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ABOVE LAKE NO. 9

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REPORT DOCUMENTATION PAGE

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1. AGENCY USE ONLY (leave blank)		2. REPORT DATE APRIL 1983	3. REPORT TYPE AND DATES COVERED Final
4. TITLE AND SUBTITLE Above Lake No. 9		5. FUNDING NUMBERS DAW66-83-M-0524	
6. AUTHOR(S) Richard P. Kandare Timothy C. Klinger Robert F. Cande		8. PERFORMING ORGANIZATION REPORT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Historic Preservation Associates			
9. SPONSORING MONITORING AGENCY NAME(S) AND ADDRESS(ES) Dept. of the Army Memphis District Corps of Engineers B-202 Clifford Davis Federal Bldg. Memphis, TN 38103		10. SPONSORING MONITORING AGENCY REPORT NUMBER 128	
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION AVAILABILITY STATEMENT Unlimited		12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) Four newly discovered archaeological sites were recorded. Three of these contain historic components with prehistoric activities represented at all but 15FU66. No further work is recommended at 15FU65 and 15FU66. Additional testing to assist in significance assessments is recommended for the entire corridor.			
14. SUBJECT TERMS			15. NUMBER OF PAGES 54
17. SECURITY CLASSIFICATION OF REPORT			16. PRICE CODE
18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT	

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Cultural Resources Reconnaissance of Item Nos. 2 and 3
Above Lake No. 9, Reelfoot Lake, Fulton County, Kentucky

by

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April 1983

Historic Preservation Associates Reports 83-3

Report submitted to the Department of the Army, Memphis District,
Corps of Engineers, in accordance with Contract No. DACW66-83-M-0524

ABSTRACT

The investigations described in this report focus on the reconnaissance level survey of Item Nos. 2 and 3 above Lake No. 9, Reelfoot Lake, Fulton County, Kentucky. A 15% sample of the 5.99 mi corridor resulted in the discovery of four newly recorded archeological sites (15FU55, 15FU64, 15FU65 and 15FU66). Three of these contain historic components (15FU55, 15FU65 and 15FU66) with prehistoric activities represented at all but 15FU66. No further work is recommended at 15FU65 and 15FU66. Additional subsurface testing to assist in significance assessments is recommended at 15FU55 and 15FU64. An intensive survey is recommended for the entire corridor and National Register documentation for 15FU3 should be assembled.

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BACKGROUND AND PURPOSE OF THE REPORT

In January 1983, the Memphis District of the U.S. Army Corps of Engineers (COE) asked Historic Preservation Associates (HPA) to submit a proposal for a reconnaissance level investigation of Item Nos. 2 and 3 above Lake 9, Reelfoot Lake, Fulton County, Kentucky. On 14 January 1983, the HPA proposal was forwarded to the Memphis District. Purchase Order DACW66-83-M-0524 was issued 19 January 1983 and was received by HPA on 25 January 1983.

The purpose of this report is to document the results of the cultural resources reconnaissance as required by the Scope of Work (Appendix A). The structure and content of this report adhere to the guidelines contained in Specifications for Archaeological Reports (dated 15 March 1979) as prepared by the Kentucky Historic Commission (Melton and Clay 1979), in The Management of Archeological Resources: The Airlie House Report (McGimsey and Davis 1977) and in the contract Scope of Work (Para. C-6).

All archeological material collected and copies of all related records generated as a result of these investigations are being curated by the Archaeology Laboratory, Murray State University, Murray, Kentucky.

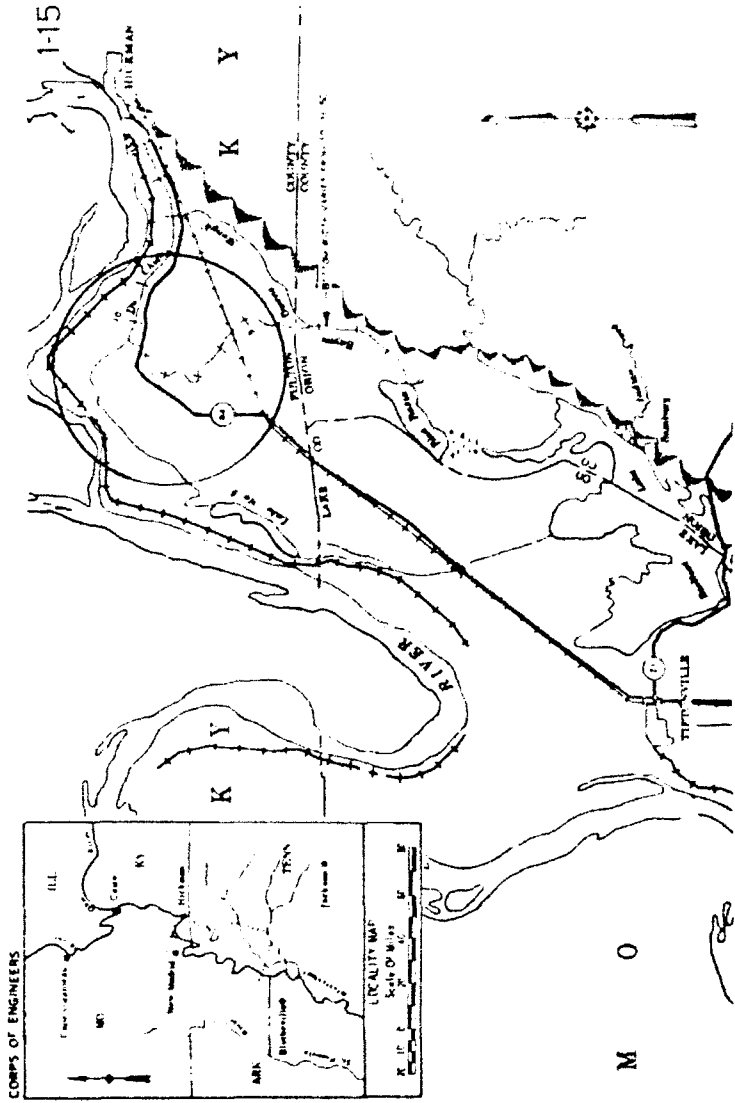
Project Location and Dates of Investigations

The project consists of two alternate routes and generally lies north and east of the community of Sassafras Ridge in Fulton County, Kentucky (Figure 1). The 600 ft wide corridor begins 1.5 mi north of Sassafras Ridge at Pond Slough and continues for 4.17 mi on a route along the northern and eastern edges of Fish Pond and then south to a presently authorized alignment (Alternate 1 in Figure 2). Alternate 2 is a similar 600 ft corridor which borders the southern edge of Fish Pond for 1.82 mi (Figure 2). Both alternates total 5.99 mi. The field survey took place over two days between 10 and 11 February 1983.

Project Sponsor and Participants

The overall project sponsor is the Memphis District of the U.S. Army Corps of Engineers. The Contracting Officer for the program is Ms. Glenda W. Tackett and the archeological liaison for the District is Mr. Jimmy D. McNeil.

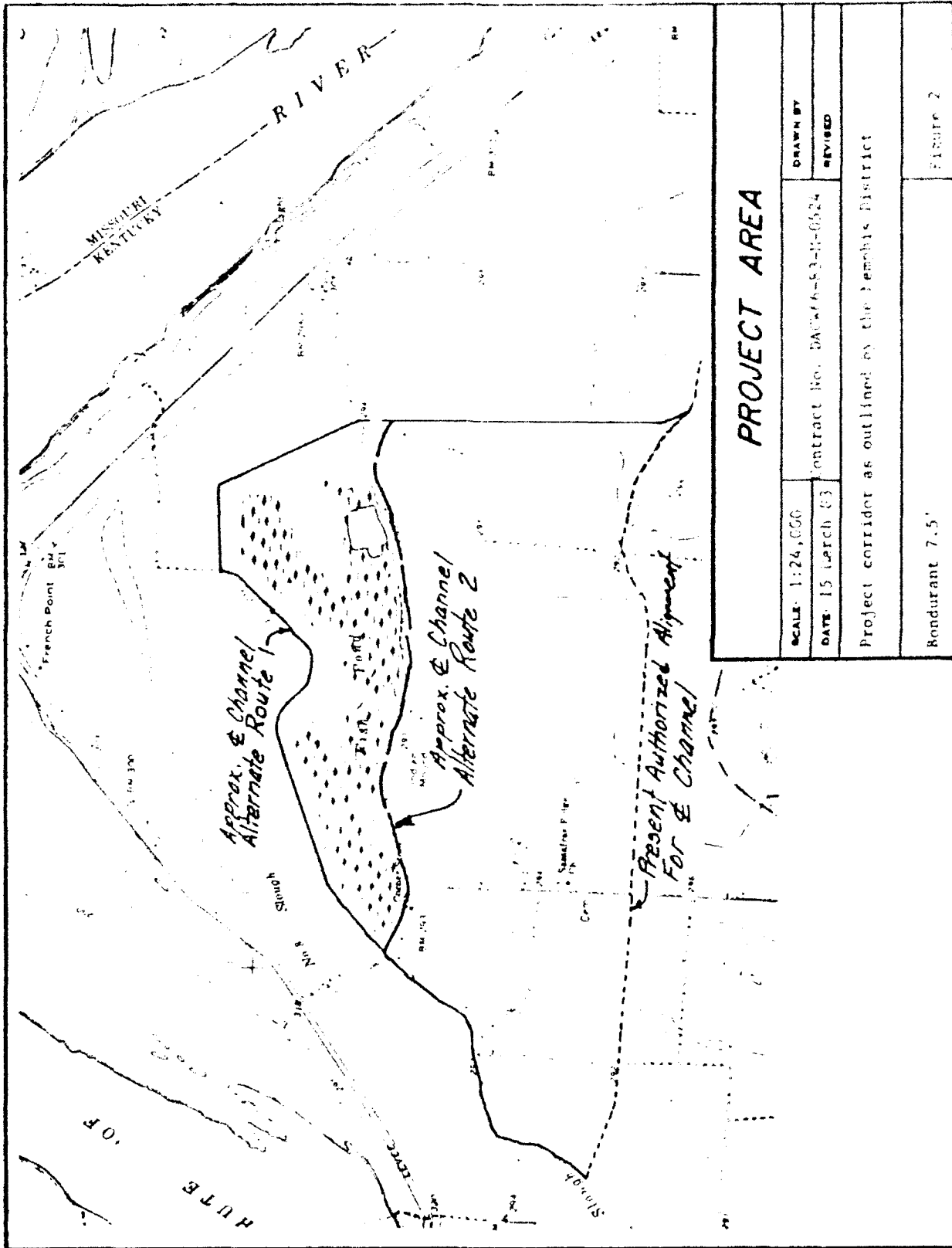
Historic Preservation Associates has carried out the work reported on here. Several individuals participated in these investigations and a complete roster of their qualifications, responsibilities and contributions is included in Appendix A. Mr. Timothy C. Klinger served as Principal Investigator. Mr. Robert F. Cande and Mr. Richard P. Kandare conducted the fieldwork and background research. Laboratory analysis was conducted by Cande with the assistance of Mr. Roy J. Cochran, Jr. Mr. Scott A. Jones and Ms. Beryl Rosenthal also assisted in the preparation of the report.



MISSISSIPPI RIVER COMMISSION
 MISSISSIPPI WATER
 REELFOOT LAKE AREA
 PROJECT NO. 100-100-100
 DRAWN BY
 REVISIONS

GENERAL LOCATION

SCALE: As shown	DRAWN BY
DATE: 15 March 51	REVISIONS
Contract No. DACW66-52-11-0524	
General location of the Reelfoot Lake area	
Figure 1	



PREVIOUS RESEARCH AND ARCHEOLOGICAL AND
HISTORIC BACKGROUND

Archeological research in Fulton County, Kentucky has been undertaken in two basic episodes. The first includes Funkhouser and Webb's 1932 survey, excavations at other nearby sites in the 1930s, and the development of cultural sequences based on ceramic classification (Phillips 1970; Clay 1961). The second is dominated by cultural resource management studies sponsored by federal agencies in order to comply with various historic preservation and environmental legislation. Despite a number of archeological surveys conducted in the county, little is known of the actual settlement-subsistence patterns of the various aboriginal groups who lived there during prehistoric and historic times. A similar paucity of information characterizes the historic period. Except for the work by Schock, Langford and Alvery (1980) there has been virtually no controlled subsurface testing or excavation on any site in Fulton County. What is known archeologically about this area of southwest Kentucky is based on controlled and uncontrolled surface collections, limited subsurface testing, results of pot hunting and collector activities, general field observations and a recent program of remote sensing.

The earliest formal archeological research in this part of the country was conducted under the direction of Cyrus Thomas (1894) for the Bureau of American Ethnology. The BAE began its survey of earthen structures throughout western Kentucky and surrounding areas in an attempt to identify the cultural affiliations of the mounds. Apparently overlooked by Thomas and his associates were many of the mound complexes in Fulton County. The BAE did record a number of mounds around Reelfoot Lake in nearby Obion County, Tennessee as well as several in Hickman County, Kentucky.

While Thomas seemed to hit on all sides of Fulton County, it was C. B. Moore who actually provided the first documented investigations in the area (1916:504-505). Moore's work in western Kentucky took him to two sites including the "Mounds of the Chaney Place, Hickman County" and the "Campbell Mound" in Fulton County (Moore 1916:493). It was Moore's investigations at the Campbell Mound that is of interest in relation to the District's current project area. Moore described his work as follows (1916:504-505):

About six miles westward from Hickman, Ky., on the property of Mr. T. M. French of that place, is the Campbell mound. This mound, formerly quadrilateral with a summit-plateau, is 18 feet in height and 225 feet by 160 feet in diameters of base. The remains of a causeway, now largely plowed away, is evident on one side of the mound. As this mound is a refuge in time of flood, the tenant on the property was not willing to have trial-holes put down in the summit-plateau, where the soil seemed dark and there might have been superficial burials.

Near the mound were two slight rises of very restricted area in the cultivated field in which the mound stands. We were permitted to put down eight trial-holes in these, five of which, in one of them, yielded nothing.

The remaining three holes, dug into the other rise, came upon two burials as follows:

Burial No. 1, 2 feet 4 inches from the surface, was a deposit of calcined fragments of human bones, roughly circular, about 1 foot 3 inches in diameter and 5 inches in thickness. With these were fragments of sheet-copper showing the effect of fire, presumably parts of an ornament.

This deposit of cremated bones had been placed on a fragment of a very large vessel of earthenware. In places on this large sherd other fragments of pottery had been deposited, making, here and there, a double thickness.

Nine inches below the pottery was the bottom of a concave fire-place on which was charcoal. The surrounding earth showed the effect of fire. Here and there in the soil between the base of the fire-place and the large fragment of earthenware above it, were fragments of calcined bone, but far too few in number to be termed a deposit. It seemed as if the cremation might have taken place on the fire-place and the fragments of calcined bones been gathered and placed in the pottery receptacle, leaving some of them still scattered in the ground.

Burial No. 2, 3 feet 2 inches deep, was a bunched burial composed of the bones of one skeleton. Alongside this burial was an undecorated vessel of lenticular shape, possibly a rude attempt at a shell-form. In this vessel were some fragments of bones having belonged to a young infant. The vessel, however, was far too small to have contained the skeleton of even so young an infant as the bones found would indicate, and cannot be considered to have been an urn-burial. The remaining bones were not found, and we think it likely that the skeleton of the infant, with the exception of such parts as may have fallen into the vessel, was cut away when the bunched burial was interred, the infant's burial, in this event, of course, having preceded the other.

In the soil near the surface, apart from human remains, was a large fragment of a vessel, the remainder of which apparently had been plowed away. This vessel, originally a bottle, the body consisting of four lobes, had been coated with red pigment. This is the farthest north that we have found earthenware giving evidence of such excellence of design and coloring.

Although there has been no citation of C. B. Moore in any of the archeological literature focusing on the area, there seems little doubt that the Campbell Mound he describes is known today as Sasafress Ridge (15FU3).

Further archeological research in Fulton County was initiated in the early 1930s when Funkhouser and Webb (1932) undertook a survey of important archeological sites in Kentucky. According to Funkhouser and Webb (1932:127-129):

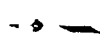
. . . Fulton County is one of the richest and most interesting of all of the counties of the state. It is the area of remarkable pottery, unusually fine flint, imposing mounds and intriguing prehistoric fortifications and canals, many of which have been often mentioned in archaeological literature. Only a few of the most important can be

mentioned in this report, since the authors have had the opportunity of making only a most superficial survey of the region. There is no question, however, but that this area was occupied in prehistoric times by groups of aboriginies large in numbers and high in culture. Some of the most interesting and valuable of all the artifacts ever found in Kentucky have come from Fulton County. The remarkable pieces from the W. P. Taylor collection, including the turkey bowl, the beaver bottle, the effigy pottery, the flint spades and the unusual ceremonial stones which are described and figured by Bennett Young [Young 1910:139-156] all came from this territory and other fine local collections, including that of Mr. George L. Alley of Fulton are from the same area.

Of the thirteen sites identified by Funkhouser and Webb for Fulton County two are located near the project area (sites numbered 3 and 12 in Figure 3). Site #12 is said to consist of "[s]everal mounds. . . nine miles southwest of Hickman, [which] have been partly excavated and have yielded skeletons and artifacts (1932:133)." Additional research was being conducted in other parts of western Kentucky at this time including excavations at Wickliffe (King 1936; Lewis 1932) and at McLeod Bluff (Webb and Funkhouser 1933). Funkhouser and Webb (1932:130-131) provide the following description of their site number 3 (Moore's Campbell Mound)(Figure 3 now recorded as 15FU3):

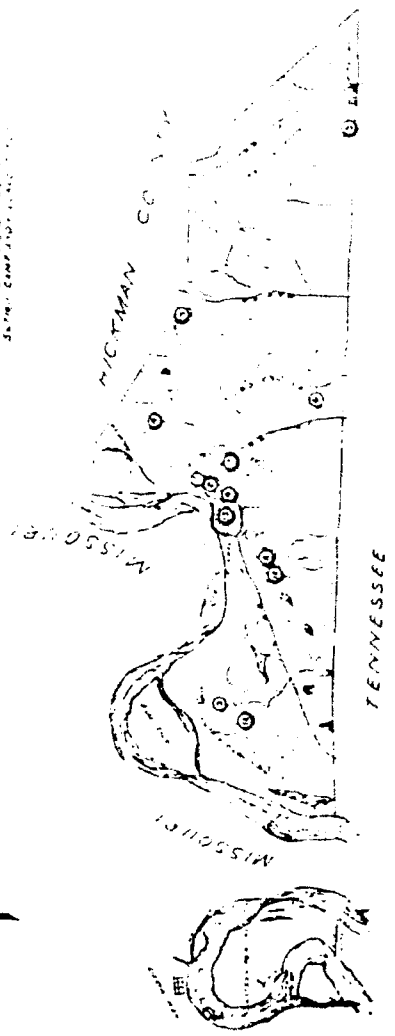
"Sassafras Ridge" is one of the largest and finest mounds in the state of Kentucky. It is ovate in shape, two hundred and fifty yards in circumference and fifty feet high and is located in the Mississippi Bottoms eight miles west of Hickman and within three-quarters of a mile of the Mississippi River. It is flat on top which has often been in cultivation and has been dug into superficially many times but this cultivation and the shallow excavations have made little impression on its stupendous size or curious sugar-loaf contour. Yet from this mound have been taken innumerable artifacts, including some of the finest specimens in the W. P. Taylor collection. The surface of the fields for a considerable distance around its base is still covered with flint chips, pot shards and occasional complete and perfect artifacts. . . It is the largest single mound in Fulton County.

From the 1930s until the 1970s there appears to be a void in the archeological literature for this part of the valley. Phillips, Ford and Griffin's survey of the Lower Mississippi Valley (LMS) did not extend this far into the valley's upper reaches (1951:Figure 2). R. Berle Clay took up where the LMS left off by conducting a preliminary ceramic survey of then known sites within the Mississippi Valley in Kentucky (1961). Among the collections Clay analyzed was one made at Sassafras Ridge in 1957 by staff of the Department of Anthropology at the University of Kentucky (Table 1 from Clay 1961:33). Phillip Phillips used information supplied to him by the Michigan-Yale survey of 1950-1952 to set up a cultural sequence in the Cairo Lowland area based on the quantity and distribution of ceramics in various stratigraphic components. The data which these sequences are based on, for the most



LEGEND

1. Major sites
2. Minor sites
3. General area
4. Survey area



FULTON CO.
ARCHAEOLOGY
Scale of 1:25,000

MAJOR SITES	
SCALE: As shown	DRAWN BY
DATE: 15 March 83	REVISOR
Contract No. DACW66-83-11-0524	
Fulton County archeological sites noted by Funkhouser and Webb (1932:128)	
Figure 3	

TABLE 1
Surface Artifacts Collected from 15FU3, Sassafras Ridge*

Surface Collection -- 1957

Analysis -- 1961

Shell Tempered Sherds		
Neeley's Ferry Plain	9	13.8%
Wickliffe Plain	1	1.5%
Clay Tempered Sherds		
Baytown Plain	50	79.6%
Wickliffe Plain	3	4.6%
Mulberry Creek Cordmarked	1	1.5%
	64	101.0%

*from Clay 1961:33

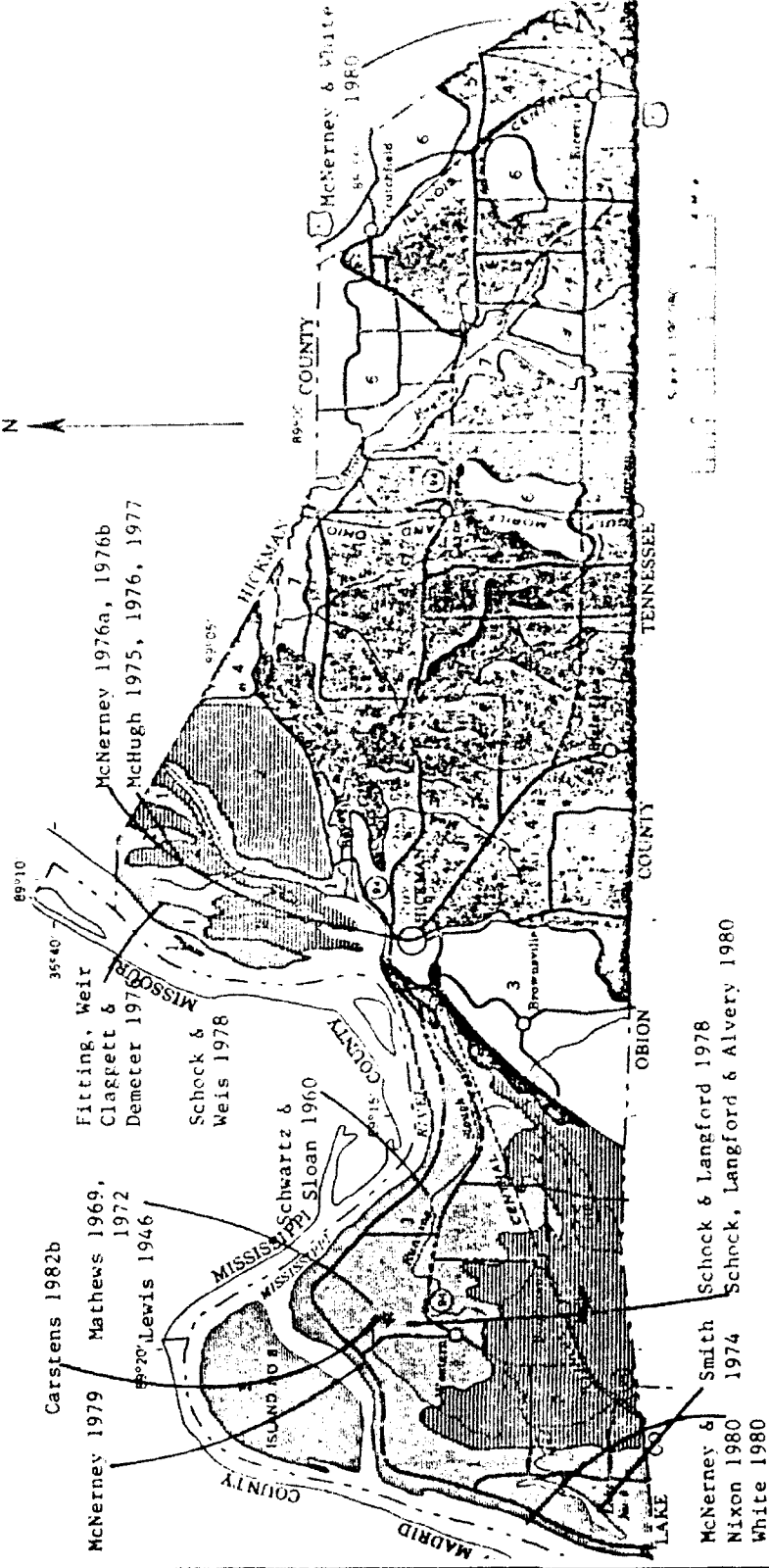
part, are from sites located west of the Mississippi in Arkansas and Missouri. The Mississippi appears to have been more a cultural and geographic barrier to Phillips' research than it was with the populations under study. Sassafras Ridge (15FU3) is noted in Phillips' Figure 447 several miles up stream and on the western bank rather than the eastern side of the river. Although not mentioning the project area specifically, Griffin (1952:227) included it in his discussion of the archeological resources of the Lower Mississippi Valley:

The Mississippi Valley from Cairo south might be regarded as the heart of the area occupied by the Indians north of the Rio Grande. Certainly as a mighty waterway which could and did carry Indians from the north to the south, and back again, its banks also offered excellent spots for the locations of towns and villages.

The only other archeological work documented from this period is that of James Mathews, who wrote two short articles (1969:41-42; and 1972:12) on a burial with an associated human effigy hooded water bottle that were recovered from 15FU3 (also see Lewis 1946).

With the recent passage of historic preservation legislation there has lately been a flurry of archeological investigations undertaken in Fulton County (Figure 4). Early federally funded archeology included the Schwartz and Sloan (1960) survey of twenty-two federal projects in Kentucky. In one of the Fulton County project areas they recorded three sites along Running Slough (15FU16, 15FU17 and 15FU18). With the initiation of cultural resource management studies providing information to federal agency planners, several other studies have also been undertaken. A reconnaissance survey for the Memphis District was conducted in the Reelfoot Lake area during which three sites were located (Smith 1974a). Fitting, Weir, Claggett and Demeter (1976) conducted a dike and revetment survey along the Mississippi River in parts of Fulton and Hickman counties with negative results. No sites were located in three small scale surveys in the cities of Fulton and Hickman conducted by McHugh (1975, 1976, 1977). McNerney (1976a and 1976b) conducted two surveys for the District along Obion Creek with no new sites being located. McNerney (1979) also conducted a survey in areas of revetment repair along the Mississippi River with similar negative results. A report written by McNerney and White (1980) on a reconnaissance survey conducted along Harris Fork Creek recorded two new sites. Schock and Weis (1978) in a survey in the town of Fulton recorded no new sites. The Memphis District conducted its own survey in Hickman (Berwick 1978) with negative results. Schock, Langford, and Alvery (1980) conducted a survey in the Sassafras Ridge area and located 11 archeological sites (15FU300-305, 307-311) five of which contained probable Mississippi components, eight contained probable Woodland components, one had an early historic component and three had Euro-American components (also see Schock and Weis 1978). An architectural survey of 21 Mississippi River levee berm items was conducted by White (1980) for the Memphis District in which 177 historic structures were recorded. McNerney and Nixon (1980) conducted an archeological and historical survey of the same area in which 12 new sites were recorded. Carstens (1982a) conducted an archeological survey of two areas near Hickman and recorded 14 sites including a large Middle Woodland earthwork (15FU37) and a large Mississippian village complex (15FU45).

FULTON COUNTY, KENTUCKY



PROJECTS NOTED	
SCALE: AS SHOWN	DRAWN BY
DATE: 15 March 85	REVISION
Contract No. DACW66-83-M-0524	
General location of projects mentioned in text	
Base map: from Lewton and Sims (1964)	
Figure 4	

According to Kentucky's State Archaeologist, twenty-five archeological sites have been recorded to date within the area encompassed by the Bondurant Quadrangle. Thirteen of these sites are multi-component. Twelve have Woodland components. Eleven have late prehistoric components. Fourteen of the sites have historic components. There have been no Paleo-Indian or Archaic sites yet recorded in the area (Clay 1983) (Table 2). None of the area sites (including the distinctively important Sassafras Ridge) are listed on the National Register of Historic Places.

For the past several years the Kentucky Department of Transportation has been conducting an archeological reconnaissance as part of the Great River Road development in Ballard, Carlisle, Hickman and Fulton counties. Section L-2 is closest to the present project area. This section begins at Anna Lynne and follows the KY 94 alignment to the KY 94 - KY 1282 intersection (Figure 5). Although a final report has yet to be published on the survey program, McGraw (1983) has indicated that very few new sites were recorded and of those most were extremely small. The mound at Sassafras Ridge (15FU3) has been incorporated into an overall management plan for the cultural resources along and adjacent to the Great River Road.

The archeological surveys conducted in Fulton County, although having added to the inventory of known sites, have been narrow in scope in consequence to being project specific. As noted by McHugh (1975:2):

In spite of the long history of interest in the archeological remains in Fulton County, there exists no record of any scientific excavation of any of these remains. Although Funkhouser and Webb (1932:127-133) provide a list of archaeological sites in Fulton County, this list (of 13 sites) is admittedly very incomplete, representing only the "most important" of the many previously reported in the literature. The present status of these and Fulton County's other prehistoric cultural resources is not known, the Funkhouser and survey being the most recent published account. The nearest excavated and published site in Fulton County is the McLeod Bluff site in Hickman County (Webb and Funkhouser 1933), a probable late Mississippian site and cemetery.

Since McHugh's summary, Schock, Langford and Alvery (1980) conducted limited subsurface testing at four newly recorded sites (15FU304A, 15FU304B, 15FU308 and 15FU309). Four 5 ft x 10 ft test units were excavated at 15FU304A to a maximum depth of 2.5 ft. Although lithics, pottery and other historic artifacts were consistently found throughout the deposits no clear areas of activity or habitation were identified. Woodland and historic components are present at the site but "no features or postmolds were found and the artifact sample was thin enough that additional excavation does not appear warranted" (Schock, Langford and Alvery 1980:30). Three 5 ft x 10 ft units were excavated to a maximum depth of 3 ft at 15FU304B. Prehistoric lithics and ceramics were recovered along with a heavy concentration of historic artifacts throughout the areas tested. The Early Woodland component appears relatively limited with no evidence of features or other midden development being encountered. The historic component on the other hand seems more extensive and permanent as evidenced by the presence of at

TABLE 2

Archeological sites on record with the State Archaeologist for the
Bondurant Quadrangle as of 27 January 1983

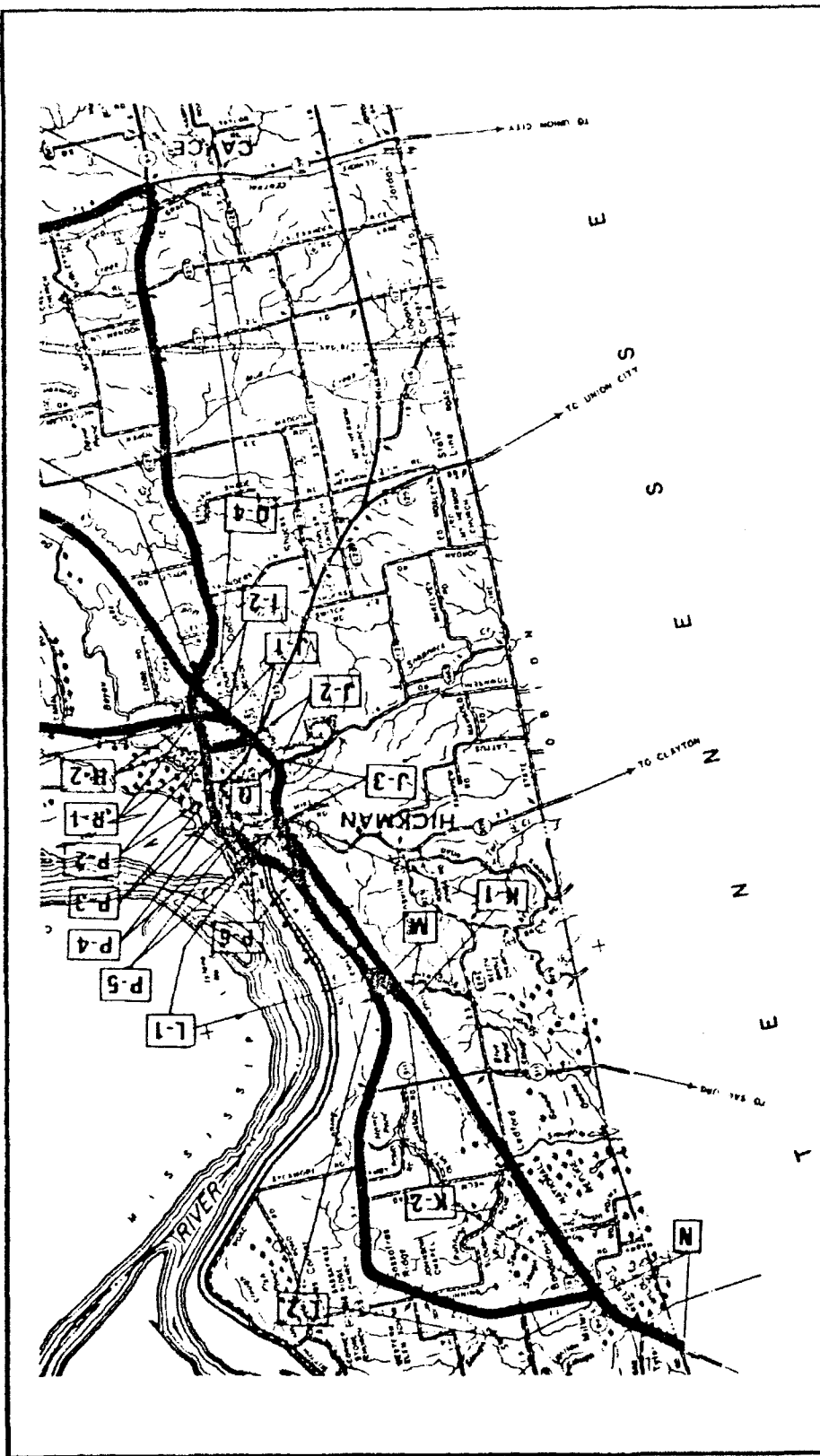
SITE NUMBER	OCCUPATION	TYPE	NATIONAL REGISTER STATUS
15FU3	Late Prehistoric	Open Habitation with mounds	Considered eligi- ble but not yet nominated by SHPO
15FU12	Undetermined	Mound Complex	Not Assessed
15FU18	Woodland/Late Prehistoric	Open Habitation with mounds	Not Assessed
15FU19	Woodland/Late Prehistoric	Open Habitation	Not Assessed
15FU21	Woodland/Late Prehistoric/Historic	Open Habitation	Not Assessed**
15FU22	Woodland/Historic	Open Habitation	Not Assessed
15FU23	Late Prehistoric	Open Habitation	Not Assessed
15FU25	Undetermined	Undetermined	Not Assessed
15FU26	Historic	Open Habitation/ Farm/Residence	Not Assessed
15FU27	Late Prehistoric/ Historic	Open Habitation/ Farm/Residence	Inventory Site*
15FU33	Historic	Open Habitation/ Farm/Residence	Inventory Site*
15FU34	Historic	Open Habitation/ Farm/Residence	Inventory Site*
15FU35	Historic	Open Habitation/ Farm/Residence	Inventory Site*
15FU36	Historic	Open Habitation/ Farm/Residence	Inventory Site*
15FU300	Late Prehistoric/ Historic	Open Habitation	Not Assessed
15FU301	Late Prehistoric	Open Habitation	Not Assessed**
15FU302	Woodland/Historic	Open Habitation	Not Assessed
15FU303	Woodland/Historic	Open Habitation	Not Assessed
15FU304	Woodland/Historic	Open Habitation	Not Assessed

TABLE 2 Concluded

SITE NUMBER	OCCUPATION	TYPE	NATIONAL REGISTER STATUS
15FU305	Late Prehistoric/ Historic/Undetermined	Open Habitation	Not Assessed
15FU307	Woodland/Late Prehistoric	Open Habitation	Not Assessed
15FU308	Woodland	Open Habitation	Not Assessed
15FU309	Woodland/Historic	Open Habitation	Not Assessed
15FU310	Woodland/Late Prehistoric	Open Habitation	Not Assessed**
15FU311	Woodland	Open Habitation	Not Assessed

* Inventory sites do not presently meet National Register Criteria

** Argued significant by Schock, Langford and Alvery 1980



GREAT RIVER ROAD PROPOSED ALTERNATIVES



HIGHWAY WORK

SCALE: AS SHOWN:	DRAWN BY
DATE: 15 March 63	REVISOR
Contract No. DACW66-63-17-0524	
Location of Great River Road alternate in relation to Sassafras Fidge	
Base map from Ky Department of Transportation	
Figure 5	

least one feature interpreted as a "heat/smoke source for (1) curing tobacco or (2) smoking hams or other meat" (Schock, Langford and Alvery 1980:42). Schock, Langford and Alvery (1980:42) suggest that the "site is of National Register significance on a local level and should probably be preserved if possible. The significance judgement is based on the Early Euro-American component of the site. . ." which dates between 1790 and 1840 and represents the only early historic component in the county which has thus far been tested (Schock, Langford and Alvery 1980:42).

Testing at 15FU308 was limited to two 5 ft x 5 ft units which were excavated to a maximum depth of 2 ft. Although lithics and Woodland ceramics were found on the surface very few similar artifacts were discovered during the course of the excavations. A "probable feature" containing "one Mulberry Creek Cord Marked body sherd, one small burnt limestone rock, and some charcoal" was noted in Test Unit 2 which was located outside the project right-of-way (Schock, Langford and Alvery 1980:50). No further work was recommended at 15FU308. Two 5 ft x 10 ft test units were excavated at 15FU309 to ca 2.1 ft. Several sherds including Baytown Plain and Mulberry Creek Cord Marked, along with lithic artifacts, were found on the surface and in the plowzone of each unit (in addition to three historic artifacts). No artifacts were found below .5 ft and no further work was recommended (Schock, Langford and Alvery 1980:52).

Schock, Langford and Alvery (1980) were able to document in a general way that many of the smaller sites situated on ridge crests or along their edges are shallow with little or no evidence of more than limited activities. Enough work has not been accomplished, however, to determine whether these sites reflect a general pattern or rather exceptions in a settlement system which more routinely produced evidence of permanent occupations.

Carstens' (1982) aerial archeology research program is perhaps the most interesting investigation which has taken place in the Sassafras Ridge area from a purely technical standpoint. In a 2 km x 4 km area which includes the portion of our research universe south of Fish Pond, Carstens (1982:45) identified more than 80 anomalies (i.e., "signatures" or "breaks" in the coloration of the natural landscape) of which only 24 could be ground checked. All 24 anomalies were identified in the field as archeological sites and no additional sites were found in the areas checked. Six previously recorded sites were not identified from the aerial photographs (including 15FU308) which brings Carstens' success rate to 80% (24 of 30; 1982:45). Seventy-five percent of the sites Schock, Langford and Alvery tested (15FU304A, 15FU304B and 15FU309) were identified and all of those argued significant by Schock, Langford and Alvery were clear in the aerial photographs (15FU21, 15FU301, 15FU304B, 15FU310; Carstens 1982:47). In addition to these, 11 other sites were identified from the remote sensing that had not been previously recorded, some of which had apparently been overlooked by the initial Schock and Langford survey (see Schock, Langford and Alvery 1980).

Carstens (1982) was able to identify a new site (15FU53) and take a close look at a well known site (15FU3) which are both within our project area during the course of his investigations. 15FU53 is a small site situated just east of 15FU3 and was indicated as a dark circular stain located on a medium grey background (Carstens 1982:51). The site

had not been known previously and is listed as non-significant in Carsten's Table 4 (1982:47). The well known but not well documented Sassafras Ridge mound (15FU3) produced particularly exciting results. Close examination of the aerial photographs revealed a large, internally diverse site which "contained anomalous signatures which probably represent individual house platforms, midden dumping areas, and a central plaza region" (Carstens 1982:48; cf. Moore's 1916 description on pages 4 and 5).

An important problem plaguing archeologists in this region is the fact that pothunting has taken place for decades at the major mound sites in the county. Funkhouser and Webb (1932:129) mention collector activity at 15FU3. A few years ago McHugh (1977:5) noted the following at 15FU3.

Site No. 3 (15FU3) is a large, truncated mound located at the northern end of Sassafras Ridge on the flood plain about 8 miles west of Hickman. My recent examination of the mound showed that it is still being dug into, the evidence being a series of pits, some of considerable size and recent vintage. The surrounding land, annually plowed and planted, currently produces a good quantity of broken, shell-tempered pottery, a little broken bone, and some lithic materials (projectile points, flakes, cores, etc.).

When we conducted our survey local informants mentioned that pothunting was still commonplace at 15FU3. At the nearby Sassafras Ridge grocery store a sign advertised "Pots for sale -- dug in this area". In questioning the salesperson we were informed that the vessels were dug up by the store owner's son. We were refused permission to photograph them. In addition, Dr. Carstens informed us that at an amateur archeology meeting on 14 February 1983 it was brought to his attention that over 300 vessels have been removed from 15FU3 within the last three months.

Sequence of Aboriginal Occupation

The prehistory of the project area has recently been summarized by Carstens (1982a:11-15). The following discussion is organized in terms of a sequence of four cultural designations including the Paleo-Indian, Archaic, Woodland and Mississippi periods.

Paleo-Indian, pre 8,000 B.C.

The earliest human habitation of this part of the Mississippi Valley is commonly referred to as the Paleo-Indian Period. These populations are thought to have been organized in small bands exploiting a changing terminal Pleistocene or transitional Pleistocene-Holocene environment. Sparse artifactual data (none of which is known to have come from this part of Fulton County) consists of chipped stone tools including the diagnostic fluted projectile points/knives.

Data for Paleo-Indian settlement-subsistence patterns in western Kentucky are practically non-existent. There is no current evidence to suggest that the Sassafras Ridge area was exploited by Paleo-Indian groups (Clay 1983). The landform itself may not even have existed

during the Paleo-Indian Period (i.e., the area alluvial deposits are generally recent in origin). Paleo-Indian sites are known to be located on older land surfaces in Kentucky, Arkansas, Missouri and Tennessee (Rolingson 1964; Morse 1981). It is probable therefore that if sites associated with Paleo-Indian groups were located in the project area their traces would have been destroyed by lateral movement of the Mississippi River or would surely be obscured by recent alluvial sediments.

Archaic, ca 8,000 B.C. - 500 B.C.

The Archaic is often divided into three substages (early, middle and late Archaic). Changing environmental conditions initiated a new adaptive strategy by human populations. Climactic conditions appear to have become stabilized from about 8,000 to 1,000 B.C., although the weather might have fluctuated occasionally toward slightly warmer temperatures (Carstens 1982a:12). Extrapolating from nearby regions it appears that post-Pleistocene adaptations required new sets of subsistence strategies as megafauna became extinct and new plants and animals began to occupy a variety of micro-environments.

Data from Tennessee suggests that by about 7,000 B.C. grinding tools began to appear in the archeological record. These tools were used to process seeds and nuts and indicate the increasing importance of such foods in the diets of Archaic peoples (Smith 1974b:1). By about 5,000 B.C. ground stone axes and spear-thrower weights became part of the standard tool kit indicating still more technological advances in exploitative behavior. In northeast Arkansas the Dalton adze is known to be an integral part of the tool kit (Morse and Goodyear 1973) and as a probable prototype for adzes, celts, and other woodworking tools of later times could have been used in constructing dugout canoes (Phillips, Ford and Griffin 1951:10). Negative attributes include the absence of pottery and the bow and arrow. Projectile points include Eva, Quad, Dalton and Kirk Serrated.

No Archaic sites have been recorded in this part of Fulton County (Clay 1983). Archaic settlement-subsistence patterns in the project area may be assumed to be analogous to what is known from northeast Arkansas, southeast Missouri, and northwestern Tennessee for this time period. Settlement types would include extractive camps, base camps, mortuary activity areas (e.g., the Sloan site in northeast Arkansas, 3CE94) and chert resource procurement areas. The settlement pattern was probably that of local bands which would seasonally occupy a base camp then would fission into smaller groups to perform extractive activities in response to seasonally available resources.

During the late Archaic (4,000-500 B.C.) the presence of exotic materials suggest long distance trade and travel. Toward the latter part of this period Poverty Point culture with its ubiquitous baked clay balls has as its interaction sphere of influence almost the entire Lower Mississippi Valley. The nearby O'Bryan Ridge phase may represent the northernmost extension of this influence (Phillips 1970:869-870).

Woodland, ca 500 B.C. - A.D. 1000

This period of cultural development, like the Archaic is often divided into three substages (early, middle and late Woodland). Woodland times are characterized by the appearance of pottery in the archeological record along with evidence suggesting the initial cultivation of maize, squash and possibly other cultigens. Subsistence patterns are still focused on hunting and gathering activities although there appears to be less emphasis placed on seasonal movements of populations to resource procurement areas and more permanent settlements begin to appear.

In the Lower Mississippi Valley there are two well-documented ceramic traditions which represent Woodland occupations -- grog-tempered Baytown and sand-tempered Barnes (House 1975:32). Another important technological innovation which occurred sometime during the Woodland Period was the introduction and adoption of the bow and arrow (Lewis and Kneberg 1973). Associated with the development of the *pa* "Hopewell Interaction Sphere" or Marksville, is the construction of earthworks, the majority being conically-shaped burial mounds.

Twelve sites with Woodland components have been identified in the project area (Clay 1983). All of these have been recorded by pedestrian survey and none have been intensively studied.

Mississippi, ca A.D. 1000 - A.D. 1700

The Mississippi Period has traditionally been divided into three stages as with the Archaic and Woodland periods. It is characterized by a high degree of socio-political organization, pottery making, and the appearance of large towns and ceremonial centers. The subsistence base included cultigens with continual reliance on traditional faunal and floral food resources to obtain protein and to supplement diets. Technological innovations in this period include the appearance of shell-tempering in the pottery and smaller arrow points (Klinger 1978:18).

Settlement patterns of the Mississippi Period are a complex series of ceremonial centers, villages, farmsteads and other associated sites (Smith 1978). With its flat-topped pyramidal earthen structure, Sassafras Ridge (15FU3) may represent the remains of a large "temple" mound. Its presence on a major floodplain corresponds with locational attributes discussed by researchers attempting to explain such distinctive settlement patterns (e.g., Clay 1976; Larson 1970, 1972; Lewis 1974). Numerous other mounds of similar shape and age are known throughout the Lower Mississippi Valley (see generally Phillips 1970).

The Mississippian tradition probably developed out of Woodland cultures of previous times but appears to have been "tempered" with possible Mesoamerican influences (Wicke 1965). It persisted in the Lower Mississippi Valley for a short time after European exploration and settlement of the area. The last vestiges of Mississippian culture were destroyed by the French in the early decades of the eighteenth century when the Natchez were subjugated and dispersed.

Historic Background

Protohistoric Period A.D. 1539-1818

The protohistoric period represents the time when European and later Euro-American exploration and some settlement occurred in the Lower Mississippi Valley. This period ends with the War of 1812 when the "Jackson Purchase" opened western Kentucky to American settlement.

The first Europeans to explore the Lower Mississippi Valley were the Spaniards under the command of Bernando De Soto in 1541. De Soto's expeditionary army probably did not travel as far north as Fulton County, Kentucky (Phillips, Ford and Griffin 1951:348-394). Spanish goods have been recovered from archeological sites in the Southeast in pre-settler contexts (Smith 1973) but these sites are located quite a distance south of Fulton County. Between the time of this expedition and the next recorded exploration of this area it is estimated that 80% of the aboriginal population of the Lower Valley was decimated by European introduced diseases (Phillips, Ford and Griffin 1951:419).

It was about 132 years later that the Lower Mississippi Valley was again explored by Europeans. This time it was by the French travelling down the Mississippi River. Beginning with Marquette and Joliet in 1673, La Salle in 1682 and Henri de Tonti in 1686, the French explored and settled the area. For over a century dugout canoes, rafts, flatboats and keelboats carried the commerce from the Central Valley to New Orleans and other French settlements in the Lower Mississippi Valley.

Historic Period A.D. 1818 - Present

This part of the country was known as the "Chickasaw territory" until General Andrew Jackson purchased what are now substantial parts of western Kentucky and eastern Tennessee from the Chickasaw Indians in 1818. There was a post-War of 1812 infusion of Americans in the region similar to what was taking place in northeast Arkansas (Stewart-Abernathy 1980).

Hickman County was formed from the land in western Kentucky that was part of the so-called Jackson Purchase. Fulton County was formed in 1845 out of the southwestern part of Hickman County (Carstens 1982a:16). The town of Hickman, the county seat of Fulton County, was established by act of the legislature in 1834. Hickman was originally called Mills' Point in honor of its first settler who arrived in 1819. The name was changed in 1837 to the maiden name of the wife of G.W.L. Marr who owned the town and several thousand of the surrounding acres (Collins 1877:281). Fulton County was named in honor of Robert Fulton who invented the steamboat. Although not considered a practical mode of transportation until 1814, by 1835 there were 1,000 steamboats operating out of New Orleans. The number increased to over 2,500 in 1845, and to over 3,500 in 1850 before the effect of railroad traffic began to take its toll (Fair and Williams 1950:35). From about 1818 until the present, the city of Hickman in Fulton County ". . . has thrived as an agriculturally-supported port on the Mississippi River" (Carstens 1982a:16).

There were no major encounters in Fulton County during the Civil War but the county did serve as a dividing line between the Union

occupation and fortification of Cairo and the Confederate occupation and fortification of Columbus, Kentucky. Plunder by both the North and the South occurred in Fulton County during the war and a naval engagement by both sides took place on the Mississippi River north of Hickman (Whitesell 1963:107-121; Long 1970:253-276).

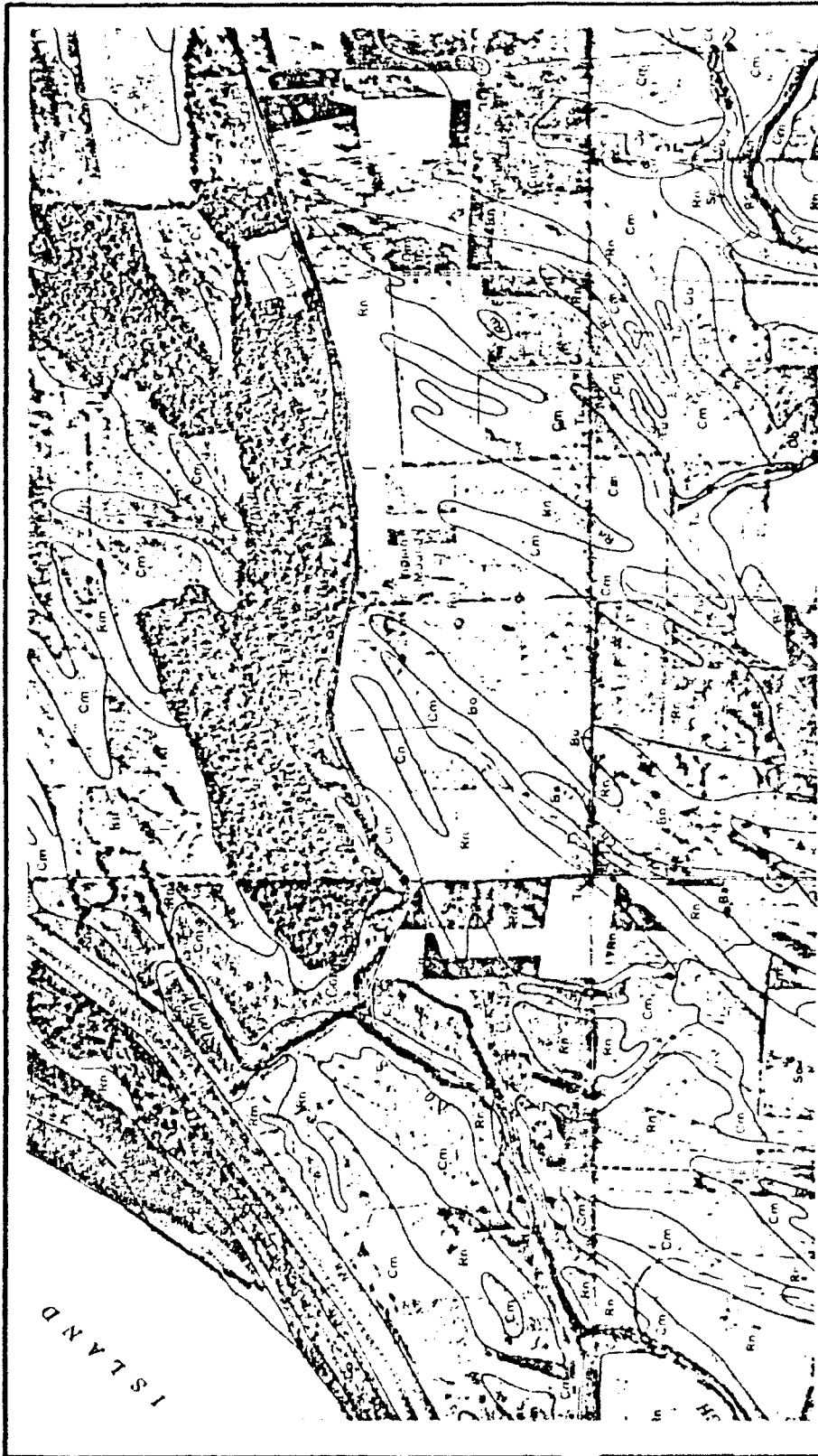
Just south of the project area, Reelfoot Lake was said to have been formed by the New Madrid earthquake of 1811 (Collins 1877:284). During the first decade of the twentieth century problems involving ownership of the land around and under Reelfoot Lake arose. The local citizen response to litigation of the land ownership problem turned violent with the initiation of "night riding". Night Riders terrorized Fulton County in Kentucky and Lake County in Tennessee for several months in 1908. The reign of terror created by the Night Riders peaked with the murder of a promising young lawyer. This event spurred the Governor of Tennessee to call out the state militia for the first time since the Civil War to restore law and order (Vanderwood 1969). Public ownership of the lake was thereafter established.

In 1937 a flood of the Mississippi River resulted in substantial damage to the city of Hickman driving 4,000 people from their homes causing an estimated \$195,000 damage to the town (The Hickman Courier 1937). Besides this natural disaster Fulton County suffered a continual decline in population since 1890 (Carstens 1982a:16) probably related to change in agricultural practices and the fact that the Mississippi River had lost a great amount of traffic to other kinds of transportation. At the turn of the century, tenant farming was the uniform agricultural strategy to optimize productivity of the alluvial floodplain. With modern farming techniques employing mechanized equipment and the switch from cotton to soybeans as the major cash crop, tenant farmers became dispensable and agribusiness became more cost-effective. A number of old tenant houses which appear on historic maps of this century have since been abandoned and torn down.

GENERAL AREA, SAMPLING STRATEGY AND FIELD METHODS

The project area is located just north of the community of Sassafras Ridge in western Fulton County, the southwesternmost county in Kentucky. Fulton County is bordered on the west by the Mississippi River and is within the Jackson Purchase region of the state. The county is characterized by alluvial deposits along the Mississippi River and Bayou du Chien and loessal uplands to the east (Newton and Sims 1964:65). The project area is within that portion of the Mississippi River floodplain where the meander belt has either remained stable or has reoccupied an earlier channel course. For this reason, soils of the region are classified as the most recent alluvium in the Mississippi River Embayment, although landforms may be up to 6000 years in age (Saucier 1974:22). Soils are of the Commerce-Robinsonville association and represent nearly level, somewhat poorly to well-drained floodplain deposits (Newton and Sims 1964:2) (Figure 6).

At the present time all areas adjacent to the proposed rights-of-way are under cultivation. As a result, ground surface visibility and access to land was variable throughout the project area.



AREA SOILS

SCALE: 1:15,840	DRAWN BY	Contract No. DACW66-83-M-0524	REVISOR
DATE 15 March 83	Specific soil types mapped within the project area		
From Newton and Sims (1964)			Figure 6

Sampling Strategy

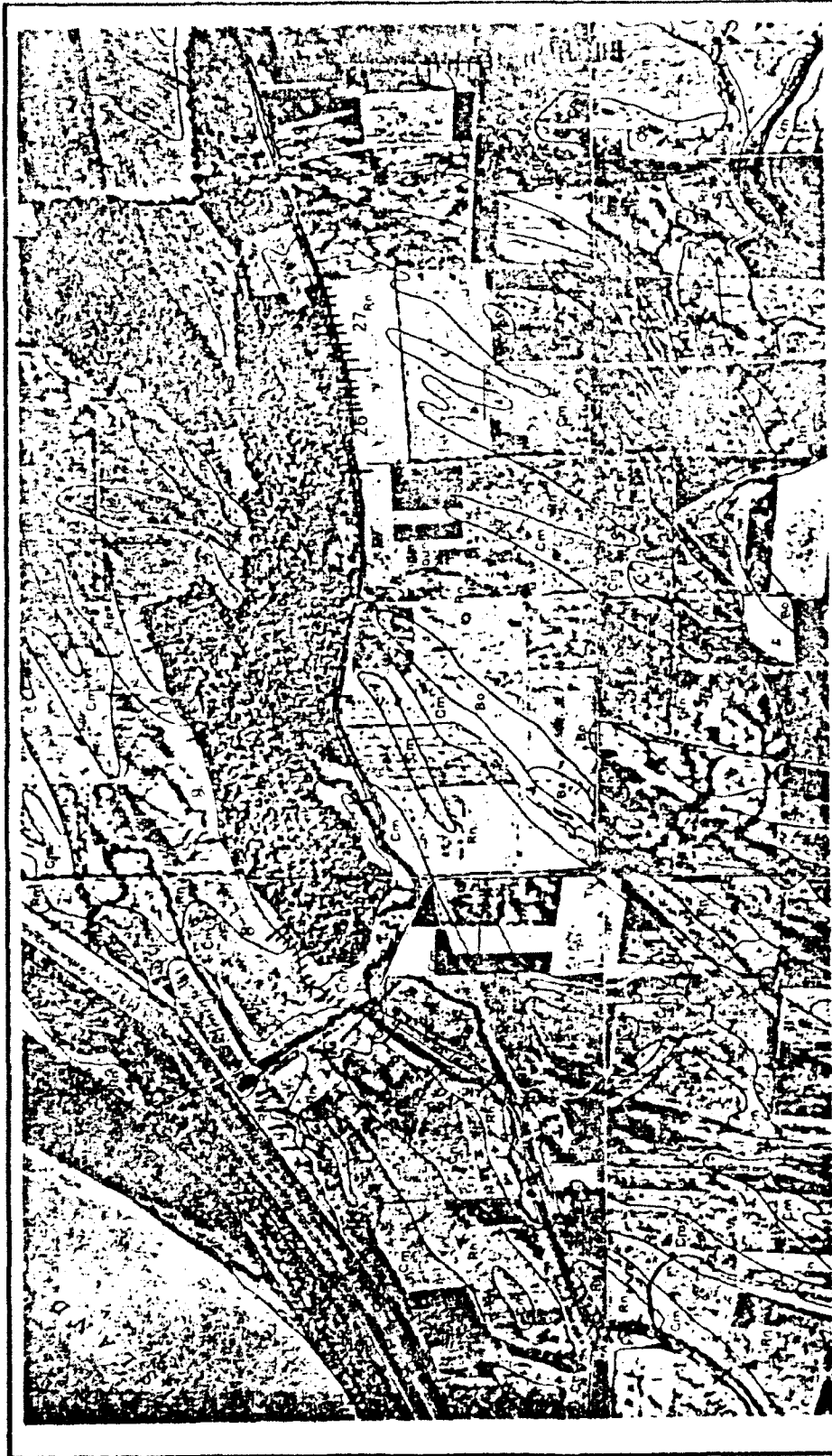
In order to provide uniform coverage of the project area, and to avoid any bias which may be inherent in a strictly judgemental survey program, a stratified random sampling design was developed for this reconnaissance. The total project area of 5.99 miles (9.64 km) was divided into 5 strata designated A-C, C-E, E-D, D-B and C-D respectively (see Figure 7). Each artificial segment was further sub-divided into 300 m survey strata. These strata were numbered consecutively from point A to B and then C to D. Twenty-nine strata were defined. A calculator was then used to generate a series of random numbers between 1 and 29. The first stratum number from within each segment generated by the calculator was then selected for field survey. The only stipulation placed on the selection of survey strata was that all major soil types within the project area be represented. After plotting transect locations on the SCS soil survey map of the project area it became clear that this condition had been met. The five survey strata (2, 7, 17, 20 and 27) represent a 15.8% sample of the project area.

Stratum 2

Stratum 2 is located at the western edge of the project area adjacent to Pond Slough and Ash Log Road (Figure 7). Most of this area had been disced prior to the survey and ground surface visibility was excellent (91%-100%). The surface topography is gently rolling south of Ash Log Road with the highest elevations occurring next to Pond Slough. The small portion of the transect north of the road was planted in winter wheat. This area is very low and flat lying below 290' in elevation. Ground surface visibility in this area was fair, ranging from 50% - 75%. Due to the wheat crop this area was not systematically surveyed but was spot checked along wide furrows and drainage cuts. South of the road elevation ranged from 290' to greater than 295'. Two soil types are present in Stratum 2. The lower portions of the stratum including the area north of Ash Log Road, the area just south of the road and a triangular area on the west edge of Pond Slough contain Commerce silt loam (0%-2% slopes). These soils are moderately well drained to poorly drained alluvial deposits with high natural fertility located on natural levees (Newton and Sims 1964:9). The higher portions of the stratum bordering Pond Slough contain Robinsonville silt loam (0%-2% slopes). These soils are well drained to moderately well drained alluvial soils deposited on natural levees. They are better drained than the associated Commerce soils and are also high in natural fertility.

Stratum 7

Stratum 7 (Figure 7) is located along the northern perimeter of Fish Pond. This area is extremely flat with little or no local relief. Elevations are below 290'. Ground surface visibility was only fair (51%-75%) in this area since the residue from the previous year's soybean crop had not been disced under. It was not possible to conduct shovel testing due to the extremely wet conditions. Standing water was present in many places along the edge of Fish Pond Road extending as far



SAMPLE STRATA

SCALE: 1:15,840	DRAWN BY	Contract No. DACW66-83-F-0524	REVISED
DATE: 15 March 83	Sample strata within project area - shaded zone surveyed		
Base map from Newton and Sims (1964)		Figure 7	

north as 20 m from the woodland. Soils in this stratum are Commerce silt loams (Newton and Sims 1964:9).

Stratum 17

Stratum 17 lies along the eastern perimeter of the project area (Figure 7). Approximately 225 m of the stratum extends north of Fish Pond Road and the remaining 76 m is south of the road. The northern portion is low and the topography is dominated by a series of low east-west trending ridges. Elevation in this vicinity does not exceed 295'. A single soil type, Crevasse loamy fine sand (0%-4% slopes), is present in the northern section. Crevasse soils are excessively drained alluvial deposits derived from sandy alluvium distributed on natural levees adjacent to the river (Newton and Sims 1964:9). In contrast to the Commerce and Robinsonville series the Crevasse soils are low in natural fertility. South of Fish Pond Road the topography is very flat but is higher in elevation than the portion north of the road (although elevations do not exceed 295'). The entire stratum had been disced prior to the field survey and ground surface visibility was excellent (91%-100%).

Stratum 20

Stratum 20 is also on the eastern perimeter of the project, beginning approximately 800 m south of Fish Pond Road and extending 304 m south (Figure 7). Topography in this area is dominated by a low north-south trending ridge which exceeds 295' in elevation. This portion of the right-of-way is divided by a fenceline. West of the fenceline the field had been recently disced providing excellent (91%-100%) visibility. East of the fenceline the field was sown in winter wheat and could not be examined. The soil type in this stratum is Commerce silt loam (Newton and Sims 1964:9). Areas peripheral to the ridge on the north, west and south were poorly drained and contained many stretches of standing water.

Stratum 27

This stratum is the only one located along Alternate 2 beginning approximately 650 m west of where the right-of-way crosses Fish Pond Road and extending 304 m to the west. The right-of-way within Stratum 27 is bordered on the north by Fish Pond Road and Fish Pond itself (Figure 8). To the south the right-of-way is in a cultivated field. The topography is very flat with little or no relief characteristic of its Robinsonville silt loams. This field had not been disced and the residue from the previous crop obscured the ground surface to some degree. However ground surface visibility between rows in most instances was approximately 75% and even in the poorer areas exceeded 50%.

Areas Spot Checked

In addition to the strata formally surveyed several other portions of the right-of-way were examined to support the findings of the

statistical sample. These areas are indicated in Figure 7 and include parts of Stratum 16, all of Strata 18 and 19 and part of Stratum 26.

Field Methodology

The primary methodology employed during the field investigations was an on-the-ground surface examination of selected strata within the project right-of-way. This inspection was made by two crew members spaced at 10 m intervals who walked transects lengthwise across the survey area. When cultural material was encountered transect intervals were reduced to 5 m. Shovel testing was not employed during the survey for two reasons: 1) excellent visibility characterized most of the project area, and 2) heavy rains during the survey made already saturated soils too wet to effectively excavate and screen. In the areas where visibility was hampered because of crop residue transect spacing was reduced to compensate for this fact. When sites were located surface collections were made, except where cultural material was obviously of late twentieth century affiliation. In these instances, notes were made on the type and variety of artifacts present but no collections were taken. The collection methodology consisted of recovering all visible surface artifacts. No point provenience collections were made. The 100% collection was possible because of the small size of the sites encountered.

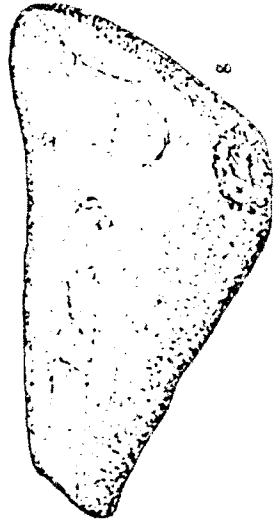
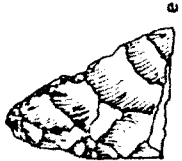
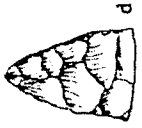
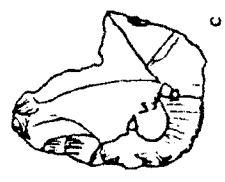
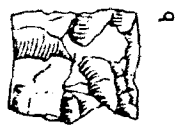
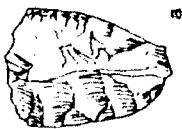
RESULTS OF THE SURVEY

Four archeological sites were recorded during the survey. Two are multicomponent containing evidence of both historic and aboriginal activities, one is an historic site and one is a single component aboriginal site.

15FU55

15FU55 represents a multicomponent site located adjacent to Pond Slough within Stratum 2. The site contains evidence of a major twentieth century farmstead component as well as evidence of a small Woodland Period occupation. Historic artifacts observed include white ware, plastic, tin cans, pane glass, metal fragments, crockery and mason jars and are distributed over an area 175 m N/S x 125 m E/W. Historic materials extend from the Ash Log Road south and although no structures are presently standing, a house and outbuilding are plotted at this spot on the Bondurant USGS Quad map (1969). Prehistoric artifacts are much more restricted in their distribution being confined to an area 40 m N/S x 30 m E/W on the northwestern flank of a high natural levee west of Pond Slough. Since the historic component was of such a recent time period no collections were made of associated artifacts.

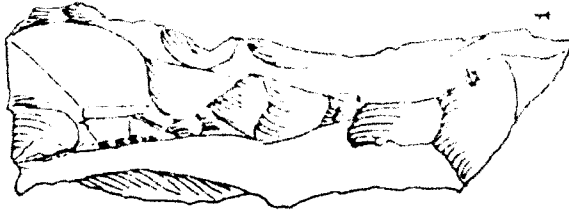
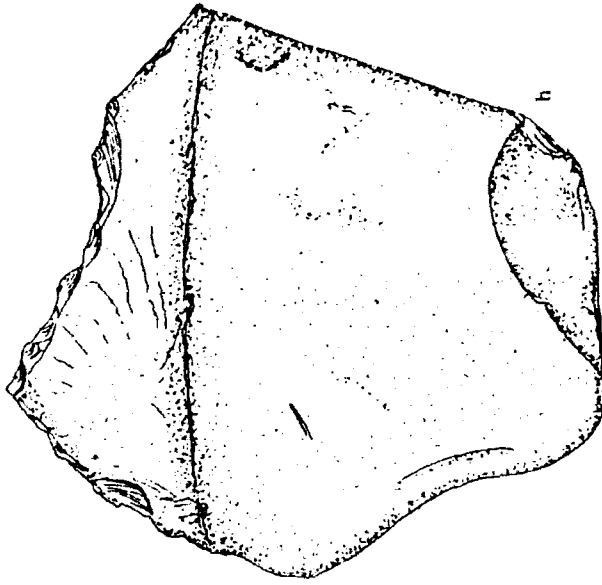
The only prehistoric tool recovered from the surface of 15FU55 is a triangular shaped "thumbnail scraper" (Figure 8a) (Table 3). This specimen is plano-convex in cross-section with a very steep beveled distal cutting edge. The lateral margins have been ground. Flakes have been removed perpendicular to the edge margins forming a distinct central ridge extending lengthwise and a second transverse ridge extends



- a thumbnail scraper (15FU55)
- b-e biface fragments (15FU64)
- f flake/concave working edge (15FU64)
- g hammerstone (15FU64)

ARTIFACTS

SCALE: Full	DRAWN BY: BF
DATE: 15 March 63	REVISOR:
Contract No. DACM66-83-M-0524	
Surface artifacts recovered from 15FU55 and 15FU64	
Figure 8	



h chert cobble (15FU64)
 i-j flaked cobble fragment (15FU64)



ARTIFACTS

SCALE: Full

DATE: 15 March 83

DRAWN BY

Contract No. DACW66-83-M-0524

REVISED

Surface artifacts recovered from 15FU55 and 15FU64

Figure 8 cont.

TABLE 3
 Surface Artifacts Collected from 15FU55
 (Accession Number 83-1)

ARTIFACT TYPE	Ct.	Wt. (grams)	% by class
Thumbnail Scraper	1	5.5	2.0
Core	2	16.5	4.1
Pri. Dec. Flake	4	22.1	8.2
Sec. Dec. Flake	15 (5)*	33.5	30.6
Interior Flake	16 (3)*	8.7	32.7
Retouch Flake	3 (1)*	0.3	6.1
Shatter	6	10.9	12.2
Neeley's Ferry Plain	2	1.4	4.1
Total	48	98.9	100.0

*Number heat treated

across the distal end of the scraper. The artifact was made from a high quality mottled white chert.

Two small shell-tempered Neeley's Ferry Plain sherds (Phillips 1970) were also recovered. Both are badly eroded and the shell-tempering has been completely leached out. Total weight for the sherds is 1.4 g.

The general artifact assemblage is highly suggestive that the site represents at least a lithic manufacturing workshop (see Table 3). This hypothesis is supported by both positive and negative lines of evidence. On the positive side, the artifact assemblage contains a high percentage of "quarry" site types of artifacts including raw material cores, primary and secondary decortication flakes and chatter (27 of 49 total artifacts, 55%). Conversely, retouch flakes represent only 6.5% of the knapping debris indicating that little final stage reduction took place at the site. It should be noted, however, that this class of flake is the most likely to be under-represented in the collection in spite of the fact that every effort was made to collect even the smallest artifacts. Negative lines of evidence concern what is not in the artifact assemblage. In the first place there is a lack of tool variety, only a single scraper. There are not even any utilized flakes which is generally a well represented tool class (cf. Schock, Langford and Alvery 1980). There are also no projectile point base fragments, which might suggest the refurbishment of a hunting tool kit. Fire-cracked rock indicative of cooking is also absent from the assemblage.

All of the lithic material is chert. The color variation and texture as well as the presence of residual cortex on many pieces indicates that the material comes from locally available pebble cherts. Chronological position for the prehistoric occupation of 15FU55 has been established on the basis of the two small shell-tempered Neeley's Ferry Plain sherds. At least Mississippi Period activities occurred here. A second line of evidence in this regard is the thumbnail scraper. Both Williams (1980:106) and Morse (1981:28) include thumbnail scrapers as diagnostic tool types of the late Mississippi Period, Armored and Parkin phase sites respectively.

15FU64

15FU64 is located on the crest of a ridge adjacent to Pond Slough also within Stratum 2. Artifacts are distributed in an area 75 m N/S x 60 m E/W. Site elevation is greater than 295' above msl. Although the artifact distribution is more extensive, the site is similar in content to the prehistoric component at 15FU55, 120 m to the north. Lithic knapping debris was the primary artifact class collected (Table 4), although three Neeley's Ferry Plain sherds were also recovered. While the artifact density was moderate and fairly uniform occasional concentrations were present.

One small biface fragment with basal and blade margins (Figure 8b) was recovered. The distal tip is missing having snapped perpendicular to the long axis of the blade. Made of chert, the piece has been pressure flaked along the base parallel to the long axis and along the blade margins perpendicular to the long axis. The upper portions of the blade are relatively thick in comparison to the base, suggesting that the artifact is an arrowpoint preform broken during final shaping. This hypothesis is supported by the fact that a flake that may represent

TABLE 4
 Surface Artifacts Collected from 15FU64
 (Accession Number 83-2)

ARTIFACT TYPE	Ct.	Wt. (grams)	% by class
Tested Cobble	2	106.7	0.7
Cobble	1	94.3	0.4
Core	2	128.5	0.7
Scraper/Core	1	32.7	0.4
Pri. Dec. Flake	12 (1)*	31.1	4.5
Sec. Dec. Flake	77 (12)*	76.3	28.8
Interior Flake	100 (17)*	56.7	37.4
Retouch Flake	17 (7)*	3.0	6.4
Modified Flake	1	1.8	0.4
Flake w/ concave edge	1	1.8	0.4
Shatter	43	178.8	16.1
Biface Fragment	5 (2)*	12.6	1.9
Hammerstone	1	130.8	0.4
Pebble Fragment	1 (1)*	33.7	0.4
Neeley's Ferry Plain	3	5.7	1.1
Total	267	894.5	100.0

beginning efforts at forming a haft element was removed prior to breaking the tip.

Also recovered was an ovate biface fragment manufactured from a red chert (Figure 8c). This piece is laterally snapped along a defect in the raw material. It is relatively thick and appears to have been heat treated. Flaking has been entirely by percussion. This artifact appears to be some type of aborted preform.

The upper blade section and tip of a small finely made biface was collected (Figure 8d). It is probably an arrowpoint of some unknown variety. It has been pressure flaked along both margins in an unaligned pattern and has also been heat treated.

Also collected was the distal tip and upper blade section of a small biface. The piece has been flaked by percussion with no apparent retouch. It was made from tan chert (Figure 8e).

A small triangular biface fragment of red chert was recovered and appears to be a fragment of a basal margin. No retouch is evident.

Figure 8f depicts a poor quality red chert flake with a small (.98 cm) concave working surface. Concave portions of the flake are steeply angled and worn. An additional portion of the flake margin was also possibly used, although this may represent post-deposition edge damage.

The small, trianguloid quartzite pebble in Figure 8g exhibits battering on two tips. One utilized tip is broken and the other exhibits a circular zone of battering 1.2 cm in diameter. The probable hammerstone weighs 130.8 g.

The artifact in Figure 8h is a high quality tan chert cobble that has either been used as a scraping implement or has been prepared for further lithic reduction. Microscopic examination of the "utilized" edges of this piece failed to reveal striations or step-fracturing on the ventral surface that would support its definition as a scraper. It is highly likely that these worn areas along the margins were ground to enhance subsequent flake removal. The dark gray and tan mottled, angular chert cobble in Figure 8i weighs 94.3 g and has been extensively flaked. The brick red chert pebble in Figure 8j is split in half, weighs 33.7 g and appears to have been heat treated.

The overall artifact assemblage is very similar to the aboriginal component at 15FU55, and the site function appears to be identical. The preponderance of artifacts at 15FU64 are associated with flint-knapping activities. The presence of a hammerstone reinforces the hypothesized lithic workshop function. As at 15FU55 the lack of evidence of habitation such as large numbers of ceramic artifacts, fire-cracked rock and tool variety also support this hypothesis. The lithic raw material is nearly uniformly chert and appears to be locally derived. The three Neeley's Ferry Plain sherds collected indicate at least a Mississippian Period chronological affiliation.

15FU65

15FU65 consists of several historic and aboriginal artifacts found in a plowed field adjacent to Fish Pond in Stratum 27. A thorough examination of the field area immediately surrounding the artifact scatter failed to locate any additional artifacts. Initial impressions of the field investigators was that the site represents a secondary deposit. This opinion was formulated on the basis of: 1) only 5 artifacts were found, 2) of these, two are historic (a bottle neck and a

piece of cut bone) and three are prehistoric (1 secondary decortication flake and 2 Baytown Plain sherds), 3) the prehistoric artifacts could easily have come from 15FU3, a large Woodland/Mississippi mound site 600 m to the west of this scatter, 4) the area along Fish Pond has been extensively used for dumping of historic trash, and 5) no evidence of an historic structure could be located. The artifact scatter is in the same soybean field as 15FU3, so it is likely that artifacts associated with that major site are widely dispersed around the main site area. A variety of recent historic debris is scattered along Fish Pond Road. Items such as bottle glass, plastic, white ware, aluminum cans, metal fragments, etc. are found as far as 15 m on either side of the road. The historic material found, a bottle neck and a cut mammal bone were collected because they possibly represent a late nineteenth century occupation in the project area. All artifacts were within an area 20 m E/W x 10 m N/S.

The historic material recovered from 15FU65 includes an amethyst-colored, mold-blown bottle neck that has been finished with a lipping tool, rotated counter-clockwise. The interior and exterior surfaces are smooth and there are many bubbles in the glass. The mold seams disappear near the lip. The method of lip finishing, color and manufacturing technique indicate that this specimen dates from the latter part of the nineteenth century to the beginning of the twentieth century (1880-1925) (Newman 1970:70-75).

Two small grog-tempered Baytown Plain sherds (Phillips 1970) weighing 11 g along with the flake were the only prehistoric artifacts observed at 15FU65 (Accession Number 83-3).

15FU66

This site was located on a ridgetop in a plowed field within Stratum 20. Twentieth century artifacts were thickly scattered over an area 120 m N/S x 70 m E/W. The site is bisected by a fenceline and may be larger. The area east of the fenceline was planted in winter wheat and could not be surveyed. No evidence of a house foundation or well could be located west of the fenceline. J. O. Davis, a local informant who lives approximately 800 m north of 15FU66 informed the field crew that a tenant house had been located at the site, but had been removed 10 to 12 years previously. The structure would have had to have been removed prior to that however, since it is not plotted on the 1969 Bondurant USGS Quadrangle map.

Since the artifacts at the site were all of twentieth century origin, no collections were made. Artifacts present include bottle and pane glass, white ware, crockery, mason jars, plastic, shoe soles, aluminum cans, metal fragments, round wire cut nails, brick and mortar fragments and coal.

15FU66 represents a part of the early to mid-twentieth century labor intensive farming system. With the advent of mechanization and emphasis on different crops, and decreasing numbers of small farms the need for housing in rural areas such as this has diminished and the structures are rapidly disappearing.

Known Cultural Resources within the Proposed Corridors

In addition to the four sites recorded during the sample survey, several others are known to be present within the project boundaries. The most obvious of these is the major mound and habitation site at Sassafras Ridge (15FU3). (Note that the area surrounding Sassafras Ridge was specifically exempted from the reconnaissance universe under Scope of Work paragraph C-5). Although 15FU3 has not yet been nominated to the National Register of Historic Places there is uniform support for its significance by all scholars who are familiar with its history and data potential.

Historic structures now plotted on the 1969 Bondurant Quadrangle are also located within the proposed corridor. Three historic structures are mapped along the A-C segment (within our Stratum 4). None are noted for the C-D segment above Fish Pond nor are there any recorded along the D-B segment (although 15FU66 was found in our Stratum 20). Segment C-D below Fish Pond passes the Corner Stone Church (Stratum 23) and two other historic structures in our Stratum 28.

It is worth recalling that much of the proposed corridor falls within the 2 km x 4 km area around Sassafras Ridge that was the focus of Carstens' remote sensing study. While only a small percentage of the total area was ground checked, Carstens' success in those areas is substantial enough to warrant further attention. Carstens' project area duplicates the upper two-thirds of our A-C segment, 80% of the C-D segment below Fish Pond and 90% of the D-B segment (1980:Figure 10). This means that over 50% of the current project corridors have been the subject of a tested remote sensing program. All of our corridors within Carstens' project area were clear of vegetation (with the exception of narrow strips along Pond Slough). One anomaly was identified within the southern C-D right-of-way described as a "dark circular stain located on a medium gray background" (Carstens 1980:51) (15FU53). None were recorded for the A-C or D-B segments. While Carstens' study does provide a general basis on which to predict the occurrence of certain classes of sites (Carstens 1980:37-38) it can never replace basic on-the-ground reviews of project areas. Witness that all four of the sites newly recorded by us are located within the bounds of the aerial archeology program -- none of which were recognized as anomalies.

Nature of Cultural Resources within the Remainder of the Proposed Corridors

From our review of existing literature, unpublished extant data and manuscripts and from our general knowledge of the nature of the cultural resources which occur in the region, we have developed a series of predictive statements which focus specifically on the project area. Future field investigation should be aimed at refining, discarding or supporting these hypotheses.

1. No significant prehistoric or historic cultural resources will be found along the C-D segment above Fish Pond.
2. Small specialized activity-extractive sites exist within the project area:

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- a. Specialized activity sites will occur in higher frequencies along and above the 295' contour.
 - b. Specialized activity-extractive sites will occur in lower frequencies below the 295' contour.
3. Recent historic dumping sites (post A.D. 1920) will be the predominant site type observed in all segments of the project corridor.
4. Modern agricultural practices (e.g., clearing, land leveling and intensive cultivation) have damaged and/or destroyed cultural resources present.
5. Unscientific collecting from recorded prehistoric sites has occurred within the project area (e.g., 15FU3).
6. Based on the 27 January 1983 records check by the Office of the State Archaeologist (Clay 1983) a small number of prehistoric archeological sites are currently on record within the project corridor:
- a. Two sites are known and several more will be found within the corridor along the less disturbed portions of Pond Slough and along the southern edge of Fish Pond.
 - b. Archeological sites may or may not occur along the artificial drainage corridors above Fish Pond and along segment D-B.
7. The presence or absence of certain landforms within the project corridors increases/decreases the likelihood of locating cultural resources:
- a. The presence of natural levee soils along Pond Slough and Fish Pond increases the probability of sites.
 - b. The absence of higher landforms in other parts of the project area decreases the likelihood of locating cultural resources.
8. The areas along the A-C, C-D (below Fish Pond) and D-B segment characterized by higher elevations and parts of natural levee systems have a high probability of containing prehistoric and historic cultural resources:
- a. Sites which do occur in these areas will reflect short term specialized activities, as well as more permanent occupations.
 - b. Some sites found in these areas may also contain intact subsurface remains as well as plowzone deposits.
9. The complete lack of natural levees or higher elevations along the C-D segment above Fish Pond decreases the probability that any but the most limited activities took place in this area during both prehistoric and historic times:
- a. Sites which do occur in this part of the project will reflect short term specialized activities.
 - b. No sites with evidence of permanent occupations will be found.

- c. Sites which are found will probably be limited to the plowzone and contain only disturbed deposits.
 - d. No intact archeological deposits are likely to be present.
10. Based on a 15 February 1983 records check by the State Historic Preservation Officer, it is unlikely that any historic sites of architectural or historic significance will be located within the project corridor.
 11. Based on our review of the relevant USGS quadrangle, there are several historic building sites within the project corridor:
 - a. Many of these building sites will still be standing or in use.
 - b. Many of these building sites will have been dismantled or otherwise destroyed, leaving only archeological and archival evidence for their existence.
 - c. Few, if any, of these historic resources will have National Register significance.
 12. Few, if any, significant cultural resources will be found along the D-B segment.
 13. The natural levee portion of Pond Slough and Fish Pond have the highest probability of containing significant cultural resources.
 14. Most, if not all, of the archeological sites recorded during the field survey will be small, shallow, plowzone lithic scatters with few or no diagnostic artifacts.
 15. There are no Pale-Indian Period sites on record within the project area and there is little potential for locating sites of this period within the project limits.
 16. There are no Archaic Period sites on record within the project area and there is little potential for locating sites of this period within the project limits.
 17. In general, very little pottery (usually an indication of some site permanence) will be found from archeological sites within the project corridor.
 18. Only 12 sites (Table 2) have been assigned a Woodland Period cultural affiliation within the Bondurant Quad and it is probable that sites of this time period will be recorded in the project area.
 19. Sites which may be present representing the Woodland Period will exhibit pottery of the Baytown (grog-tempered) tradition rather than of the Barnes (sand-tempered) tradition.
 20. There is one Mississippi Period site on record within the project area (15FU3) and it is likely that other loci of this prehistoric cultural period exist within the project limits.
 21. Several previously recorded sites have both prehistoric and historic cultural affiliations and it is likely that other sites with these components will be located within the project limits.
 22. Lithic cultural materials have been recovered and/or observed at all previously recorded sites within the project limits and it is very

probable that lithic materials will predominate the cultural assemblages recovered at any newly discovered prehistoric sites.

Project Impacts

The specifics of the proposed drainage program are not well defined at the present time. This situation makes the assessment of potential project impacts to those cultural resources which are or may be located within the selected corridor difficult at best. If project boundaries remain as those outlined by the District on the Bondurant Quad included as Figure 2) several recorded cultural resources will be adversely impacted including 15FU3, 15FU53, 15FU55 and 15FU64. Slight modifications to the proposed design may eliminate some or all of the potential impacts.

Recommendations

Based on all of the data to which we have had access, on our understanding of the needs of the District and on our assessment of the cultural resources within and around the project area, we have developed a series of recommendations for further investigations and possible project alterations.

1. National Register documentation should be assembled for the major Woodland/Mississippi mound site (15FU3) below Fish Pond.
2. Every effort should be made by the District to avoid adversely impacting 15FU3 through project redesign in this area.
3. The district should consider preservation of 15FU3 in concert with the Kentucky Department of Transportation and their authority under the Great River Road legislation (P.L. 93-87).
4. Subsurface testing should take place at 15FU55 and 15FU64 so that data relating to their National Register significance can be assembled.
5. An intensive field survey of all project segments should be conducted prior to project implementation.
6. Continued communication by the District with Kentucky's Office of State Archaeology and its State Historic Preservation Officer should take place.

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APPENDIX A

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SECTION C - DISCRPTIONS/SPECIFICATIONS

SCOPE OF WORK

Reconnaissance Level Investigation of Item Nos. 2 and 3 Above Lake No. 9, Reelfoot Lake, Fulton County, Kentucky

C-1. INTRODUCTION

C-1.1. The Contractor shall conduct a reconnaissance level investigation of Item Nos. 2 and 3 above Lake No. 9, Reelfoot Lake, Fulton County, Kentucky and prepare a detailed report of results. These tasks are in partial fulfillment of the Memphis District's obligations to cultural resources under the National Historic Preservation Act of 1966 (P.L. 89-565); the National Environment Policy Act of 1969 (P.L. 91-190); Executive Order 11593, "Protection and Enhancement of Cultural Environment," 13 May 1971 (36 F.R. 3921); Preservation of Historic and Archaeological Data, 1974 (P.L. 93-291) as amended; the Advisory Council on Historic Preservation, "Procedures for the Protection of Historic and Cultural Properties" (36 CFR VIII Part 800); as outlined in the following Scope of Work.

C-1.2. The primary purpose of the Cultural Resources report is to serve as a planning tool which aids the Corps in meeting its obligations to preserve and protect our true cultural heritage. It 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 professional studies. As such, the report's content must not only be descriptive but also analytic in nature.

C-1.3. The cultural resource reconnaissance shall focus on the areas described in the project description. The study shall consist of a series of tasks, including: a comprehensive review of existing literature and records; a field examination of sufficient intensity to assess the quantity and nature of cultural resources in the project area; an evaluation of the potential direct and indirect impacts upon cultural resources within the project area; an evaluation of the design alternatives in view of the potential quantity and nature of the cultural resources; and preparation of a comprehensive reconnaissance report.

C-1.4. The reconnaissance level investigation shall focus on the areas described in the project description. The study shall consist of a series of tasks, including: A review of existing documentation; a comprehensive, systematic and detailed physical examination of the project area in order to locate and describe all the cultural resources which may be present and preparation of a comprehensive report of all results and recommendations.

C-1.5. 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 the disciplines of archaeology, history, architecture, paleontology, geology and other social sciences as required. Techniques and methodologies used for the study shall be representative of the state of current professional knowledge and development.

C-1

C-1.6. 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.

C-2. DEFINITIONS

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

C-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 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.

C-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.

C-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 archaeological 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.

C-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 alternate plans under consideration. Normally reconnaissance will involve the intensive examination of a percent of the total proposed impact area, as determined by the Contracting Officer.

C-2

C-2.6. "Significance" is attributable to those cultural resources of historical, architectural, or archaeological 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 How to Complete National Register Forms and made a part hereof.

C-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.

C-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 of cultural loci which contribute to their significance.

C-3. GENERAL PERFORMANCE SPECIFICATIONS

C-3.1. 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 contribute to an understanding of the overall cultural and environmental history of the study area. It is axiomatic that the background and literature search should precede the initiation of all field surveys.

b. Information and data for the literature search shall be obtained from but not limited to 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) Archaeological Site Files at local universities, the State Historic Preservation Office, the State Archaeologist; (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, geology, geomorphology, astronomy, and paleontology; (7) consultation with area collectors and historians.

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.

C-3

d. The background and literature search shall be performed in such a manner as to provide sufficient information to help select the parameters within which the intensive survey will be conducted. The gathered data should facilitate predictive statements (to be included in the study report) concerning the probable quantity, character, and loci of cultural resources within the project area. In addition, data obtained in the background and literature search should be of such scope and depth as to be of use in subsequent field work and analysis in the project area undertaken for the purpose of discerning the character and significance of identified cultural resources.

e. In order to accomplish the objectives described in paragraph d above, it will be necessary to attempt to establish a relationship between observable landforms and their adaptive patterns of utilization by successive groups of human inhabitants. This task would involve defining and describing the various general physiographic zones of the study area with specific reference to topography, soils, environment (paleo), geology, and river channel history.

C-4. RECONNAISSANCE

C-4.1. The primary objective of the reconnaissance level investigation will be to assess the degree and extent of impact on cultural resources of the proposed project alternatives described in paragraph C-5. The reconnaissance shall be of such a magnitude and nature as to provide predictive statements, to be included in the study report, concerning the numbers, types, and distribution of various cultural resources throughout the study area.

C-4.2. Unless otherwise documented by the background and literature search, an underlying assumption guiding the formulation of the sampling design utilized in the reconnaissance level investigation is that sites are located relative to such variables as environmental features and that past cultures located their sites in adaptive relation to these variables. It is, therefore, axiomatic that sites are not distributed randomly across landscapes.

C-4.3. Unless a lesser fraction is determined by the Contracting Officer to be appropriate, the reconnaissance level investigation will examine a 15 percent sample of the entire project area. The project areas will be examined in such a manner that both alternate routes (as described in paragraph C-5) will be sufficiently covered to provide the required information described in paragraphs C-4.5 and C-3.1.d.

C-4.4. The Contractor shall be required to submit a sampling design incorporating data gathered during the background and literature search for review and acceptance by the Contracting Officer before the initiation of the field survey. The text of the sampling design shall be incorporated into the report of reconnaissance investigations.

C-4

The use of probability sampling procedures is highly encouraged. If such procedures are employed, the Contractor should exercise caution in insuring that it is possible, within the terms of this contract, to implement the statistically valid sampling design submitted. Due consideration should be given, during the formulation of the sampling design, to such factors as vegetal ground cover, landforms, probable weather conditions and the nature and extent of analysis and fieldwork necessary to arrive at supportable predictive statements concerning cultural resources in the project area. The sampling design should include a discussion of such factors as the types and sizes of sample units to be employed (ex: quadrats or transects) as well as the types of data retrieval (ex: screened shovel units, surface observational units) to be used. Unless otherwise approved by the Contracting Officer, field data retrieval techniques shall be consistent with paragraphs C-4.6 through C-4.10, as appropriate, of this Scope of Work. The sampling design should also address the nature of planned sampling procedures (stratified proportional, stratified disproportional, systematic, etc.) and the rational(s) for their use in view of known data including that obtained in the background and literature search.

C-4.5. Data resulting from the reconnaissance shall be of a depth and quality to allow discussion in general terms, recommendation for further study and testing and, where appropriate, the project cost and time requirements of legally mandated cultural resource studies of various proposed construction alternatives in the study area.

4 6 C-4.6. Site Specific Investigations. All cultural resources discovered within sample units/areas shall be examined by methods consistent with the following requirements:

(a) Site Boundaries

Horizontal site boundaries shall be derived by the use of surface observation procedures (where surface conditions are highly conducive to the observation of cultural evidence) or by screened shovel cut units or by a combination of these methods. The delineations of horizontal sites boundaries may be accomplished concurrently with the collection of other data consistent with paragraph C-4.8. Site boundaries shall be related to a site datum and permanent reference point as described in paragraph C-4.8.

(b) Surface Data Retrieval

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 record 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 test units shall be used to augment surface collection procedures.

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 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 discrete 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 reconnaissance report, the rational for the number and distribution of collection units. In the event that the Contractor 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.

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 prerequisite to an adequate site-specific and intersite evaluation of data.

C-4.7. Unless excellent ground visibility (above 75 percent) 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. Shovel test pits shall be minimally 30 x 30 centimeters in size and extend to a minimum depth of 50 centimeters. All such units shall be screened using 1/4 mesh hardware cloth. Additional shovel test pits or visual examination, as appropriate, shall be undertaken in areas judged by the Contractors Principal Investigator and/or field supervisor to display a high potential for the presence of cultural resources. If, during the course of reconnaissance 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.

C-4.8. When cultural remains are encountered, horizontal site boundaries shall be derived by appropriate archaeological methods in such a manner as to allow precise location of site boundaries on Government project drawings and 7.5 minute U.S.G.S. quad maps when available. Methods used to establish site boundaries shall be discussed in the survey report together with the probable accuracy of the boundaries. The Contractor shall establish a datum at the discovered cultural loci which shall be precisely related to the site boundaries as well as to a permanent reference point (in terms of azimuth and distance). 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 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.

C-4.9. The Contractor shall examine all sites encountered in the reconnaissance sufficiently well to determine the approximate size, nature and quantity of site surface data. Data collection shall be of sufficient scope to provide information requested on state site forms.

C-4.10. During the course of the reconnaissance, the Contractor should observe and record local environmental, physiographic, geological or other variables (including estimates of the percentage of ground visibility and descriptions of soil characteristics) which may be useful in evaluating the effectiveness of survey procedures and providing comparative data for use in predictive statements which may be utilized in future cultural resource surveys in the Fulton County, Kentucky, area.

C-4.11. Analysis and Curation. All recovered cultural items shall be cataloged in a manner consistent with state requirements or standards of curation in the state in which the study occurs. The Contractor shall consult with appropriate state officials as soon as possible following the conclusion of fieldwork in order to obtain information (ex: accession numbers) prerequisite to such cataloging procedures. The Principal Investigator shall have access to a depository for notes, photographs and artifacts (preferably in the state in which the study occurs) where they will be permanently available for study by qualified scholars. If such materials are not in Federal ownership, applicable state laws, should be followed concerning the disposition of the materials after completion of the report.

C-4.12. The Contractor shall prepare a report reflecting the study results in such a manner as to accomplish the tasks described in paragraphs 1.3 and 1.4. The report shall meet the specifications detailed in Section 4 of this Scope of Work.

C-4.13. 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. Viteae of supervisory personnel involved in project activities will be required by the Contracting Officer at the time the proposal is submitted.

C-4.14. 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.

C-4.15. No mechanical power equipment shall be utilized in any Cultural Resource activity without specific written permission of the Contracting Officer.

C-4.16. When sites are not wholly contained within the right-of-way limits, the Contractor shall survey an area outside the right-of-way limits large enough to include the entire site within the survey area. This shall be done in an effort to delineate site boundaries and to determine the degree to which the site will be impacted.

C-4.17. The Contractor shall keep standard field records which may be reviewed by the Contracting Officer. These records may include but are not limited to field notebooks, state approved site survey forms or any cultural resource form and/or records, field maps and photographs.

C-4.18. To conduct the field investigation, 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, or agent, prior to effecting entry on such property.

C-4.19. The Contractor assumes all responsibility for liabilities incurred to his personnel, equipment or to properties being studied during the course of this study.

C-4.20. Methods utilized in accomplishing the tasks described in this Scope of Work shall be coordinated with the Contracting Officer for District Archaeologist as appropriate. The Contracting Officer reserves the right to have a representative of the Memphis District present during the data gathering phases of the described cultural resource project.

C-4.21. The Contractor shall designate in writing the name of the Principal Investigator. The Principal Investigator shall sign the final report and, in the event of controversy or court challenge, shall testify with respect to report findings.

C-4.22. The Contractor shall furnish expert personnel to attend conferences and furnish testimony in any judicial proceedings involving the archaeological and historical study, evaluation, analysis and report. When required, arrangements for these services and payment thereof will be made by representatives of either the Corps of Engineers or the Department of Justice.

C-4.23. Neither the Contractor nor his representatives shall release any sketch, photograph, report or other material of any nature obtained or prepared under this contract without specific written approval of the Contracting Officer.

C-5. PROJECT DESCRIPTION

The reconnaissance survey will be of an area that begins at Pond Slough (Point A) about 1.5 miles (2,414.0 meters) northward of the Sassafras Ridge Community of Fulton County, Kentucky, Bondurant, KY-40-7N (SE/4 Bayouville 15 minute) quadrangle. Two alternate routes are indicated in the vicinity of the natural swamp of Fish Pond. Alternate route No. 1 begins at Point A (Pond Slough) and proceeds (through Point C) northeastward around Fish Pond swamp to the northern extreme of the swamp and then progresses southeastward (through Point D) by south to Point B on the present authorized alignment. The total distance of alternate route No. 1 is 4.17 miles (6,711.0 meters). Alternate route No. 2 begins at Point C (5,000 feet, 1,524.0 meters northeast of Point A), and extends along the southern boundary of Fish Pond Swamp to within 800 feet (243.8 meters) of the house at the farm road intersection; from here the route turns southeast to point D (4,400 feet, 1,341.1 meters north of Point B). The project right-of-way will be 300 feet (91.44 meters) each side of the proposed centerline of channel. The two proposed alternate routes are indicated on the attached map. All areas total 5.99 miles (9,639.97 meters). The immediate area around site 15FU3 will be excluded from the 15 percent sample area.

C-6. GENERAL REPORT REQUIREMENTS

C-6.1. In compliance with Section 9 of the Archeological Resources Protection Act of 1979, reports or other information made available to the general public shall not contain specific locations of cultural resources so as to preclude vandalism.

C-6.2. Upon completion of all field investigation and research, the Contractor shall prepare reports detailing the work done, the results, and the recommendations for the project area. It is recommended that the format suggested by Specifications for Archeological Reports Phase I - Survey and/or Preliminary Testing as prepared by the Kentucky Historic Commission should be reviewed and, to the extent allowed by this Scope of Work utilized as an aid in preparing the required report.

C-6.3. The report shall include, but is not limited to, the following sections:

a. Title Page. The title page should provide the following information; the type of task undertaken, the cultural resources which were assessed (archeological, historical, architectural); the project name and location (county and state), the date of the report; the Contractor's name; the contract number; the name of the author(s) and/or the Principal Investigator; and the agency for which the report is being prepared.

b. Abstract. The abstract should include a summary of the number and types of resources which were surveyed, results of activities and the recommendations of the Principal Investigator.

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 (preferably a 7.5 U.S.G.S. map) and a project map (no site locations will appear in the report); and the dates during which the task was conducted. The Introduction shall also contain the name of the institution where recovered materials will be curated.

e. Environmental Context. This section should contain a description of the past and present environment of the study area, and it should be of a length commensurate with other sections of supporting type of information.

f. Previous Research. This section shall describe previous research which may be useful in deriving or interpreting relevant background research 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 and any personal interviews that were conducted during the course of the testing. The interviews must demonstrate appropriate contact with previous researchers of the area and those generally known to the cultural resources community to have knowledge of the study area.

h. Survey and Analytical Methods. This section shall contain an explicit discussion of research and/or survey strategy. It should also describe such items as the areas examined, the methods used, and the grid interval used.

i. Survey and Analytical Results. This section should describe archaeological, architectural, and historical resources surveyed and analyzed, the nature of analyses, and the scientific importance or significance of the site. Quantified listings and descriptions of artifacts and their proveniences may be included in this section or added to the report as an appendix. Inventoried sites shall include a site number.

j. Recommendation.

This section should contain the recommendations of the Principal Investigator based on the significance and degree of impact of the project on the Cultural Resources. Assessment should be at a level sufficient to accomplish the objectives described in paragraphs C-1.2 and C-1.4.

k. References (American Antiquity style).

1. Appendices (Maps, correspondences, etc.).

C-6.4. The above items do not necessarily have to be discrete sections; however, they should be readily discernable to the reader. The detail of the above items may vary somewhat with the purpose and nature of the study.

C-6.5. All maps which indicate or imply actual site locations shall be included in reports as a readily removable appendix (ex: envelope). In order to prevent potential damage to cultural resources, no information shall appear in the body of the report which would suggest resource location.

C-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.

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

C-6.8. All information (including typologies and other classificatory units) not generated in contract research activities shall be appropriately referenced.

C-6.9. The report shall contain site specific maps of publishable quality. Site maps shall indicate site datum(s), location of data collection units (including shovel cuts 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.

C-6.10. Information shall be presented in textual, tabular, and graphic forms, whichever are most appropriate, effective and advantageous to communicate necessary information. The Contractor shall give every consideration to the use of non-textual forms of presentation, particularly profiles (cross-section) drawings in combination with maps, to maximize the quantity and quality of information per page.

C-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.

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

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

C-6.14. All measurements should be metric. If the Contractor's equipment is in the English system, then the metric equivalents should follow in parentheses.

C-6.15. Diagnostic and/or unique artifacts shall be shown by drawing or photographs.

C-6.16. Black and white photographs are preferred except when color changes are important for understanding the data being presented. No Polaroid or instant type photographs may be used.

C-6.17. Negatives of all black and white photographs and/or color slides of all plates included in the final report shall be submitted so that copies for distribution can be made.

C-7. SUBMITTALS

C-7.1. The Contractor shall submit with the proposal, the vitae of the principal investigator, any consulting professionals, and personnel serving in a supervisory capacity in either field or laboratory situations.

C-7.2. The Contractor shall demonstrate that he can provide, or have access to the following capabilities:

a. Adequate nonexpandable field equipment necessary to conduct the necessary field work.

b. Adequate laboratory and office space and facilities necessary for proper treatment, analysis and storage of specimens and records likely to be obtained from a given project. This does not necessarily include such specialized facilities as pollen, geochemical, or radiological laboratories, but does include facilities sufficient to properly preserve or stabilize specimens for any subsequent specialized analysis.

c. Adequate long-term storage and curation capabilities or all the data obtained as a result of this study such that the data will be available to scholars and other appropriate users.

C-7.3. The Contractor shall, unless delayed due to causes beyond his fault or negligence, complete all reports within the following time limitations after receipt of notice to proceed.

(1) Six (6) copies of the draft technical report will be submitted within 50 calendar days following the notice to proceed.

(2) The Government shall review the draft technical report and provide comments within 30 calendar days after receipt of the draft technical report.

(3) An original and 25 copies of the final technical report shall be submitted within 30 calendar days following the Contractor's receipt of the Government's comments on the draft technical report.

(4) If the Government review exceeds 30 calendar days, for each submittal, the period of service of the purchase order shall be extended on a day-by-day basis equal to any additional time required by the Government for review.

C-7.4. The Contractor shall submit under separate cover 10 bound copies of the background data with the draft report which shall include appropriate 15' quadrangle maps (7.5' when available) and other site drawings which show exact boundaries of all cultural resources within the project area and their

relationship to project features, and all forms, records and photographs detailed in paragraphs C-4.16 and C-6.17. The contractor shall submit one original of the background data with the final report and one set of the photo contact sheets. If any revisions of the background data are required after draft review, an additional 10 copies of the background data with one original incorporating the appropriate revisions in response to the Contracting Officer's comments shall be submitted.

C-7.5. The Contractor shall prepare and submit with the final report, a site card for each identified resource or aggregate resource. These site cards do not replace state approved prehistoric, historic, or architectural forms or Contractor designed forms. This site card shall contain the following information, to the degrees permitted by the type of study authorized:

1. site number
2. site name
3. location: section, township, and UTM coordinates (for procedures in determining UTM coordinates, refer to How to Complete National Register Forms, National Register Program, Volume 2.)
4. county and state
5. quad maps
6. date of record
7. description of site
8. condition of site
9. shovel/test results
10. typical artifacts
11. chronological position (if known)
12. relation to project
13. previous studies and present contract number
14. additional remarks

The information shall be typed on 5 X 8 inch color coded cards. White cards shall be used for archeological sites, blue cards for historical sites, green cards for architectural sites and yellow cards for sites eligible for or placed on the National Register of Historic Places.

C-7.6. Any artifacts that may be recovered as a result of the work pursuant to this agreement will be considered temporary property of the Contractor.

C-13

Final disposition of the artifacts will be the result of an agreement between the Federal Government, the official state authorities, the local academic community, the land owner, and the Contractor.

C-8. SCHEDULE

C-8.1. 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>	Due Date (Beginning with acknowledged date of receipt of notice to proceed)
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Reconnaissance of Lake 9 Kentucky Begins	10 calendar days
Submittal of Draft Report	50 calendar days
Government Review of Draft Reports	80 calendar days
Contractor's Submittal of Final Reports	120 calendar days

C-8.2. The Contractor shall make any required corrections after review by the Contracting Officer of the reports.

C-9. PERIOD OF SERVICE

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 not later than 120 days after acknowledged date of receipt of Notice to Proceed. In the event that any of the government review periods are exceeded and upon request of the Contractor, the contract period will be extended on a calendar day for day basis. Such extension shall be granted at no additional cost to the Government.

C-10. METHOD OF PAYMENT

C-10.1. Upon satisfactory completion of work by the Contractor, in accordance with the provisions of this purchase order, and its acceptance by the Contracting Officer, the Contractor will be paid the amount of money indicated in Block 25 of the purchase order.

C-10.2. 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.

C-14

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 purchase order.

C-10.3. Prior to settlement upon termination of the purchase order, and as a condition precedent thereto, the Contractor shall execute and deliver to the Contracting Officer a release of all claims against the Government arising under or by virtue of the purchase order, other than such claims, if any, as may be specifically excepted by the Contractor from the operation of the release in stated amounts to be set forth therein.

C-11. PROFESSIONAL STANDARDS FOR PERSONNEL

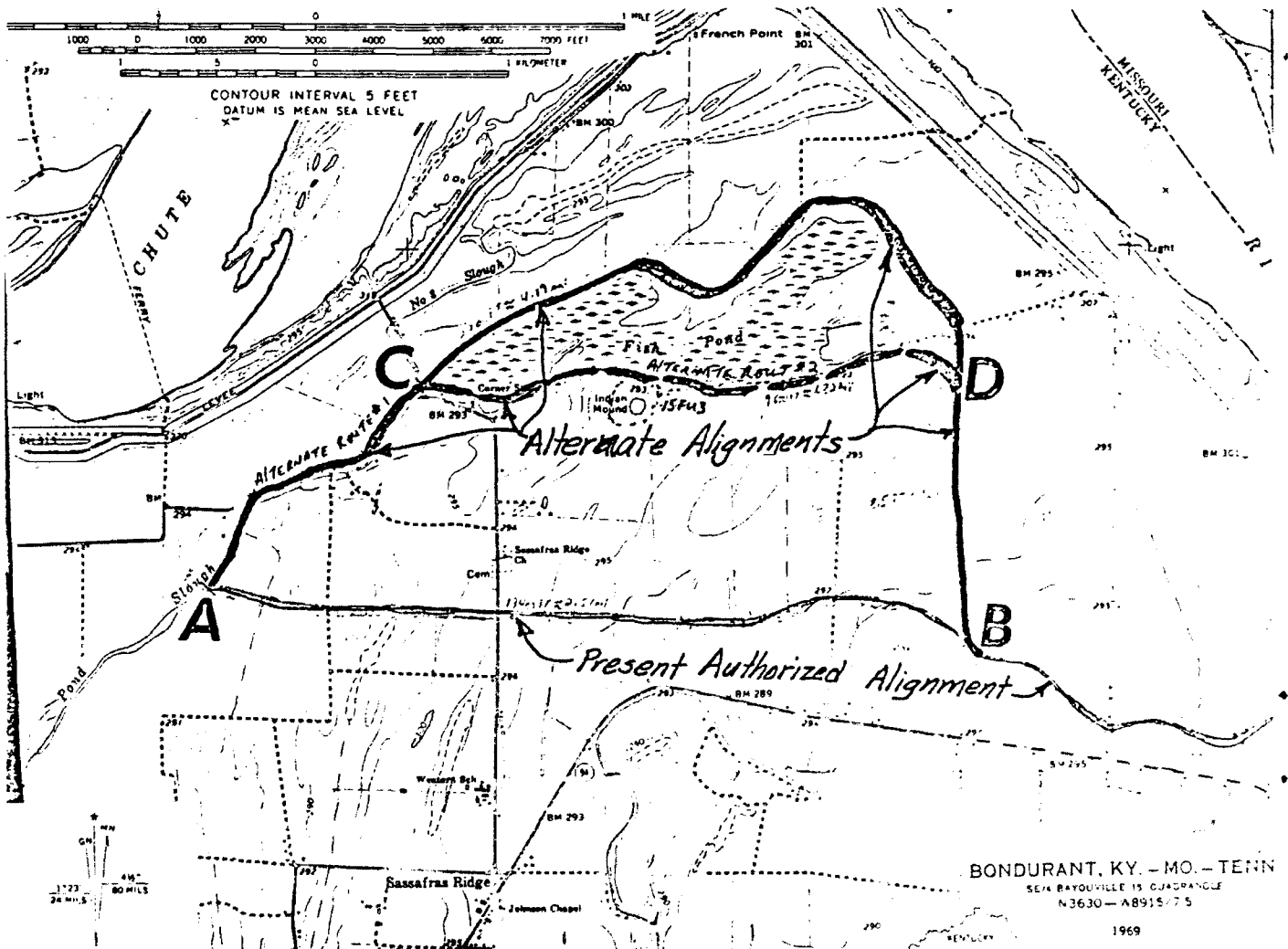
a. Archaeological Project Directors or Principal Investigators (PI). Persons in charge of an archaeological project or research investigation contract, in addition to meeting the appropriate standards for an archaeologist, must have a publication record that demonstrates extensive experience in field project formulation, execution and technical monograph reporting. Suitable professional references may also be made available to obtain estimates regarding the adequacy of prior work. If prior projects were of a sort not ordinarily resulting in a publishable report, a narrative should be included detailing the proposed project director's previous experience along with references suitable to obtain opinions regarding the adequacy of this earlier work.

b. Archaeologist. The minimum formal qualifications for individuals practicing archaeology as a profession are a B.A. or B. Sc. degree from an accredited college or university, followed by 2 years of graduate study with concentration in anthropology and specialization in archeology during one of these programs, and at least two summer field schools or their equivalent under the supervision of archaeologists of recognized competence; a Master's thesis or its equivalent in research and publication is highly recommended, as is the M.A. degree. Individuals lacking such formal qualifications may present evidence of a publication record and references from archaeologist who do meet these qualifications.

c. Standards for Consultants. Personnel hired or subcontracted for their special knowledge and expertise must carry academic and experiential qualifications in their own fields of competence. Such qualifications are to be documented by means of vitae attachments to the proposal or at a later time if the consultant has not been retained at the time of proposal.

d. Other Supervisory Personnel. Persons in any archaeological supervisory position must hold a B.A., B. Sc. or M. S. degree with a concentration in archaeology and a minimum of 2 years of field and laboratory experience (which may include field school). Vitae must document competency in the position assigned for this contract.

e. Crew Members. All crew members must have prior experience comparable to the tasks to be performed under this contract. An academic background in archaeology/anthropology is highly recommended.



RECEIVED
1/31/83

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY 40506

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ANTHROPOLOGY

Jan.27, 1983

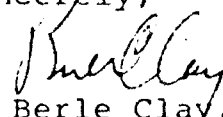
Mr. Timothy C. Klinger, Director
Historic Preservation Associates
P.O. Box 1064
Fayetteville Arkansas 72702

Dear Tim:

I am enclosing a zerox of our file map for your project area and a print out for the Bondurant quad. Sites in the Fu 50's and 60's are from a remote sensing project done with S and P funds by Dr. Kenneth Carstens (Soc./Ant.) Murray State University. Although the site forms have been filed here, they have not been entered into the site file nor has a final report been submitted. I would consider these sites for the moment as unidentified and unassessed. I hope given the coding form that the other information on the printout will be self-explanatory. There has been no archaeological testing to mention in this area and the site reports are based on survey information alone. The 300 series sites were located by Dr. Jack Schock (Western Ky. Univ.) for the earlier Corps survey of the drainage project. This report was severely criticised at several levels and I believe that it has never been "accepted" thus the status of the assessments made in it is unknown. If you find anything out about this evaluation please let me know. You should be aware too that KYDOT has been planning a segment of the Great River Road through this area. The results of their archaeological evaluations have not been made public and I expect were very superficial. I believe that their chosen alternate would follow near to the present alignment of KY 94.

I am enclosing two site forms. Please xerox them to make others for your self. Sites are filed with this office where are assigned state numbers before a report is submitted either here or to the SHPO. While we generally get copies of reports for review from the Corps Office, I would appreciate it if you could persuade them to allow you to file a finished copy in this office simultaneously with filling it in their office. This is simply so that we can keep our documentation up to date. Finally, copies of site forms, with state numbers, will be required by the SHPO. I am enclosing specifications for reports which we developed in cooperation with each other. These still hold. Please contact me if I can be of further service to you.

Sincerely,



AN EQUAL OPPORTUNITY UNIVERSITY. Berle Clay, Office For
State Archaeology



RECEIVED
2-19-83

HERITAGE

February 15, 1983

Mr. Timothy C. Klinger, Director
Historic Preservation Associates
P. O. Box 1064
Fayetteville, Arkansas 72702

Dear Mr. Klinger:

Thank you for your correspondence of January 25, 1983 requesting information on historic and cultural resources at Lake No. 9, Reelfoot Lake, Fulton County, Kentucky. Our review indicates that no properties currently listed on the National Register of Historic Places are within the project area. However, the Office of State Archaeology reports that two archaeological sites (15Fu3 and 15Fu53) are located along alternate alignment #2. For precise locations and additional information, you should contact the Office of State Archaeology at the Department of Anthropology, University of Kentucky, Lexington, Kentucky 40506.

I look forward to reviewing the archaeological survey report for this project.

Sincerely,

Mary Cronan Oppel, Director
Kentucky Heritage Council and
State Historic Preservation Officer

MCO:CDH/rm

cc: Dr. R. Berle Clay, OSA.

PROJECT PARTICIPANTS

ROBERT F. CANDE directed the fieldwork and laboratory analysis and authored various sections of the report. Mr. Cande received a B.A. in anthropology from East Carolina University in 1975 and is presently working toward an M.A. in anthropology at the University of Arkansas.

ROY J. COCHRAN, JR. assisted in laboratory analysis. Mr. Cochran received an M.A. degree in anthropology in 1979 from the University of Arkansas and is presently working toward a B.S. in computer science at the University of Arkansas.

SCOTT A. JONES assisted in the preparation of the project report. Mr. Jones received a B.A. degree in anthropology from the University of Arkansas in 1982.

RICHARD P. KANDARE participated in the fieldwork and authored various sections of the report. Mr. Kandare received a B.A. in anthropology from the State University of New York at Buffalo in 1976 and is presently working toward an M.A. in anthropology at the University of Arkansas.

TIMOTHY C. KLINGER served as the Principal Investigator for the project and authored various sections of the report. Mr. Klinger received an M.A. degree in anthropology in 1977 from the University of Arkansas and a J.D. from the University of Arkansas School of Law in 1982.

BERYL ROSENTHAL provided artifact illustrations for the report. Ms. Rosenthal is a Ph.D candidate in anthropology at the State University of New York at Buffalo.