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**A CULTURAL RESOURCES INTENSIVE SURVEY
OF THE ENSLEY BERM CONSTRUCTION SITE,
SHELBY COUNTY, TENNESSEE**

A NEGATIVE FINDING REPORT

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MAR 16 1993
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PREPARED FOR:

**DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT, U.S. CORPS OF ENGINEERS**

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**A Cultural Resources Intensive Survey
of the Ensley Berm Construction Site,
Shelby County, Tennessee**

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

Purchase Order No. 90 M 0776R

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May 16, 1990

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ENCLOSURE

ABSTRACT

This report describes an intensive cultural resources survey of the Ensley Berm Construction Site, prepared under purchase order number 90 M 0776R for the Memphis District, Corps of Engineers, by Garrow & Associates, Inc. A literature and records search was conducted in conjunction with intensive shovel testing and surface inspection of the 100 acre tract. No previously recorded archaeological sites are present in the proposed project area, and no significant cultural resources was located during field investigations. No further archaeological work is recommended.

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I. INTRODUCTION

PURPOSE OF THE STUDY

The following report documents an Intensive Cultural Resources Survey performed for the Memphis District, Corps of Engineers, by Garrow & Associates, Inc. within an approximately 100 acre tract in the Ensley Bottoms, Shelby County, Tennessee. The property is slated as a borrow area for the Ensley Berm Project. The survey was conducted 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 (P.L. 96-95); and the Advisory Council on Historic Preservation, "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800). The purpose of this survey was to determine if any prehistoric or historic archaeological sites or National Register caliber architectural sites had been previously identified in the proposed project area, and to identify any previously unrecorded cultural resources in the project area.

PROJECT LOCATION

The tract under investigation is situated in the Frank C. Pidgeon Industrial Development in the Ensley Bottoms, approximately 3.5 miles south of the TVA Allen Steam Plant near the southern edge of the City of Memphis corporate boundary. A pumping station on the Horn Lake Cutoff, and a complex of abandoned sewage disposal ponds are located immediately to the southeast of the project area. The project area can be located on the Fletcher Lake Tenn-Ark 7.5 minute series quadrangle map (Figure 1).

The project boundary begins at the southwest corner of an abandoned sewage disposal pond, and follows a gravel road in a northwesterly direction for approximately 4,300 feet. From this point, the project boundary runs southeast approximately 3,750 feet to a point approximately 500 feet north of the northern end and center of the sewage disposal ponds. From this point, the survey boundary follows the sewage disposal ponds levee to the beginning point. No borrow will be obtained within 50 feet of the dirt road. The survey area contains approximately 100 acres.

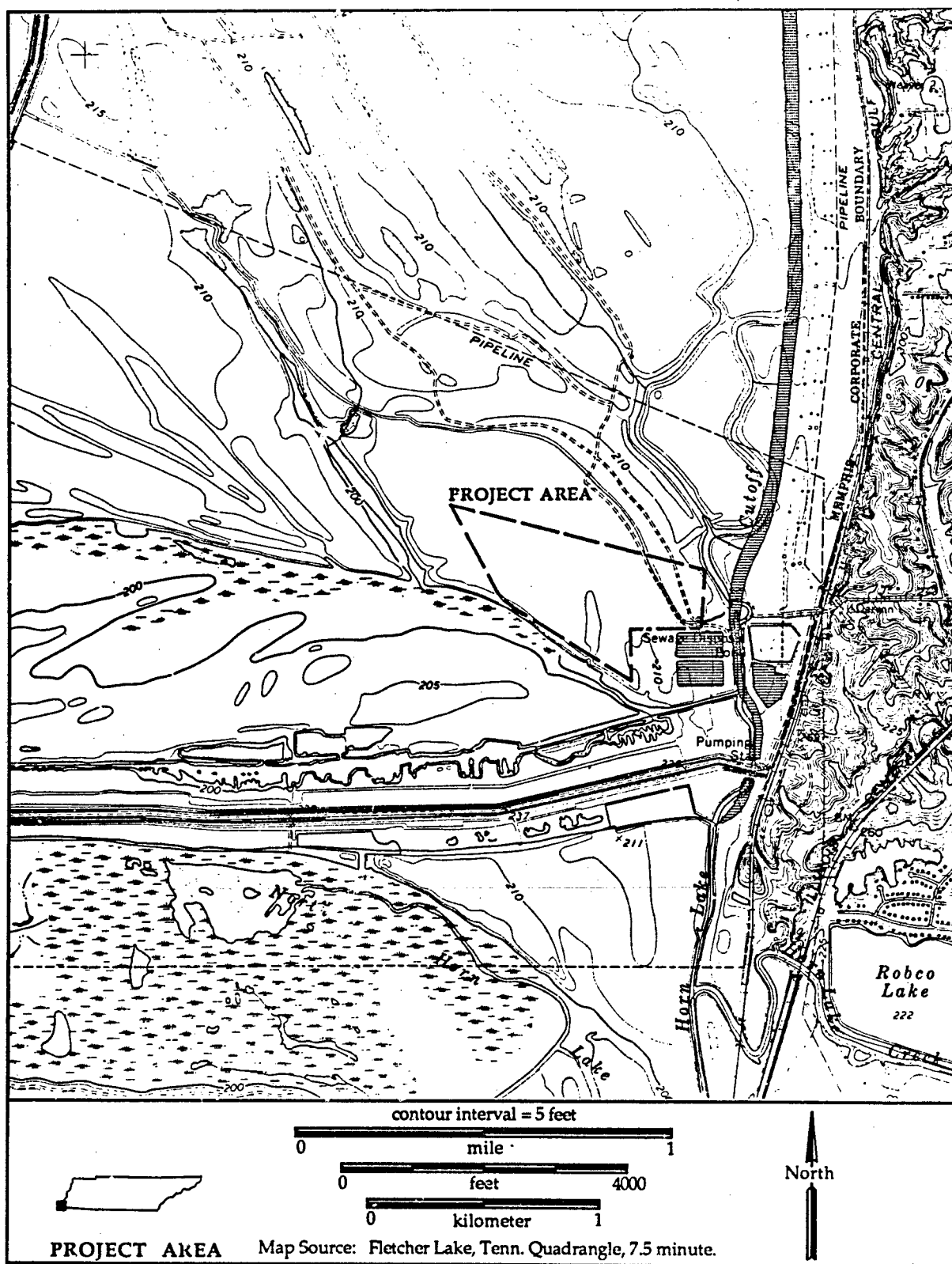


Figure 1. U.S.G.S. Map of Study Area.

OUTLINE OF THE REPORT

Background information on the property was gathered by the authors from the Tennessee Division of Archaeology site files at C. H. Nash Museum on April 14, 1990. Information was also gathered from reports of previous archaeological investigations in the area, and from personal communications with Gerald P. Smith, Director of the C. H. Nash Museum, Memphis, Tennessee. No previously recorded archaeological sites are present in the proposed project area.

Archaeological field investigations were conducted by a two person crew on April 16 and 18, 1990. These investigations included intensive shovel testing and surface inspection of the proposed borrow area. No significant cultural resources were located during the field investigations, and no further archaeological work is recommended.

The following report documents the methods utilized to conduct the study and the results achieved. Chapter II presents a brief overview of the physical environment of the project area. Chapter III presents a general overview of the cultural sequence of the Memphis area, as well as specific historic information pertinent to the project area. Also included in Chapter III is a discussion of previous archaeological investigation in Memphis and the Ensley Bottom area. Chapter IV discusses the general research design used to guide the cultural resources investigation, as well as detailed discussions on the methods employed during the literature and records search and the field investigations. The results of the survey are presented in Chapter V. Chapter VI summarizes the project findings and delineates the project recommendations. The published and unpublished sources cited in the report are listed in the References Cited section. The report concludes with the resumes of the Principal Investigator and Field Director.

II. ENVIRONMENTAL BACKGROUND

CLIMATE

The Ensley Bottoms area is characterized by mild winters, and relatively hot summers, with an average annual temperature of 62 degrees fahrenheit. July is the warmest month with an average of 82 degrees F, and January the coldest month, averaging 42 degrees F. The average date of the last freezing temperature in Spring is March 20, with November 12 being the average first date for freezing temperature in Fall, with an average growing season of 238 days. Rainfall is abundant, averaging 49.7 inches per year. January is the wettest month, with an average of 6.07 inches, while October is the driest, averaging 2.72 inches. Average snowfall is 3.9 inches annually (Sease et al. 1970:2-5).

PHYSIOGRAPHY AND SOILS

This section of Shelby County is characterized by ridges and swales characteristic of Holocene alluvium associated with meander channels along the Mississippi Alluvial Plain (Saucier 1984:10). Steep loess bluffs of Pleistocene age, overlying earlier Tertiary deposits of sand and gravel lie just east of the project area. Here at the western edge of the bluffs, along the river, the loess can reach a maximum thickness of 100 feet.

The Ensley Berm Project is located on the floodplain of the Mississippi River, just west of the base of the loess bluffs. Natural elevations on the project area range from approximately 200 to 210 feet amsl. During the field investigations, it became apparent that the majority of the project area is within an ancient meander scar. With the possible exception of a small area in the extreme eastern corner of the project area which is above 210 feet elevation, the project area probably constituted a backswamp environ in the not to distant past.

The Soil Conservation Service classifies natural sediments in the area of the Ensley Berm Project as belonging to the Tunica-Sharkley-Bowdre association (Sease et al. 1970:6). These soils are characterized as level, dark colored, poorly drained to moderately well drained, clayey soils on low flood plains of the Mississippi River. Soils in this association are formed in clay sediment deposited by still and slowly moving water.

The soils of the eastern portion of the project area are mapped as Bowdre silty clay (Sease et al. 1970:12). This is a moderately well drained soil on the Mississippi

River bottoms and large islands. It consists of 10 to 20 inches of nearly black silty clay underlain by slightly lighter colored, friable, silty or loamy layers. The majority of the project area has soil mapped as Tunica silty clay (Sease et al. 1970:34). Tunica silty clay is a poorly drained soil of the Mississippi River bottoms. It consists of 4 to 8 inches of nearly black silty clay over dark grey clay. Below a depth of 20 to 36 inches loamy material is found. A small section in the western portion of the project area has soil mapped as Robinsonville silt loam (Sease et al. 1970:33). This is deep, well drained soil found on islands and the Ensley Bottoms. Robinsonville silt loam in the Ensley Bottoms has a darker colored surface layer than that in other places. Typically, the surface layer consists of greyish-brown silt loam, very friable, to a depth of 8 to 12 inches. This is underlain by brown to greyish-brown, very friable loams.

FLORA AND FAUNA

A summary of paleobotanical studies in West Tennessee (Delcourt and Delcourt, 1978:16-19; Delcourt et al. 1978, 1980) suggests that a mosaic of oak-pine forest and prairies appears to have dominated the region from about 26,000 to 20,000 B.C. Colder and wetter conditions existed from about 20,000 to 15,000 B.C., as indicated by the increase in spruce (*Picea* spp.) and northern pines (*Pinus* spp.). On Nonconnah Creek, not far from the Ensley Berm Project, the skeleton of a mastodon (*Mastodon* spp.) was recovered with extensive botanical remains, and dated to about 15,000 B.C. (Delcourt et al. 1980). The loess hills east of the Mississippi River offered a less extreme environment that allowed mixed deciduous forest to persist in local patches throughout the full glacial period. A major climatic warming trend starting about 15,000 B.C., and was accompanied by a gradual replacement of the conifers with an increasing number of deciduous species, including oaks (*Quercus* spp.), ash (*Fraxinus* spp.), hickories (*I* spp.), walnut (*Juglans* spp.) and birch (*Betula* spp.). By about 3,000 B.C., the modern warm and dry conditions had been established.

Before this section of Shelby County was cleared for modern agriculture and industrial purposes, the area supported a wide variety of native plants and wildlife. Alluvial ridges and natural levees support red and sweetgum (*Liquidambar styraciflua*), bottom-land oaks (*Quercus* spp.), ash (*Fraxinus* spp.), honey locust (*Gleditsia triacanthos*), and hackberry (*Celtis occidentalis*). Low lying areas and sloughs support cypress (*Taxodium* spp.), water oak (*Quercus nigra*), willow oak (*Quercus phellos*), tupelo gum (*Nyssa aquatica*), birch (*Betula* spp.), cottonwood (*Populus deltoides*), sycamore (*Platanus occidentalis*), willow (*Salix* spp.), shagbark and scalybark hickories (*Carya* spp.), and other water tolerant hardwoods. The loess covered uplands and slopes are predominantly oak-hickory forests, with red, black and white oaks (*Quercus* spp.), elms (*Ulmus* spp.), upland hickories (*Carya* spp.), sweetgum

(*Liquidambar styraciflua*), yellow poplar (*Populus* sp.), and walnut (*Juglans* spp.). Cane could be gathered in the floodplains, while many varieties of shrubs, vines and herbaceous plants inhabited the uplands (Sease et al. 1970).

Native mammals included bison (*Bison* spp.), deer (*Odocoileus* spp.), black bear (*Ursus americanus*), wolf (*Canis* spp.), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), opossum (*Didelphis marsupialis*), red fox (*Vulpes fulva*), gray fox (*Urocyon cinereoargenteus*), beaver (*Castor canadensis*), and squirrels (*Sciurus* spp.). The area also supports a diverse number of reptiles and amphibians. Turkey (*Meleagris gallopavo*) were an important source of food for early inhabitants of the area, as were migratory and resident ducks and geese. Fish, from the larger streams, oxbow lakes and beaver ponds, were also an important food source for prehistoric and historic occupants (Sease et al. 1970).

III. ARCHAEOLOGICAL AND HISTORICAL OVERVIEW

The following is a short summation of the prehistoric sequence for west Tennessee. For a more in depth discussion of local archaeological manifestations and research problems, the reader is referred to Smith (1979), Peterson (1979a, 1979b), and Anderson (1987). The standard reference for archaeology across the Mississippi River in Arkansas is Morse and Morse (1983).

PREHISTORIC BACKGROUND

Paleo-Indian Period

The earliest occupation of this portion of the lower Mississippi River Valley occurred during the Paleo-Indian Period (10,000 - 7000 B.C.). Sparse populations of small hunting and gathering bands are postulated. Early Paleo-Indian sites, identified by fluted Clovis projectile points, are rare in the Mississippi drainage of west Tennessee, due in part to the inhospitable environment associated with heavy glacial runoff following the Wisconsin glaciation, and the heavy mantle of wind deposited loess covering river terraces and uplands. At Kimmswick, Missouri, fluted points were found in direct association with extinct megafauna (Graham et al. 1981). With the possible exception of the Island 35 mastodon (Williams 1954), there are no known associations of this type in west Tennessee. Most Paleo-Indian remains in the area date from the close of this period (8500 to 7000 B.C.) and are associated with the Dalton Culture (Goodyear 1982; Peterson 1979a).

Archaic Period

With the glacial retreat approximately 10,000 years ago, and the subsequent shift to a warmer, dryer climate, Amerindian subsistence and settlement patterns changed to meet the changing environment. A slight increase in population is evident during the Early Archaic Period (7500 to 5500 B.C.). Diagnostic artifacts associated with the Early Archaic include Cypress Creek, Kirk Corner Notched and Stemmed, Palmer, Ecusta, Big Sandy Side Notched, St. Albans and Plevna projectile points, as well as chisel endscrapers. A generalized foraging adaptation by small, highly mobile groups is inferred, although evidence available locally in support of this viewpoint is minimal.

The Middle Archaic Period (5500 B.C. to 2200 B.C.) is somewhat controversial in west Tennessee. Basal notched Eva projectile points, considered to be Middle

Archaic in the Tennessee River drainage, are rare in the Mississippi drainage. A cultural hiatus for this period was proposed by Morse (1975). An alternative interpretation is given by Peterson (1979a). Based on radiocarbon dates from Spring Creek and the Mann sites in the Tennessee Valley, Peterson assigns those sites with Benton projectile points to the Middle Archaic. Projectile points ascribed to this period by Peterson (1979a, 1979b) include Stanley (5500 - 5000 B.C.), Morrow Mountain (5000 - 4200 B.C.), Opossum Bayou/Nonconnah (4200-3500 B.C.) and Benton (3500 - 2200 B.C.). Other researchers, notably Smith (1972, 1979) assign Benton occupations to a latter date during the early Late Archaic.

The Late Archaic Period, from 2200 B.C. to approximately 500 B.C. is marked by a dramatic increase in site density. Smith (1972:111-112) reports a complementary distribution of Bartlett and Benton points in west Tennessee, with the former found predominantly near the Mississippi River, and the latter in the uplands to the east. He suggests possible movements by Benton-using populations from the Tennessee River Valley into the loess hills to the west. This interpretation of complementary distribution is questioned by Peterson (1979b), who proposes a temporal difference between the two projectile point forms. The early part of this period is associated with projectile points such as Pickwick, Ledbetter, Bartlett, Cotaco Creek and Kays.

The time period after 1200 B.C. is referred to as "Transitional Late Archaic" by Peterson (1979a) and as "Poverty Point" by Smith (1972a). Smith (1972a, 1979) has defined a series of Poverty Point influenced phases, based largely on the frequency of varying forms of baked clay objects and projectile point types. These local phases remain distinctive with the introduction of ceramics in the area during the Early Woodland Period. Distinctive projectile points include Lambert, Ponchartrain, Motley, Pickwick, Harris Island, Arlington and Flint Creek.

Woodland Period

The appearance of ceramics in the archaeological record marks the beginnings of the Woodland Period. Early Woodland (500 B.C. to A.D. 100.) ceramic types recognized in the region appear to be drawn from the lower Mississippi delta rather than the Tennessee or Ohio drainages. However, the analysis of Woodland ceramics in west Tennessee has been problematic. The lack of excavated stratified sites is one factor. The use of both the Miller and the Mississippi Alluvial Valley series to describe the ceramics typologically has also added to the confusion. These and other problems of west Tennessee ceramic typology have been extensively discussed elsewhere (McNutt 1979, Jolly 1981; Mainfort 1986b). Given the proximity of the present study areas to the Mississippi Alluvial Valley it seems safe to say that Early Woodland ceramic types would include Tchula variety of Tchufuncta, Twin Lakes, and Comorant Cord Impressed (Smith 1972:117). Associated with the ceramics are small stemmed Mabin-like and

Adena projectile points.

Middle Woodland sites in upland western Tennessee (A.D. 100 to A.D. 500) are generally recognized by fabric impressed, cord impressed and plain pottery with sand and/or grog tempering. It was during this period that mound construction began. Large mound centers such as Pinson, Tennessee (Broester and Schneider 1975, Mainfort 1986a), and Helena, Arkansas (Ford 1963) indicate that Middle Woodland peoples participated in a wide spread exchange network of exotic and domestic goods.

During the Late Woodland Period (A.D. 500 to 900), the upland drainages are apparently abandoned for the richer bottom lands of the major alluvial valleys. Late Woodland sites are identified by their Baytown ceramic assemblage, including Baytown Plain, Mulberry Creek Cord Marked, and Larto Red Filmed. It was during this period that the foundations of the cultural adaptation known as Mississippian appears to have developed in southeast Missouri and northeastern Arkansas. Regional connections between western Tennessee and this center, as well as developments in the Coles Creek culture further south in the Alluvial Valley, are important research questions for further investigations.

Mississippian Period

Beginning around A.D. 900, changes in the frequency of ceramic wares, site size, and ceramic styles herald the beginnings of the Mississippian Period. Highly developed, complex societies with hierarchical community structures and large ceremonial complexes relied on extensive cultivation of rich bottom land soils. The Mississippian occupations present at Chucalissa (40SY1) are divided into the Ensley Phase (radiocarbon dated at AD 1020 $\pm$ 200 years), the Mitchell Phase (AD 1210 $\pm$ 95 years) and the Boxtown Phase (AD 1440 $\pm$ 200 years and AD 1410 $\pm$ 90 years). The final occupation during the Walls Phase occurred during the late 1400s and early 1500s, and may be associated with the province of Quizquiz visited by De Soto in May, 1541 (Smith 1972b, Nash 1960, 1972:ii-vi).

HISTORICAL BACKGROUND

Following the DeSoto expedition in 1541, Indian populations in the lower Mississippi River Valley declined dramatically. Father Marquette and Louis Joliett, traveling the river in 1673, encountered very few villages. One group they did encounter, the Monsoupeleas, are placed by some historians on the fourth Chickasaw Bluff (Roper 1970:16), but available information is so vague as to preclude any real hope of locating them. Indeed, the accounts do not mention actual sighting of a village, and even imply that these may actually have been

travellers from a Northern tribe and not local residents.

In 1739 the French governor of Louisiana, Sieur de Bienville, established Fort Assumption as a base of operations against the Chickasaw towns near present day Tupelo, Mississippi. More than 3,500 French regulars and militia, Canadians and Indians were quartered there--the largest European army ever assembled on the North American Continent up to that time (Roper 1975). Fort Assumption is thought to have been located at DeSoto Park (40SY5), just north of the study area. After seven months, the campaign was abandoned and the fort burned (Harris 1959).

The Chickasaw Indians used the bluff as access to the river and their hunting grounds in Arkansas. After the abandonment of Fort Assumption, they occasionally visited the area to prey upon Spanish river traffic and to meet boats and traders (Roper 1970:19). In 1795, the Spanish negotiated with the Chickasaw for the construction of Fort San Fernando de las Barrancas, thought to have been located near the confluence of the Mississippi and Wolf Rivers in north Memphis (Smith 1982). The Spanish fort was replaced by the American Fort Adams in 1797. In 1798, a new American fort was constructed on the south bluffs in the vicinity of old Fort Assumption. This first Fort Pickering saw such notable Americans as Aaron Burr, Meriweather Lewis, John James Audubon and Andrew Jackson. Several white families and a large number of Indians settled around the fort, and in 1802 a trading post was established (Capers 1966:19). The trading post continued to operate until 1822, by which time developments leading to the founding of Memphis were well underway.

PREVIOUS ARCHAEOLOGICAL RESEARCH

As of 1990, a number of archaeological investigations, both prehistoric and historic, have been conducted in the vicinity of Memphis. Early investigations were primarily concerned with Mississippian mound groups and large prehistoric sites in the lower Mississippi River Valley (Moore 1911; Thomas 1894). Cultural chronologies, especially during the Mississippian and Woodland periods, were the subject of investigations by Phillips, Ford and Griffin (1951), Phillips (1970), and Griffin (1952). Studies into the late prehistoric period continues with research conducted at the Chucalissa Indian Village and C. H. Nash Museum (Nash 1960, 1972; Nash and Gates 1962; Dye 1976; Lahren and Berryman 1984; Smith 1969, 1972, 1973, 1987b).

Archaeological investigations of historic and prehistoric cultural resources conducted in Memphis include excavations in search of Fort San Fernando (Smith 1982), salvage excavations at Adams and Riverside (McNutt and Smith 1982), excavations at the Mageveny House and the Gerber Annex (Weaver and

Weaver 1985), reconnaissance surveys near De Soto Park (Weaver 1979; Weaver and Bowman 1981), historical documentation and site reconnaissance at the Georgia Street Yards (Smith and Weaver 1985), a document search and site reconnaissance at the Memphis Navy Yards (Council 1985), and a literature search for Presidents Island (Weaver 1987). Recent excavations of a Civil War fort in Germantown are reported by Smith (1986, 1987a). Previous archaeological investigations at the proposed Peabody Place Mall and Office Complex include a preliminary literature search by Jolly (1984), Phase I testing by Garrow & Associates, Inc. (Joseph 1986a) and Phase II testing by Garrow & Associates, Inc (Weaver 1988). Archaeological surveys of the neighboring Wolf and Loosahatchie watersheds are reported by Peterson (1979a, 1979b). Other surveys for archaeological, architectural and historic resources in close proximity to the present project area are reported by Commonwealth Associates (1979, also see 1980a, 1980b, 1980c, 1981) and McNerney (1979).

IV. RESEARCH DESIGN AND METHODOLOGY

RESEARCH DESIGN

In lieu of a state wide research design, this project was conducted under a general research design that is detailed in Garrow & Associates' technical proposal for the Jacksonville District open-end contract (Garrow & Associates, Inc. 1988:12-15). Four general research areas were delineated in that proposal that could be applied to reconnaissance, survey, and data recovery level investigations. Those research areas are briefly 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 diachronic change in settlement to determine how cultures of a specific setting evolved in response to changes in the natural environment and cultural atmosphere. 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.

Major areas of diachronic change in settlement are expected when cultivation becomes a major subsistence strategy, when complex societies arise, when European intrusion causes dispersal and refugee strategies, when the conquering of the Indians opens the backcountry for European settlement, when major plantations cluster the population in rural centers, when family agricultural production becomes economically important, and when industrialization draws populations to focal cities. 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 relationships 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 . . . the workers; and of technical to domestic spheres, all provide insights to the cognitive aspects of extant cultural systems.

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 the social organization of the local cultures, the subsistence base of these groups and their efficiency in the areas in question, and the population of these groups. Additionally, major factors involved in the European-Indian contact was weaponry, mobility, and resistance to non-native diseases.

The results from reconnaissances, surveys, and mitigations 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 down played 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 are cultural resources and must be carefully documented.

Site Formation and Preservation Factors

While it is important to utilize archaeological data to address cultural processes, mitigation, survey and reconnaissance results can also be utilized to generate a detailed interpretation of the natural and cultural factors responsible for differential site preservation. It is important that each project critically evaluate the factors which may have served to prevent or promote site preservation in that particular area. The eventual outcome of such studies will be a management tool of high utility, which will also allow planners to predict areas in which well preserved sites are most likely present.

An awareness of site formation processes will also prevent misinterpretation of survey results. As a growing corpus of site formation data is built through surveys and reconnaissances across the southeast, it will be possible to critically evaluate the discovery methods currently in use. The ultimate goal of this research -- beyond generally characterizing the site formation processes in various environmental settings -- is to provide a means for the more efficient discovery, evaluation, and protection of the area's cultural resources.

ARCHIVAL AND FIELD METHODS

Background and Literature Search

The background and literature search was conducted 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. This portion of the project investigations was completed by the Field Director on April 14, 1990, before the beginning of field work. A review of the regional archaeological literature and pertinent State of Tennessee site files was conducted at the C. H. Nash Museum, Memphis, Tennessee. In addition, Garrow & Associates, Inc. maintains extensive libraries in Atlanta and in Memphis, which were also consulted.

Field Methods

The primary goal of the field research was to assess the likelihood that potentially significant sites existed in the survey area that would warrant mitigation through avoidance or additional testing. Field techniques were designed to allow determination of the existence and nature of subsurface deposits, areal extent of any site encountered, and to provide chronological and functional data for sites if possible.

The field work phase was conducted on April 16 and 18, 1990. At the time of this survey, the entire proposed borrow area was planted in winter wheat. These plants had an average height of 18 inches, allowing poor surface visibility.

The survey was conducted utilizing a two person crew, including the field director and a field technician. Given the poor surface visibility, the entire survey area was shovel tested at 30 meter intervals. Shovel tests were excavated to 50 cm below surface. Soil from all shovel tests was screened through 1/4 inch hardware cloth. When artifacts were recovered in a shovel test, additional shovel tests were placed at 10 meter intervals out from the initial positive test in a cruciform pattern until two negative tests were encountered. The only areas within the project that were not shovel tested were water covered surfaces and areas within 50 feet of the gravel road. Soils from all shovel tests were described by texture and Munsell categories.

V. PROJECT RESULTS

The following chapter presents the results of the literature search and field work conducted for the Ensley Berm Project. Each aspect of the study is discussed separately below.

RESULTS OF THE BACKGROUND AND LITERATURE SEARCH

A review of the Tennessee archaeological site files indicate no recorded prehistoric or historical sites within the project area. However, a number of prehistoric sites are recorded in close proximity to the project area. Table 1 provides site information on these archaeological sites for which site forms were available. Of particular interest are sites 40SY8 and 40SY74. 40SY8 was a Mississippian period village located east of Horn Lake cutoff at the base of the bluff, approximately 300 m outside the project area. The site was destroyed by channelization, railroad construction, and construction of sewage lagoons. Site 40SY74, a reported Woodland village located south of the levee and pumping station, approximately 1500 feet outside the borrow limits. As explained below, occupation at these sites does not extend into the present project area.

It should be noted that the site file data demonstrate a tendency for prehistoric occupations in the vicinity of the project area to be located on or near the bluffs. Ten of the eleven sites located in the immediate project area (Table 1) are located on or at the base of the loess bluffs.

RESULTS OF THE FIELD WORK

Data collection at the Ensley Berm Project area included excavation of 293 shovel tests. Only four (4) of these shovel tests produced cultural materials. The remainder were sterile. Descriptions of these four shovel tests is provided below.

Shovel test 62 was located 60 meters west of the fence surrounding the dry sewage disposal ponds (Figure 2). This test produced a rusted fragment of a recent farm implement. Soils recovered from the shovel test consisted of dark greyish brown (10YR4/2) clay.

Shovel test 163 was located on the eastern edge of the project, 40 meters north of the fence surrounding the dry sewage disposal ponds (Figure 2). One small piece of an unidentified green twisted metal was recovered. The artifact is obviously recent in age. Soils recovered from the shovel test consisted of a brown (10YR5/3) sandy loam.

TABLE 1. Archaeological Sites in the Vicinity of the Project Area.

Site: 40SY1 (Chucalissa)

Type: Mississippian period mound complex with large truncated pyramidal mound, large conical mound with burials, and various features surrounding a central plaza.

Discussion: Discovered in 1940 when Civilian Conservation Corps workers cleared the area along the bluff edge for the development of T.O. Fuller State Park. Approximately 187.5 acres set aside as archeological park. T.M.N. Lewis of the University of Tennessee, George Lidberg and Charles Nash excavated until WWII. Resumed in 1952 by Memphis Archaeological and Geological Society under K. L. Beaudoin. Extensive excavation under Nash in 1955. Transferred to Memphis State University in 1962 to supervise with administration by the State.

Site: 40SY2

Type: Middle Mississippian village

Discussion: This site was destroyed by levee construction in 1959. Recorded by C. H. Nash in 10/26/56. A small collection of 89 sherds and one chipped and polished celt fragment is curated at C. H. Nash Museum, Memphis.

Site: 40SY5 (DeSoto Park)

Type: Mound complex with plaza, possibly Late Woodland through Mississippian periods. Civil War fort.

Discussion: Two mounds presently exist on bluff edge, though 1843 plat of the Town of Fort Pickering show seven. Recorded by C. Nash, 10/29/56. Preliminary investigations by Weaver and Bowman (1981).

Site: 40SY8

Type: Middle Mississippian village

Discussion: Little data available. Site reported by school, no date. Destroyed by railroad.

Site: 40SY73

Type: small Woodland village

Discussion: In 1966 no evidence of the site was left. Recorded by Nash, no date. The site was probably occupied ca. 700 A.D. when Mississippi River flowed against bluff. A small collection is curated at C. H. Nash Museum, Memphis.

Site: 40SY74

Type: small Woodland village and "area"

Discussion: A pre-Mississippian pottery bearing site, with no collection available. Recorded by Nash, no date.

Site: 40SY108

Type: Woodland

Discussion: Little information on site card. Located at base of the bluff. Reported by Hesse 3/4/67.

Site: 40SY204

Type: early Mississippian village

Discussion: A dark midden stain was noted along a road cut through the site. Ensley sherds and flint chips were recovered. Recorded by Brister and Smith 12/1/70.

Table 1 (Cont'd)

Site: 40SY205

Type: early Mississippian village

Discussion: Ensley sherds and flint chips were recovered. Area is described as being heavily pot-hunted. Reported by Brister and Smith 12/1/70.

Site: 40SY279

Type: Mississippian

Discussion: No information on site card. One sherd is available at C. H. Nash Museum from the site, which is plain coarse shell tempered.

Site: 40SY309

Type: Archaic hunting site

Discussion: Located at crest of the bluff. No midden found. Reported by J. Hesse, M. Haggitt, and R. Young 4/3/75.

Shovel test 182 was located at the top of a meander scar rise, approximately 40 meters north of the fence surrounding the dry sewage disposal ponds (Figure 2). This test produced two small fragments of burned earth. Because these burned fragments were similar to fired clay daub, six (6) additional shovel tests were excavated in a cruciform pattern at ten (10) meter intervals to the north, east and south of shovel test 182 (the area to the west had standing water). These tests failed to produce any burned earth or other cultural material. Soils in this area consist of a brown (10YR 5/3) sandy loam.

Shovel test 223 was located in the center of a wide meander scar 100 meters northwest of the dry sewage disposal ponds (Figure 2). This shovel test contained one artifact, a shear pin for a machine. It is recent in origin. Soils in the test were dark greyish brown (10 YR 4/2) clay.

One small stoneware sherd was noted, but not collected, near the road at the western edge of the project area (Figure 2). The sherd is buff stoneware with a Bristol slip on the interior and exterior, and probably represents scattered refuse from a late nineteenth to early twentieth century occupation somewhere in the vicinity. The artifact may also have been recently brought into the area and disposed of along the access road.

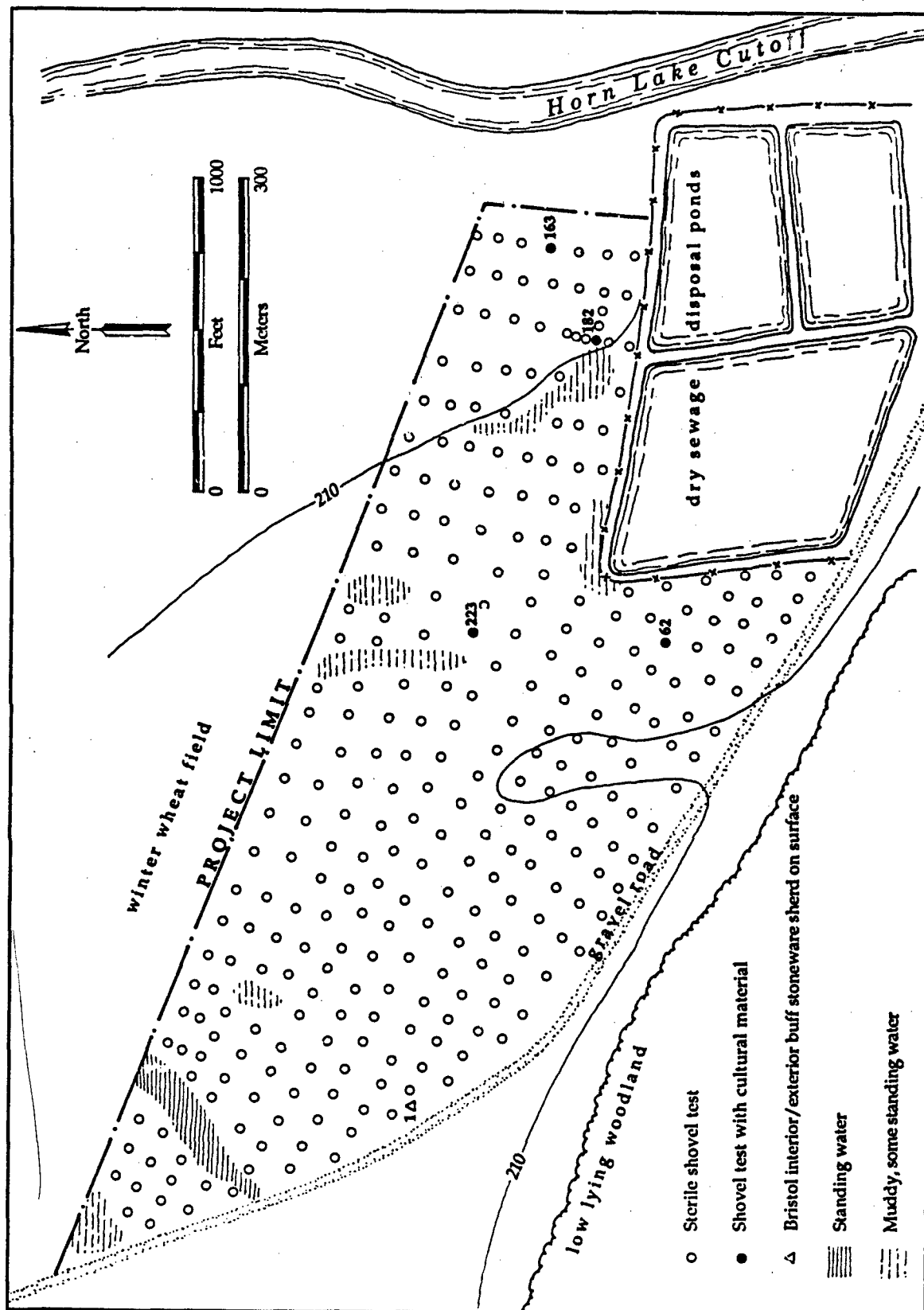


Figure 2. Map of Ensley Berm Tract.

V. SUMMARY AND MANAGEMENT RECOMMENDATIONS

A background and literature search was conducted to located previously recorded sites within or adjacent to the project location. Intensive shovel testing was conducted on a 30 meter grid within the project area, with 293 shovel tests advanced on the 100 acre borrow tract.

The literature research showed no previously recorded sites exists within the proposed borrow area. The intensive shovel testing also did not indicate the presence of historic or prehistoric site occupation or use of the project area. There is only a very low probability of buried sites, given that the majority of the project location is within a filled river channel. No further archaeological work is recommended.

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APPENDICES

APPENDIX 1: SCOPE OF WORK

DESCRIPTION/SPECIFICATIONS

A CULTURAL RESOURCES INTENSIVE SURVEY OF THE ENSLEY BERM PROJECT, ENSLEY, SHELBY COUNTY, TENNESSEE

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, and Intensive Survey at the Ensley Berm Construction Site, Shelby County, Tennessee.

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 architectural 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 implementation of scientific research and other professional techniques and procedures. Mitigation of losses of cultural resources includes, but is not limited 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 time(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 located in the Frank C. Pidgeon Industrial Development on Vice President's Island No. 46. It can be located on the Fletcher Lake Tenn-Ark 7.5 minute quadrangle map.

The project begins (see attached blueines and map) at the southwest corner of the sewage disposal ponds (point "A") and follows the gravel road in a northwesterly direction for approximately 4,300 feet to point "B". At the north end and center of the sewage disposal ponds, point "C", go north 500 feet to point "D". Connect points "E" and "F" to close the survey area. Points "A" and "C" are connected by the sewage disposal ponds levee. Survey will begin 50 feet away from the dirt road.

The survey area contains approximately 100 acres.

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 precede 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 construction 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 visibility 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 $\frac{1}{2}$ " 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 blue-line (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 Contractor 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.

5. GENERAL REPORT REQUIREMENTS.

5.1. 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.

5.2. 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.

5.3. 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 interviews 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.

1. References (American Antiquity Style).

m. Appendices (Maps, Correspondence, etc.). A copy of this Scope of Work and, when stipulated by the Contracting Officer, review comments shall be included as appendices to the final report of investigations.

5.4. 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 discrete sections so long as they are readily discernable to the reader.

5.5. 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).

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

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

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

5.9. 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.

5.10. 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.

5.11. 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.

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

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

5.14. Generally, all measurements should be metric.

5.15. 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.

5.16. 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.

6. SUBMITTALS.

6.1. Unless otherwise stipulated in the delivery order, the Contractor shall submit 2 copies of the draft report, one unbound original and 10 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.

6.2. 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). Blue-line drawings will be supplied by the Government.

6.3. 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.

6.4. 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.

6.5. 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 30 calendar days of the end of fieldwork.

6.6. 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.

6.7. Additional submittals may be required.

7. SCHEDULE.

7.1. The Contractor shall, unless delayed due to causes beyond his control and without his fault or negligence, complete all work and services under this contract within the following time limitations.

<u>Activity</u>	<u>Completion Time (in calendar days beginning with acknowledged date of receipt of notice to proceed)</u>
Begin Survey	2
Field work completed	10
Management Summary	13
Submittal of Draft Report	30
Government Review	40
Submittal of Final Report	55

7.2. 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 (50 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. PERFORMANCE.

8.1. If the Contractor's work is found to be unsatisfactory and if it is determined that fault or negligence on the part of the Contractor or his employees has caused the unsatisfactory condition, the Contractor will be liable for all costs in connection with correcting the unsatisfactory work. The work may be performed by Government forces or Contractor forces at the direction of the Contracting Officer. In any event, the Contractor will be held responsible for all costs required for correction of the unsatisfactory work, including payments for services, automotive expenses, equipment rental, supervision and any other costs in connection therewith, where such unsatisfactory work as deemed by the Contracting Officer to be the result of carelessness, incompetent performance or negligence by the Contractor's employees. The Contractor will not be held liable for any work or type of work not covered by this contract.

APPENDIX 2: RESUME OF PRINCIPAL INVESTIGATOR

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 U.S. Army Engineer District, Jacksonville Corps of Engineers. Garrow & Associates, Inc., Atlanta.

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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.

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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.

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

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

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- 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.

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- 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.

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- 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.

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- 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.

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- 1985 *A Cultural Resources Survey of the Proposed One Riverside Drive Condominiums, Memphis, Tennessee.* Report submitted to the Pickering Firm, Memphis, Tennessee.

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- 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.

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- 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.

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