaries in relation to proposed project activities, site grid systems (where appropriate), and such other items as the Contractor may deem appropriate to the purposes of this contract.

6.10. Information shall be presented in textual, tabular, and graphic forms, whichever are most appropriate, effective and advantageous to communicate necessary information. All tables, figures and maps appearing in the report shall be of publishable quality. Itemized listings of all recovered artifacts by their smallest available proveniences must appear in either the body of the report or as a report appendix.

6.11. Any abbreviated phrases used in the text shall be spelled out when the phrase first occurs in the text. For example use "State Historic Preservation Officer (SHPO)" in the initial reference and thereafter "SHPO" may be used.

6.12. The first time the common name of a biological species is used it should be followed by the scientific name.

6.13. In addition to street addresses or property names, sites shall be located on the Universal Transverse Mercator (UTM) grid.

6.14. Generally, all measurements should be metric.

6.15. As appropriate, diagnostic and/or unique artifacts, cultural resources or their contexts shall be shown by drawings or photography. Black and white photographs are preferred except when color changes are important for understanding the data being presented. No instant type photographs may be used.

6.16. Negatives of all black and white photographs and/or color slides of all plates included in the final report shall be submitted to the Contracting Officer. Copies of all negatives shall be curated with other documentation.

7. SUBMITTALS.

7.1. Unless otherwise stipulated in the delivery order, the Contractor shall submit 4 copies of the draft report, one unbound original and 20 final report copies with high quality wrap-around binding. In the event more than one series of review comments is determined necessary by the Contracting Officer, additional draft copies may be required.

7.2. When survey is performed, the Contractor shall submit under separate cover, 4 copies of appropriate 15' quadrangle maps (7.5' when available) or other site drawings which show exact boundaries of all cultural resources within the project area and their relationship to project features. Site boundaries shall be entered on construction drawings (when available). Blueline drawings will be supplied by the Government.

7.3. The Contractor shall submit to the Contracting Officer completed National Register forms including photographs, maps, and drawings in accordance with the National Register Program, if any sites inventoried or tested is found to meet the criteria of eligibility for nomination and for determination of significance. The completed National Register forms shall be submitted with the final report.

7.4. At any time during the period of service of this contract, upon the written request of the Contracting Officer, the Contractor shall submit, within 15 calendar days, any portion or all field records described in paragraph 1.5. without additional cost to the Government.

7.5. When cultural resources are located during contract activities, the Contractor shall supply the appropriate State Historic Preservation Office with completed site forms, survey report summary sheets, maps or other forms as appropriate. Blank forms may be obtained from the State Historic Preservation Office. Copies of such completed forms and maps shall be submitted to the Contracting Officer within 20 calendar days of the end of fieldwork.

7.6. Documentation. The Contractor shall submit detailed monthly progress reports to the Contracting Officer by the 7th day of every month for the duration of the contract. These reports will contain an accurate account of all field work, laboratory procedures and results in sufficient detail to allow monitoring of project progress.

7.7. Additional submittals may be required.

7.8. The Contractor shall make any required corrections to reports after review by the Contracting Officer. The Contracting Officer may defer Government review comments pending receipts of review comments from the State Historic Preservation Officer or reviewing agencies. More than one series of draft report corrections may be required. In the event that the government review period (40 days) is exceeded and upon request of the Contractor, the contract period will be extended automatically on a calendar day for day basis. Such extension shall be granted at no additional cost to the Government.

8. Schedule. The work must be received by the required date shown on the purchase order.

APPENDIX 2: RESUMES OF KEY PERSONNEL

GUY GORDON WEAVER
GARROW & ASSOCIATES, INC.

Education

Ph. D. program in Anthropology, Southern Illinois University at Carbondale, Illinois, August 1985 to present.
M.A. in Anthropology, Memphis State University, December 1978.
B. A. in Anthropology, Memphis State University, May 1975.

Areas of Specialization

Cultural Resource Management, Historical and Prehistoric Archaeology of the Southeastern United States and West Indies, Social Organization, Ethnicity, Folklore, Urban Archaeology, Historical Ethnology, Cartography, Museology.

Professional Membership

Society for American Archaeology (Member)
Southeastern Archaeological Conference (Member)
Society for Historical Archaeology (Member)
Archaeological Institute of America (Member)
Tennessee Anthropological Society (Member)
West Tennessee Historical Society (Member)
Memphis Anthropological Society (President 1977-78)
Mid-South Association for Professional Anthropologists (Charter Member)

Professional Experience

Academic Positions

Southern Illinois University, Carbondale, Department of Anthropology, Teaching and Research Assistant, 8/85-5/88.
Memphis State University, Memphis, Department of Anthropology, Adjunct Assistant Professor, 12/80-present; Instructor, 9/83-12/83.
Shelby State Community College, Memphis, Department of Sociology and Anthropology, Instructor, 1/80-5/80.
Rhodes College (Southwestern at Memphis), Department of Sociology and Anthropology, Co-instructor, 3/79-4/79, 4/80-5/80.

Non-Academic Positions

Garrow & Associates, Inc., Atlanta, Georgia. Branch Manger & Senior Archaeologist, 10/88-present; Archaeologist II, 9/87-10/88.

Center for Archaeological Investigations, Southern Illinois University at Carbondale. Researcher II, 9/84-12/84.

Memphis State University Anthropological Research Center, Memphis. Co-principal Investigator, Field Director, Crewmember 1974-1985.

Tennessee Valley Authority, Cultural Resources Program. Principal Investigator under Personal Services Contract, 5/80-5/86.

Center for Southern Folklore, Memphis, Tennessee. Research Associate, 11/82-2/83.

Tennessee Division of Archaeology, Nashville. Archaeological Aid, 6/78-9/78, 5/80-8/80, Crewmember 5/76-8/76.

Field Experience

Participation in over sixty anthropological and archaeological field projects in Tennessee, Illinois, Arkansas, Alabama, Mississippi, Georgia, Kentucky, Virginia, New Hampshire, Vermont, Puerto Rico, U.S. Virgin Islands, as well as Derbyshire, U.K., Rota, Mariana Islands, Micronesia and Barbados, West Indies.

Publications and Major Manuscripts

Foster, Lee A., and Guy G. Weaver
1990 *A Cultural Resources Intensive Survey of the Proposed Clear View Environmental Control Facility, Scott County, Mississippi.* Submitted to Chambers Development Corporation. Garrow & Associates, Memphis.

Buchner, Drew, and Guy G. Weaver
1990 *A Cultural Resources Intensive Survey of the Ensley Berm Construction Site, Shelby County, Tennessee.* Submitted to the Memphis District, Corps of Engineers. Garrow & Associates, Inc., Memphis.

Weaver, Guy G., John L. Hopkins and Mary Kwas
1990 *Archaeological Testing and Data Recovery at the Morning Sun Farmstead Site (40SY508), Shelby County, Tennessee: Preliminary Report.* Report prepared for the Tennessee Department of Transportation. Garrow & Associates, Inc., Memphis.

Weaver, Guy G., and Stephen R. James, Jr.
1989 *A Terrestrial and Underwater Cultural Resources Survey of Inner*

Brass Island, St. Thomas, U.S. Virgin Islands. Report prepared for Virgin Islands Cay, Ldt. Garrow & Associates, Inc., Atlanta, and Underwater Archaeological Consortium, Memphis, Tennessee.

1989b *A Terrestrial and Underwater Cultural Resources Survey at Hull Bay, St. Thomas, U.S. Virgin Islands*. Report prepared for Virgin Islands Cay, Ldt. Garrow & Associates, Inc., Atlanta, and Underwater Archaeological Consortium, Memphis, Tennessee.

Weaver, Guy G. and Charles H. McNutt, Jr.
1989 *A Survey Report of Archaeological Resources in Portions of the Chickamauga Reservoir, Tennessee: 1989 Season*. Submitted to the Tennessee Valley Authority. Garrow & Associates, Inc., Atlanta.

Garrow, Patrick H., Guy G. Weaver and Charles R. Cobb, (Editors)
1989 *Nineteenth- To Twentieth-Century Agriculture in Southern Illinois: Pope County Farmstead Thematic Study , Shawnee National Forest: Phase II Results*. Report submitted to the National Forest Service, Shawnee National Forest, Harrisburg, Illinois. Garrow & Associates, Inc., Atlanta.

Weaver, Guy G.
1989 *Archaeological Data Recovery at La Iglesia de Maraquez (Site PO-39), Ponce, Puerto Rico: Phase I Report*. Garrow & Associates, Inc. Draft report submitted to the Jacksonville District, Corps of Engineers. Garrow & Associates, Inc., Atlanta.

Cobb, Charles R., and Guy G. Weaver
1989 *Archaeological Survey for the Proposed Lexington-Knoxville FTA Lightguide Cable, Pulaski, Laurel, and Whitley Counties, Kentucky*. Report submitted to A.T.&T. Communications, Inc. Garrow & Associates, Inc., Atlanta.

Weaver, Guy G., Herminio Rodríguez Morales and Arleen Pabón
1989 *A Cultural Resources Reconaissance within the Proposed Río Grande De Aricibo Flood Control Project, Arecibo, Puerto Rico*. Draft report submitted to the Jacksonville District, Corps of Engineers. Garrow & Associates, Inc., Atlanta.

Weaver, Guy G. and Herminio Rodríguez Morales
1989 *A Cultural Resources Reconnaissance and Survey within the Proposed Río Cibuco Flood Control Project, Vega Baja, Puerto Rico*. Draft report submitted to the Jacksonville District, Corps of Engineers. Garrow & Associates, Inc., Atlanta.

Weaver, Guy G.
1988a *Archaeological Testing at the Site of the Peabody Place Mall and Office Complex, Memphis, Tennessee: Phase II Construction*. Garrow & Associates, Inc. Report Submitted to Division of Housing and Community Development, Memphis, Tennessee. Garrow & Associates, Inc., Atlanta.

1988b "Stone and Coral Tools." In *Archaeological Investigations on Rota, Mariana Islands, Micronesia*, edited by Brian Butler, pp. 255-278. Micronesian Archaeological Survey Report No. 23, Southern Illinois University at Carbondale, Center for Archaeological Investigations Occasional Paper No. 8. Southern Illinois University, Carbondale.

Weaver, Guy G. and Herminio R. Roríguez Morales
1988 *A Cultural Resources Reconnaissance and Survey of the Río Puerto Nuevo Flood Control Project, San Juan, Puerto Rico*. Report submitted to the Jacksonville District, Corps of Engineers. Garrow & Associates, Inc., Atlanta.

Coggeshall, John M. and Jo Anne Nast
1988 *Vernacular Architecture in Southern Illinois: The Ethnic Heritage*. Shawnee Series, Southern Illinois University Press. (Co-researcher, co-author and photographer.)

Weaver, Guy G.
1987 *The Presidents Island and Rivergate Proposed Development Tracts, Memphis, Tennessee*. Garrow & Associates, Inc. Report submitted to ERM-Southeast, Inc., Marrietta, Georgia. Garrow & Associates, Inc., Atlanta.

Weaver, Guy G. and Jonathan Bloom
1987 Addendum to: *Archaeological Survey of the Proposed Northrop Substation and Transmission Line, Peach and Houston Counties, Georgia*. Report submitted to Oglethorpe Power Company, Tucker, Georgia. Garrow & Associates, Inc., Atlanta.

Weaver, Guy G.
1986a *An Archaeological Survey of the City of Salem Wastewater Treatment Facilities, Marion County, Illinois*. Center for Archaeological Investigations, SIU-C Manuscript on File No. 1986-7. Report submitted to Roland Associates, Des Plaines, Illinois.

1986b *An Archaeological Survey of the Proposed Albers Substation Site, Clinton County, Illinois*. Center for Archaeological Investigations, SIU-C Manuscript on File No. 1986-6. Report submitted to Clinton County Electric

Cooperative, Inc., Breese, Illinois.

Weaver, Guy G. and John R. Stein
1986 *A Report of Archaeological Investigations in the Boxley Valley, Buffalo National River, Newton County Arkansas.* Tennessee Valley Authority. Report submitted to the National Park Service, Santa Fe, New Mexico.

Mark B. Sant and Guy G. Weaver
1986 *An Archaeological Survey and Assessment of the Proposed Wastewater Treatment Facilities, Steeleville, Randolph County, Illinois.* Center for Archaeological Investigations, SIU-C Manuscript on File No. 1986-5. Report submitted to E.M. Webb and Associates, Carbondale, Illinois.

McNutt, Charles H. and Guy G. Weaver
1985 *An Above-Pool Survey of Cultural Resources Within the Little Bear Creek Reservoir Area, Franklin County, Alabama.* The Tennessee Valley Authority Publications in Anthropology No. 45, and Memphis State University Anthropological Research Center Occasional Papers No. 13.

Smith, Gerald P. and Guy G. Weaver
1985 *A Cultural Resources Survey of the Proposed One Riverside Drive Condominiums, Memphis, Tennessee.* Report submitted to the Pickering Firm, Memphis, Tennessee.

Weaver, Guy G.
1984a *An Archaeological Survey of the Proposed Devondale Apartment Complex, Metropolis, Massac County, Illinois.* Center for Archaeological Investigations, Southern Illinois University. Report submitted to Landmark, Louisville, Kentucky.

1984b *An Archaeological Survey for the KRPD Baldwin Industrial Port Site, Randolph County, Illinois.* Center for Archaeological Investigations, Southern Illinois University. Report submitted to Kaskaskia Regional Port District, Red Bud, Illinois.

Weaver, Guy G. and Patricia Ruppe
1984 *An Archaeological Survey of the Route 127 Development Corridor Utility System Improvements, Nashville, Washington County, Illinois.* Center for Archaeological Investigations, SIU-C Manuscript on File 1984-13. Submitted to the City of Nashville, Illinois.

Weaver, Guy G. and Gerald P. Smith
1984 *A Report of Archaeological Investigations at Reelfoot-Indian Creek*

Watershed Dam No. 1 and 18, and Adjacent Areas in Obion County, Tennessee. Memphis State University Anthropological Research Center. Report submitted to Soil Conservation Service, Nashville, Tennessee.

Weaver, Guy G. and Mitch Childress
1984a *Archaeological Investigations at the Swan Bay Site (40HY66), Henry County, Tennessee.* Memphis State University Anthropological Research Center. Report submitted to the Tennessee Valley Authority, Norris, Tennessee.

1984b *An Archaeological Reconnaissance for the Proposed Bartlett Corporate Park, Bartlett, Shelby County, Tennessee.* Memphis State University Anthropological Research Center. Report submitted to the City of Bartlett.

Weaver, Guy G. and David Bowman
1984 *An Archaeological Survey of the Proposed Area for Land Application of Waste Water, 201 Facility Plan, EPA Project No. C470469-01-0, Oakland, Fayette County, Tennessee.* Report submitted to Gregory-Grace and Associates, Engineers, Bartlett, Tennessee.

Charles H. McNutt and Guy G. Weaver
1983 *The Duncan Tract Site (40TR27), Trousdale County, Tennessee.* The Tennessee Valley Authority Publications in Anthropology No. 33, Norris, Tennessee.

Charles H. McNutt, Guy G. Weaver, and Glenda Maness
1983a *An Archeological Overview and Management Plan for the Volunteer Army Ammunition Plant, Hamilton County, Tennessee.* Memphis State University Anthropological Center for Woodward-Clyde Consultants. Report submitted to National Park Service, Atlanta Georgia.

1983b *An Archeological Overview and Management Plan for the Holston Army Ammunition Plant, Hawkins and Sullivan Counties, Tennessee.* Memphis State University Anthropological Center for Woodward-Clyde Consultants. Report submitted to National Park Service, Atlanta Georgia.

Gerald P. Smith and Guy G. Weaver
1983 *An Archeological Overview and Management Plan for Radford Army Ammunition Plant.* Memphis State University Anthropological Center for Woodward-Clyde Consultants. Report submitted to National Park Service, Atlanta Georgia.

Raichelson, Richard M.
1983 On the Road: An Ecological Interpretation of the Blues Pianist.

Journal of Regional Cultures 3:1, pp. 41-64. (Cartographer).

Weaver, Guy G., David Bowman and Louella Weaver
1981 *A Cultural Resources Reconnaissance of the Proposed Humboldt and Bradford Drainage Programs, Gibson County, Tennessee.* Report submitted to U.S. Engineer District, Memphis Corps of Engineers.

Weaver, Guy G. and Charles H. McNutt
1981 *A Report of Intensive Testing for Cultural, Archeological and Architectural Resources at the Allen Duncan Tract, Off-Site Borrow Area No. 4, Hartsville Nuclear Plant, Hartsville, Tennessee, 1981.* Memphis State University Anthropological Research Center. Report submitted to the Tennessee Valley Authority, Norris, Tennessee.

Weaver, Guy G.
1979a *Report of Archaeological Excavations at the Denny Site, 40SM69.* Report submitted to the Tennessee Valley Authority, Norris, Tennessee.

1979b *Preliminary Survey of Archaeological and Architectural Resources at Point Pleasant Landing, Saltillo, Decatur County, Tennessee.* Report submitted to the Tennessee Valley Authority, Norris Tennessee.

Weaver, Guy G. and Charles H. McNutt
1979 *Archaeological Survey of the Proposed Franklin-Hartsville Transmission Line.* Report submitted to the Tennessee Valley Authority, Norris, Tennessee

McNutt, Charles H., and Guy G. Weaver
1977 *An Archaeological Survey of the Proposed Piney Campground Expansion, Land Between the Lakes, Steward County, Tennessee.* Report submitted to the Tennessee Valley Authority, Norris, Tennessee.

Broster, John, and Guy G. Weaver
1975 Middle Woodland Settlement Systems Along the South Fork of the Forked Deer River. In *The Pinson Mounds Archaeological Project: Excavations of 1974 and 1975*, edited by John B. Broster and Lee Schneider, pp. 90-98. Tennessee Division of Archaeology Research Series No. 1.

Professional Papers

1990 "Archaeological Investigations at the Morning Sun Farmstead, Shelby County, Tennessee." Paper presented at the April meeting, West Tennessee Historical Society, Memphis, Tennessee. With John L. Hopkins.

1985 "The Tale of Two Wells: Historical Archaeology in Memphis." Paper presented at the April meeting, Archaeological Institute of America, Mid-South Chapter, Memphis Tennessee. With Louella Whitson Weaver.

1982 "Intra and Interskeletal Differences in Nitrogen Content of Prehistoric Human Bone." Paper presented at the Southern Anthropological Society, 17th Annual Meeting, Boone, North Carolina. With David R. Stevenson.

1982 "Chert Utilization Patterns in the Outer Nashville Basin." Paper presented at the Southeastern Archaeological Conference, 39th Annual Meeting, Memphis, Tennessee.

1981 "Excavations at the Duncan Tract Site, 40TR27, Hartsville, Tennessee." Southeastern Archaeological Conference, 38th Annual Meeting, Asheville, North Carolina.

STEPHEN CHARLES COLE
GARROW & ASSOCIATES, INC.

Education

Ph.D. program in Archaeology, University of Washington, Seattle, September 1988 to present.

B.A. in Anthropology, University of Tennessee, Knoxville, August 1988.

Areas of Specialization

Cultural Resource Management, Archaeological Method and Theory, Historical and Prehistoric Archaeology of the Southeastern United States, The Paleolithic of Western Europe, Geoarchaeology.

Professional Membership

Society for American Archaeology (Member)

Field Experience

Garrow & Associates, Inc., Memphis, Tennessee. Archaeologist I, 7/90.

San Juan Island Archaeological Project, San Juan Island and Seattle, Washington. Research Assistant, 11/88 to present.

Roc Allan Archaeological Project, Lot-et-Garonne District, France. Crew Member, 8/87,8/89.

Grotte XVI Archaeological Project, Dordogne District,France. Crew Member, 7/87,7/89.

Coldwater Farm Archaeological Project, Kennett, Missouri. Crew Member, 6/89.

L'Hui Archaeological Project, Lot-et-Vezere District, France. Crew Member, 8/87.