MAYFIELD AND RED DUCK CREEKS

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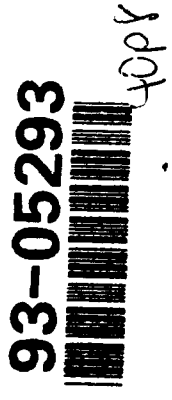

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A literature search was conducted. Two historic sites are located within the project impact zone and one has been determined eligible for the National Register of Historic Places. Four additional prehistoric sites are also on record as being within the project corridor.

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A Cultural Resources Literature Search of the Mayfield and Red Duck Creek Corridors in Ballard, Carlisle, McCracken and Graves Counties, Kentucky

by

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and
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October 1984

Historic Preservation Associates Reports 84-8

Report submitted to the Memphis District Corps of Engineers
in accordance with Purchase Order No. DACW66-84-M-1344

ABSTRACT

The investigations described in this report focus on a background and literature search for existing data relating to cultural resources which are, or may be, found within the corridors along Mayfield Creek and Red Duck Creek in Ballard, Carlisle, McCracken and Graves counties, Kentucky. Two historic sites are located within the project direct impact zone (15Gv28 and 15Bal04) and one has been determined eligible for the National Register of Historic Places (15Bal04). Four additional prehistoric sites are also on record as being within the project corridor (15Bal0, 15Bal05, 15Ce5 and 15McN5).

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BACKGROUND AND PURPOSE OF THE REPORT

In June 1984, the Memphis District of the U. S. Army Corps of Engineers (COE) asked Historic Preservation Associates (HPA) to submit a quotation for a literature and records search of the Mayfield Creek and Red Duck Creek project areas in southwest Kentucky. On 8 June 1984 the HPA quote was forwarded to the Memphis District. Purchase Order No. DACW66-84-M-1344 was issued 22 June 1984 and was received by HPA on 29 June 1984.

The purpose of this report is to document the results of our search of the relevant literature and records relating to the project area as required by the Scope of Work (Appendix A). The structure and content of the report adhere to the guidelines contained in The Management of Archeological Resources: The Airlie House Report (McGimsey and Davis 1977), in Specifications for Archaeological Reports (dated 15 March 1979) as prepared by the Kentucky Historic Commission (Melton and Clay 1979) and in the Scope of Work (Section C-5).

Project Location and Dates of Investigations

The project area is located in Ballard, Carlisle, McCracken and Graves counties, Kentucky. Two separate but interrelated segments of the project are involved (Figure 1) and include 46.4 mi (74.7 km) of 1,000 ft (152.44 m) wide stream/ditch corridor (ca 5624.28 acres, 1138.72 ha). The investigation was begun 9 July 1984 and was completed with a draft report submitted in August 1984.

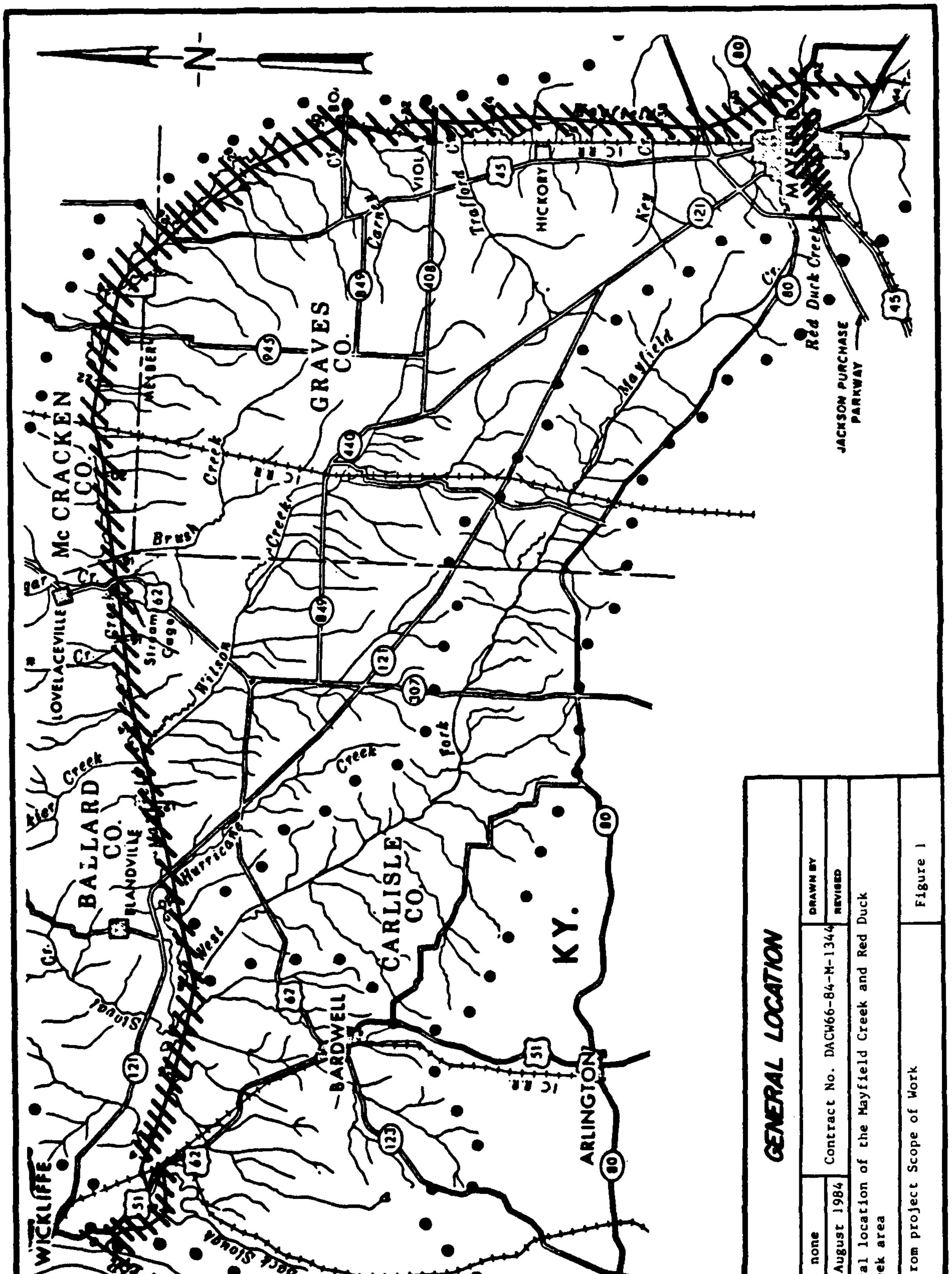
Project Sponsor and Participants

The overall project sponsor is the Memphis District, Corps of Engineers. The Contracting Officer for the program is Ms. Mildred H. Phillips and the archeological liaison is Mr. Jimmy D. McNeil of the District's Environmental Analysis Branch. Historic Preservation Associates has carried out the work reported on here. Mr. Timothy C. Klinger served as Principal Investigator and wrote the report along with Mr. Richard P. Kandare (Appendix B).

METHODS OF INVESTIGATION

A background and literature search is defined in the Scope of Work (Section C-3.2.) as a "...comprehensive examination of existing literature and records for the purpose of inferring the potential presence and character of cultural resources in the study area." This definition summarizes the direction of the present project. In an attempt to accomplish this goal, we have reviewed all relevant published and unpublished cultural resource manuscripts. We have also contacted the State Historic Preservation Officer and obtained a summary of his relevant records (Morgan 1984). The Office of State Archaeology (OSA) has likewise been consulted and a review of its records has been secured (Turnbow 1984).

In addition to these sources, relevant maps published by the U.S. Geological Survey have been reviewed. No records for this part of Kentucky were generated during the 19th century by the General Land Office. Dr. Kenneth C. Carstens of Murray State University's Department



GENERAL LOCATION

SCALE: none	
DATE: August 1984	Contract No. DACW66-84-M-1344
General location of the Mayfield Creek and Red Duck Creek area	
Map from project Scope of Work	Figure 1

of Sociology and Anthropology has been consulted as has Mr. Tom Gatus of the Kentucky Heritage Commission.

ENVIRONMENTAL SETTING

The Mayfield Creek and Red Duck Creek project area is located within the physiographic region of western Kentucky known as the Jackson Purchase (an area including Ballard, Carlisle, Hickman, McCracken, Fulton, Graves, Marshall and Calloway counties). Mayfield Creek and its Red Duck Creek tributary drain a major part of the region's central portion. The project extends through an area of several relatively recent landforms including loessal uplands, colluvial fans, a portion of the Mississippi alluvial floodplain and a major portion of the Mayfield and Red Duck Creek lowlands.

The project corridor has as its centerline the middle of the Mayfield Creek ditch which was altered sometime before 1932 as part of a comprehensive drainage program. The channel generally runs alongside of or in the old bed of Mayfield Creek. In a number of sections, however, the straight and true path of this man-made drainage does not follow the meanders of the natural stream.

Mayfield Creek and its tributaries flow into the Mississippi. The project area includes its mouth where it empties into the Mississippi River (Mile 0.0) approximately 1.3 mi (2.1 km) south of the city of Wickliffe, Kentucky. From this point the corridor follows the course of Mayfield Creek upstream for about 43.5 mi (70 km). At about Mile 1.9 the study area follows a dredged ditch which bisects an old railroad bed. This ditch is roughly oriented east-west and cuts through a large meander of Mayfield Creek. The ditch again merges with Mayfield Creek slightly west of the Highway 51 & 62 bridge. From this point the creek has a large meander loop up to about Mile 4.0. From about Mile 30.5 to Mile 4.0 the creek flows east to west. From Mile 43.5 to Mile 30.5 the flow is generally north-south and includes part of its headwaters southeast of the town of Mayfield. The portion of Red Duck Creek in the project area rises on the west side of the town of Mayfield and flows 2.9 mi (4.7 km) to the east where it empties into Mayfield Creek just beyond the Mayfield city limits.

Red Duck Creek drains a part of the adjacent loessal uplands. The upland topography is characterized by nearly level areas to relief in which the slopes range up to 10%. In contrast, the section of Mayfield Creek in the project area has a characteristic lowland topography with floodplains and swamps which range from being nearly level to level to being slightly depressed (Leighty 1953:3-5; Humphrey 1976:6-7).

A distinction between the two corridors is also evident in terms of soils associated with the different topographic features. Well drained rarely flooded soils comprise the highest percentage within the Red Duck Creek corridor (Leighty 1953), while the opposite is true for the Mayfield corridor (Table 1). Unfortunately, not all 4 counties have had soil surveys conducted by the Soil Conservation Service. Carlisle County has yet to have published data available on the distribution and characteristics of its soils. The borderline between Ballard and Carlisle counties follows the natural course of Mayfield Creek and because of this soil data to the north is published and available while soil data south of the stream bed remain unavailable. The almost straight line nature of the ditch and the meandering of the natural

TABLE 1
Characteristics of Soils Associated with the Project Corridors

PROJECT/ SOIL TYPE		LANDFORM	% SLOPE	DRAINAGE	FLOODING	OSA SOIL CODE
Mayfield Creek Mile 0.0 - 2.0 (Humphrey 1976)						
Av	Alluvial land,steep	flood plains & terraces	---	good to moderate	occasional	---
Nr	Nolin-Robinsville sl	flood plains	nearly level	good	common	217/170
CaA	Calloway sl	uplands & terraces	0-2	somewhat poor	---	35
Nd	Newark-Lindside scl	flood plains	nearly level	somewhat poor	occasional	152/124
Mayfield Creek Mile 2.0 - 4.0 (Humphrey 1976)						
Nd	Newark-Lindside scl	flood plains	nearly level	somewhat poor	occasional	152/124
Du	Dundee scl	terraces	nearly level	somewhat poor	common	70
Sh	Sharkey sc	flood plains	nearly level	poor	common	182
WhB	Wheeling sl	flood plains & terraces	2-6	well-drained	rare	208
Ay	Arkabutla sl	flood plains	nearly level	somewhat poor	common	234
Fc	Falaya-Collins sl	flood plains	nearly level	somewhat poor	common	84/47
Mayfield Creek Mile 4.0 - 6.0 (Humphrey 1976)						
Fc	Falaya-Collins sl	flood plains	nearly level	somewhat poor	common	84/47
Sw	Swamp	low lying areas	nearly level, level, depressed	standing water	underwater most of the year	---
Ag	Alligator sc	bottom lands	nearly level	poor	common	5
Mayfield Creek Mile 6.0 - 8.0 (Humphrey 1976)						
Ag	Alligator sc	bottom lands	nearly level	poor	common	5
Sw	Swamp	low lying areas	nearly level, level, depressed	standing water	underwater most of the year	---
Fc	Falaya-Collins sl	flood plains	nearly level	somewhat poor	common	84/47

TABLE 1 continued
Characteristics of Soils Associated with the Project Corridors

PROJECT/ SOIL TYPE		LANDFORM	% SLOPE	DRAINAGE	FLOODING	OSA SOIL CODE
Ro	Rosebloom sl	flood plains	nearly level	poor	common	235
Mayfield Creek Mile 8.0 - 10.00 (Humphrey 1976)						
Fc	Falaya-Collins sl	flood plains	nearly level	somewhat poor	common	84/47
Ro	Rosebloom sl	flood plains	nearly level	poor	common	235
Sw	Swamp	low lying areas	nearly level, level, depressed	standing water	underwater most of the year	---
Mayfield Creek Mile 10.0 - 12.0 (Humphrey 1976)						
Sw	Swamp	low lying areas	nearly level, level, depressed	standing water	underwater most of the year	---
Mayfield Creek Mile 12.0 - 16.0 (Humphrey 1976)						
Wa	Waverly sl	bottom lands of flood plains	nearly level	poor	common	202
Mayfield Creek Mile 16.0 - 20.0 (Humphrey 1976)						
Wa	Waverly sl	bottom lands of flood plains	nearly level	poor	common	202
Fc	Falaya-Collins sl	flood plains	nearly level	somewhat poor	common	84/47
Sw	Swamp (from mile 18.0 - 20.0)	low lying areas	nearly level, level, depressed	standing water	underwater most of the year	---
Mayfield Creek Mile 20.0 - 26.0 (Humphrey 1976)						
Wa	Waverly sl	bottom lands of flood plains	nearly level	poor	common	202
Fc	Falaya-Collins sl	flood plains	nearly level	somewhat poor	common	84/47

TABLE 1 continued
Characteristics of Soils Associated with the Project Corridors

PROJECT/ SOIL TYPE		LANDFORM	% SLOPE	DRAINAGE	FLOODING	OSA SOIL CODE
Mayfield Creek Mile 26.0 - 28.0 (Leighty 1953)						
Co	Collins sl	bottom lands	nearly level	moderate	common	47
Ws	Waverly sl	bottom lands	nearly level	poor	common	202
Bm	Beechy loam	bottom lands	nearly level	poor	common	---
Mayfield Creek Mile 28.0 - 30.0 (Leighty 1953)						
Ws	Waverly sl	bottom lands	nearly level	poor	common	202
Co	Collins sl	bottom lands	nearly level	moderate	common	47
Vs	Vicksburg sl	bottom lands	nearly level	well-drained	common	200
Mayfield Creek Mile 30.0 - 32.0 (Leighty 1953)						
Vs	Vicksburg sl	bottom lands	nearly level	well-drained	common	200
Co	Collins sl	bottom lands	nearly level	moderate	common	47
Ws	Waverly sl	bottom lands	nearly level	poor	common	202
Hm	Hymon loam	bottom lands	nearly level	somewhat poor	common	225
El	Eupora loam	bottom lands	nearly level	somewhat poor	---	223
Mayfield Creek Mile 32.0 - 34.0 (Leighty 1953)						
Co	Collins sl	bottom lands	nearly level	moderate	common	47
Vs	Vicksburg sl	bottom lands	nearly level	well-drained	common	200
Ws	Waverly sl	bottom lands	nearly level	poor	common	202
Wsm	Swamp	bottom lands	nearly level, level, depressed	standing water	underwater most of the year	---
Mayfield Creek Mile 34.0 - 43.5 (Leighty 1953)						
Ws	Waverly sl	bottom lands	nearly level	poor	common	202
Co	Collins sl	bottom lands	nearly level	moderate	common	47

TABLE 1 concluded
Characteristics of Soils Associated with the Project Corridors

PROJECT/ SOIL TYPE		LANDFORM	% SLOPE	DRAINAGE	FLOODING	OSA SOIL CODE
Vs	Vicksburg sl	bottom lands	nearly level	well-drained	common	200
Os	Richland sl	stream terraces	very gently sloping	somewhat poor	---	---
Red Duck Creek (Leighty 1953)						
Co	Collins sl	bottom lands	nearly level	moderate	common	47
Vs	Vicksburg sl	bottom lands	nearly level	well-drained	common	200
Ws	Waverly sl	bottom lands	nearly level	poor	common	202
Lgn	Eroded rolling phase	deep loessal smoother uplands	hilly & steep	well-drained	---	---
Gs	Grenada sl	deep loessal smoother uplands	2-5	somewhat poor	---	92
Bb	Briensburg sl	bottom lands	1-4	somewhat poor	---	224
Lcs	Severely eroded rolling phase	deep loessal smoother uplands	gently rolling	well-drained	---	---
El	Eupora loam	bottom lands	4	somewhat poor	---	223
S	Shannon loam	bottom lands	2	well-drained	---	---
Fl	Foltz loam	bottom lands	nearly level	poor	---	---
Lgr	Rolling phase	deep loessal smoother uplands	gently rolling	well-drained	---	---
Lg	Loring sl	deep loessal rougher uplands	gently undulating	well-drained	---	129

stream has an oscillating effect on the soil data for the section of the Mayfield Creek corridor from Mile 0.0 to Mile 18.0. From the available data it appears that a wide variety of soils related to alluvial deposits from the Mississippi and colluvial deposits washed from the adjacent uplands occur at the mouth of Mayfield Creek (Mile 0.0 - Mile 4.0). Soils associated with frequently flooded bottomlands are evident from Mile 4.0 to Mile 43.5. Along this stretch of lowlands are with several areas of swampland (Mile 4.0 - Mile 12.0, Mile 18.0 - Mile 20.0, Mile 32.0 - Mile 34.0). Among the handful of soil types distributed within this section the predominate one is Waverly silt loam which is characteristically poorly drained and commonly flooded (Humphrey 1976:6-7). Along the Red Duck corridor, on the other hand, are recorded a wide variety of soils which are well drained and rarely flooded (Leighty 1953:119-120). The unconsolidated sediments of the uplands were deposited during the Eocene, Pliocene and Pleistocene epochs (Olive 1974 cited in Stein, Carstens and Wesler 1983:135) while the sediments of the lowlands represent alluvial and colluvial deposits from upland erosion.

Soils in the project area formed under a dense forest of mixed hardwoods (Humphreys 1976:71). The uplands had a forest cover consisting of black, post, white, southern red and blackjack oaks and pignut and mockernut hickories. Other trees growing in the uplands included winged elm, dogwood, black cherry, shagbark hickory, black tupelo or blackgum, tulip tree, persimmon, sassafras, redbud and red, scarlet and shingle oaks along with some beech, chestnut and white ash. In the poorly drained bottom lands the original forest cover probably consisted mainly of sweetgum, pin, swamp white, swamp chestnut, overcup, black and southern red oaks, red and silver maples, shagbark hickory, American elm, some white, post, red, willow and shingle oaks, pignut and other hickories, winged elm, willow, sycamore, pawpaw, hawthorn and river birch. In the extremely wet and swampy areas of the lowlands associated with Mayfield Creek, vegetation such as cypress, willows, buttonbush, pin and overcup oaks, sweetgum, and in some places, water tupelo and willow oak create a canopy with aquatic plants forming the understory (Leighty 1953:8-9; Fowells 1965:672).

Such vegetation within the project area is indicative of a humid temperate climate (Humphrey 1976:70). The amenable climate combined with several microenvironmental zones present in the project area would have afforded a wide variety of plants and animals for human groups to exploit. In addition, Mayfield Creek would have allowed easy access by water to available resources in the uplands, along the creek bottoms and along the Mississippi floodplain.

GENERAL CULTURAL BACKGROUND

This part of western Kentucky has probably been populated over most of the past 12,000 years. During these times the natural environment has supported a variety of groups, from bands of prehistoric hunters to present day farmers. The same stream that once served as a waterway for Mississippian Indians 500 years ago now is used by modern fishermen and sportsmen. All of this points to a complex and not well understood cultural background for the region.

Syntheses of the prehistoric sequence in western Kentucky have been presented by numerous authors, but all tend to follow the general focus of Carstens' (1982a:11-15) discussion (see e.g., Klinger, Cande and Kandare 1983:16-20; Martin 1979). All agree on the basic scheme of fluted projectile points of the Paleo-Indian Period, side and corner notched points associated with the Archaic Period, stemmed projectile points and grog or sand tempered ceramics of the Woodland Period and arrow points and shell tempered ceramics associated with the Mississippi Period (also referred to at times as the Late Prehistoric Period).

REVIEW OF THE USGS DATA

An early 15' quadrangle map of Wickliffe, MO-KY-IL published in 1939 shows only a portion of the project area from Mile 0.0 to about Mile 7.5 along Mayfield Creek. Three cultural features appear on the map within the corridor including a road (Highway 51), a railroad (Illinois Central) and a transmission line (Kentucky Utilities Company).

The project extends over 8 USGS quads including Blandville, KY (1977); Farmington, KY (1951 photorevised 1971); Hickory, KY (1969); Lovelaceville, KY (1978); Mayfield, KY (1969 photorevised 1983); Melber, KY (1982); Westplains, Ky (1969); and Wickliffe, KY-MO (1970). In addition to the actual project locations, the maps also identify then existing structures which could be affected if they extend to within the proposed corridors.

Ninety-one structures are identified within 500 ft of the existing ditch centerline of Mayfield and Red Duck creeks (Table 2). Forty-four structures have been identified within or on the edge of the 1000 ft wide corridor along Mayfield Creek including 15 highways or roads, 4 railroad crossings, 4 pipelines, 3 transmission lines, 12 buildings, 2 depressions or pits, 2 sewage treatment structures and 1 gaging station. Locational information is assembled in Table 2 according to the mile interval within which the features fall, the county that they are in and what side of the centerline they are on. As Mayfield Creek within the project area flows generally south to north (Mile 43.5 - Mile 28.0) and then east to west (Mile 28.0 - Mile 0.0) this distinction was used in describing sides of the centerline.

TABLE 2
Summary of Data from USGS Quadrangle Maps

PROJECT INTERVAL: CREEK/MI	COUNTY	SIDE OF PROJECT	NUMBER & TYPE OF STRUCTURES	RELATIONSHIP TO CENTERLINE
Mayfield				
0.0-2.0	Ballard &	n	1-old RR line	within 500 ft or edge
2.0-4.0	Carlisle	s	2-old RR line & disposal pond	within 500 ft or edge
4.0-6.0	"	n/s	2-Hwy 51 & 62 & RR line	within 500 ft or edge
6.0-8.0	"	---	---	---
8.0-10.0	"	---	---	---
10.0-12.0	"	n/s	3-Hwy 121	within 500 ft
10.0-12.0	"		& 2 pipelines	

TABLE 2 continued
Summary of Data from USGS Quadrangle Maps

PROJECT INTERVAL: CREEK/MI	COUNTY	SIDE OF PROJECT	NUMBER & TYPE OF STRUCTURES	RELATIONSHIP TO CENTERLINE
12.0-14.0	"	---	---	---
14.0-16.0	"	---	---	---
16.0-18.0	"	n/s	2-Hwy 62 & 1 gaging sta.	within 500 ft
16.0-18.0	"			
18.0-20.0	McCracken	---	---	---
20.0-22.0	"	n/s	1-RR line	within 500 ft
22.0-24.0	"	n/s	1-Hwy 339	within 500 ft
24.0-26.0	McCracken & Graves	n/s	2-Hwy 1241 & a transmission line	within 500 ft
26.0-28.0	Graves	s	3-Hwy 1820 & 2 buildings	within 500 ft or edge
28.0-30.0	Graves	e/w	1-Hwy 45	within 500 ft
30.0-32.0	Graves	e/w	2-Hwy 849 & RR line	within 500 ft
	"	e	2-buildings	within 500 ft
	"	e	3-buildings	within 500 ft or edge
	"	w	1-building	within 500 ft or edge
32.0-34.0	"	e/w	1-Viola to Boas Road	within 500 ft
	"	e	1-building	within 500 ft or edge
	"	w	2-buildings	within 500 ft or edge
34.0-36.0	"	e/w	1-Hwy 483	within 500 ft
36.0-38.0	"	e/w	1-unimproved road	within 500 ft
	"	e	1-building	within 500 ft
38.0-40.0	"	e/w	1-Purchase Parkway	within 500 ft
	"	e	1-pit or depression	within 500 ft or edge
	"	w	1-pit or depression	within 500 ft
40.0-42.0	"	e/w	2-Hwy 58 & 80 & Hwy 464	within 500 ft
	"	w	1-sewage disposal	within 500 ft or edge
	"	e	1-transmission line	within 500 ft or edge
42.0-43.5	"	e/w	4-Hwy 121, transmission line, & 2 pipelines	within 500 ft or edge
Red Duck Mouth to City Limits	"	---	---	---
City Limits to Brand St	"	n	1-pond [built between 1951-1971]	within 500 ft

TABLE 2 concluded
Summary of Data from USGS Quadrangle Maps

PROJECT INTERVAL: CREEK/MI	COUNTY	SIDE OF PROJECT	NUMBER & TYPE OF STRUCTURES	RELATIONSHIP TO CENTERLINE
	Graves	s	10-buildings [built between 1951-1971]	within 500 ft or edge
Brand St to Hwy 58 & 80	"	n	19-buildings [including 4 churches]	within 500 ft or edge
	"	s	2-buildings [including 1 church]	within 500 ft or edge
	"	n/s	1-RR line	
	"	n/s	16 city blocks	within 500 ft
Hwy 58 & 80	"	n	7-buildings	within 500 ft or edge
to Hwy 45 Bypass	"	s	1-building	within 500 ft or edge
	"	s	1-unimproved road	within 500 ft
	"	n/s	1-paved road	within 500 ft

Seventeen structures are located along the Mile 0.0 - Mile 28.0 section of Mayfield Creek. One is situated to the north of the centerline, 5 are located south of it and 11 extend to both sides. Twenty-seven structures are identified along the Mile 28.0 - Mile 43.5 stretch. Nine are located on the east side of the centerline, 5 are on the west and 13 cross the centerline. Of the 44 structures that are mapped adjacent to the project corridors along Mayfield Creek only 12 are buildings or other structures which may or may not still be in use.

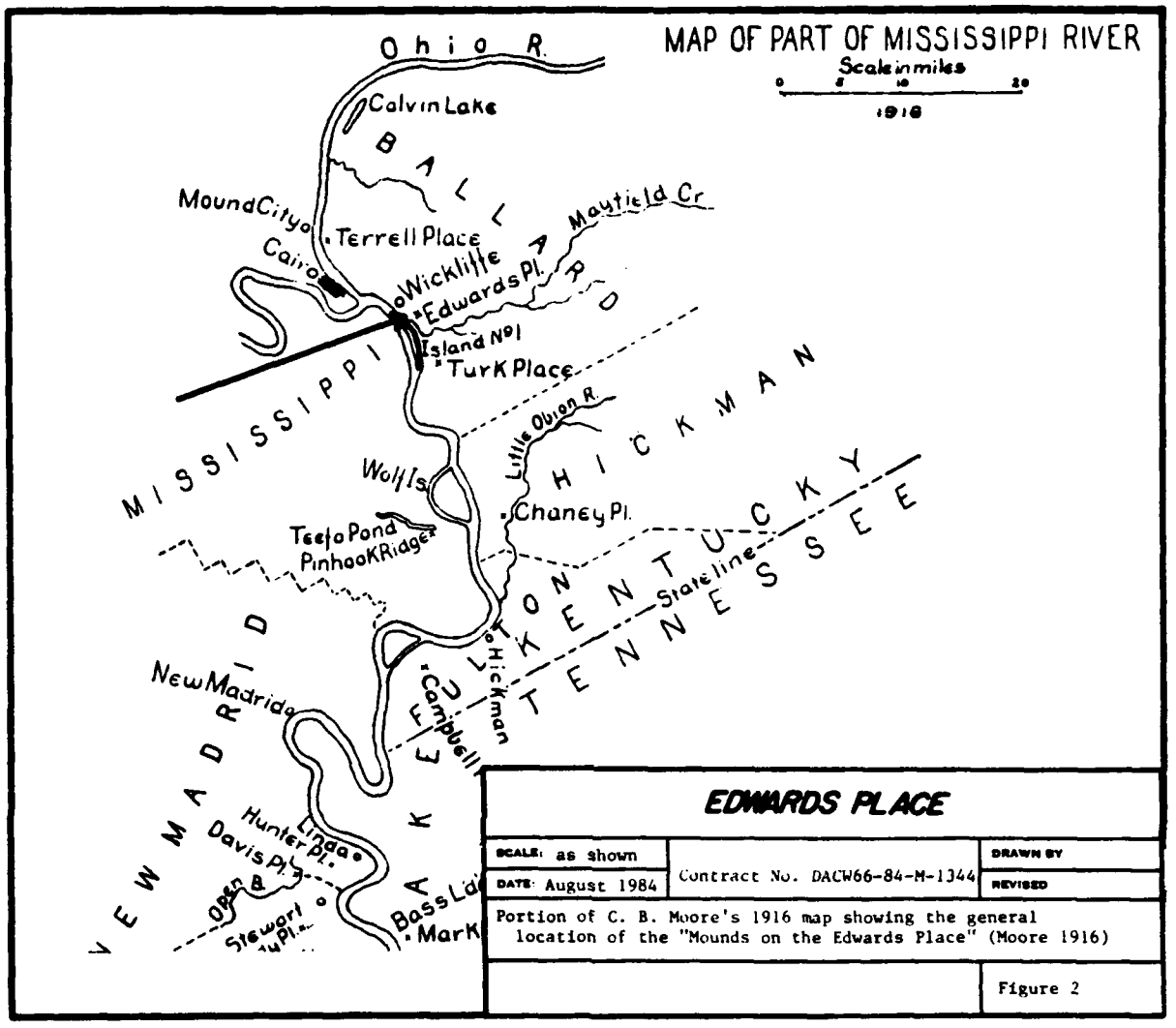
Forty-seven structures have been identified within or on the edge of the 1000 ft corridor along Red Duck Creek. As the creek flows through the town of Mayfield many more structures are undoubtedly located along its corridor. Structures which appear on the map only include those located on the edge of town and outside the city limits. Within the city limits the creek flows past at least 16 city blocks. From where it empties into Mayfield Creek to the city limits no structures are located within 500 ft of the centerline. From the city limits to Brand Street 11 new structures (constructed between 1951-1971) are located within or on the edge of the corridor. One of these is located north of the centerline while the remaining 10 are situated to the south. From Brand Street to Highway 58 and 80, 26 structures are noted within or on the edge of the corridor. From Highway 58 and 80 to Highway 45, 10 structures are within or on the edge of the corridor. Of these, 7 are situated north of the centerline, 2 are located to the south and 1 crosses to both sides. Of the 36 structures depicted on the maps within or on the edge of the corridor 33 are buildings of some kind. From the available data it is not possible to determine which or how many of these are still occupied or in use. Based on the distribution of known sites and on a review of relevant records at least

one historic farm (recorded by OSA as 15Gv28) dating from the first half of this century is located within 500 ft of the centerline or on the edge of the Red Duck Creek project corridor. It is likely that many more historic structures once stood within the project boundaries.

REVIEW OF PREVIOUS INVESTIGATIONS

The earliest reported archeological fieldwork conducted in the present Mayfield Creek corridor was conducted by C. B. Moore in 1915-1916 for the Academy of Natural Sciences of Philadelphia. Moore investigated a site in Ballard County near the mouth of Mayfield Creek during his exploration of aboriginal remains along the Mississippi River from Memphis to the mouth of the Ohio River (Figure 2). Moore's (1916:507-508) description of work at the Edwards Place follows:

> About one mile east from the head of Island No. 1 and from the mouth of Mayfield creek, on high table-land, on property of Mr. J.P. Edwards, who lives on the extensive estate, are two mounds of clay but a few feet apart, the larger 62 feet across its circular base, with a height of 6 feet 3 inches.
>
> An excavation 12 feet square showed the former surface of the ground to be but 5 feet 2 inches below the top of the mound. No burial was encountered in the body of the mound, but commencing at the dark base-line was an oblong grave-pit 8 feet 2 inches by 3 feet 6 inches in size, extending 3 feet 3 inches into the hard, underlying clay.
>
> Every part of the contents of this grave was carefully removed with a trowel without the discovery of any artifact or bone--not even so much as the crown of a human tooth. The grave, cut into dense clay, had served as a tank, holding moisture, its contents being mud while the remainder of the mound and surrounding underlying clay was solid. Probably long-continued wet had aided in the complete destruction, through decay of the skeleton which the grave at one time must have contained.
>
> A hole 12 feet square, sunk in the smaller mound, which was less than 2 feet in height and about 50 feet in diameter, yielded no return.
>
> A low mound much plowed away on another part of the Edwards Place was carefully dug into by us, but seemed to have been built as a place of domicile. In the soil was what probably had been the handle of a tool. This object is of antler, hollowed at one end as if for use as an arrowhead, but greatly curved at the other end.
>
> In a field adjoining the Edwards Place, having some fragments of flint on the surface, a number of holes failed to find burials, but came upon, in one instance, a handsome celt of flint, nearly flat on one side, convex on the other, having a gracefully rounded cutting edge, highly polished on each side. Length 6 inches.

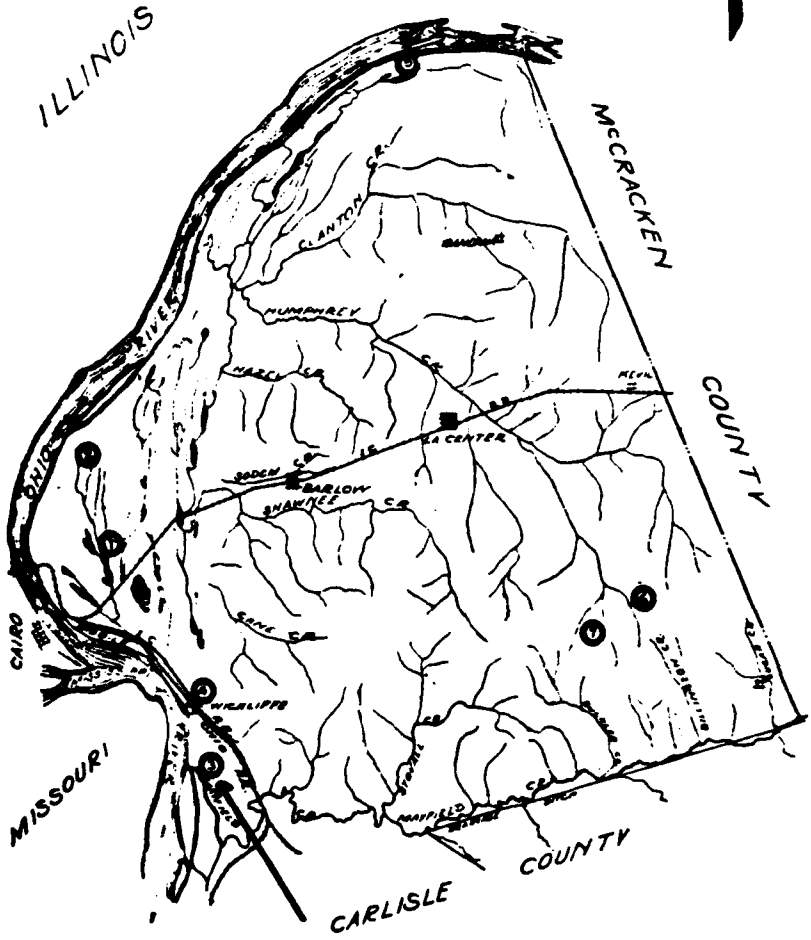


Moore notes that there were 2 mounds on the Edwards property yet describes a third mound. This third mound was said by Moore to be located on another part of the property, was much smaller than the other 2 and probably represented the remains of a residence.

Moore's Edwards Place is also described by Webb and Funkhouser (1932) and its general location plotted. According to Webb and Funkhouser (1932:15-16) the site (their Ballard County Site Number 3 in Figure 3) consists of:

> Two mounds of clay, the larger sixty-two feet across the base and six feet high, located one mile east of the head of Island Number 1 on the property of J.P. Edwards. Under one mound was one grave in a pit but the pit was full of moisture which had probably destroyed the contents. A few fragments of flint and one very fine celt were found near the mounds. Recorded by C.B. Moore and described by S.G. Weir and M.G. Miller.

Webb and Funkhouser's description of the site summarizes Moore's findings but fails to mention the third mound. Unfortunately, the Weir and Miller reference noted in the text is not formally cited and a



LEGEND

1 FORT
2 TWO BURIAL MOUNDS
3 MOUNDS
4 VILLAGE SITE
5 CEMETERY
6,7 MOUNDS

BALLARD COUNTY

SCALE: as shown	Contract No. DACW66-84-M-1344	DRAWN BY
DATE: August 1984		REVISED

Webb and Funkhouser (1932) map showing the general location of a mound site in Ballard County (see number 3)

Figure 3

literature search of contemporary archeological sources for the region and surrounding area did not identify any published references attributable to them.

The locational information provided by Moore (1916) and Webb and Funkhouser (1932) would put the Edwards Place somewhere to the north of Mayfield Creek within a mile of its mouth (Mile 0.0 - Mile 1.0). With the data available from these sources it is difficult to accurately plot the site to determine if it is within or on the edge of the Mayfield corridor.

Two other sites recorded by Webb and Funkhouser are located along Mayfield Creek and appear to be within or on the edge of the corridor. The first is bisected by the ditch along Mile 8.0 - Mile 10.0 in Carlisle County (recorded as 15Ce5 by OSA). According to Webb and Funkhouser (1932:68-69) the site (their Carlisle County Site Number 5 in Figure 4) consists of a:

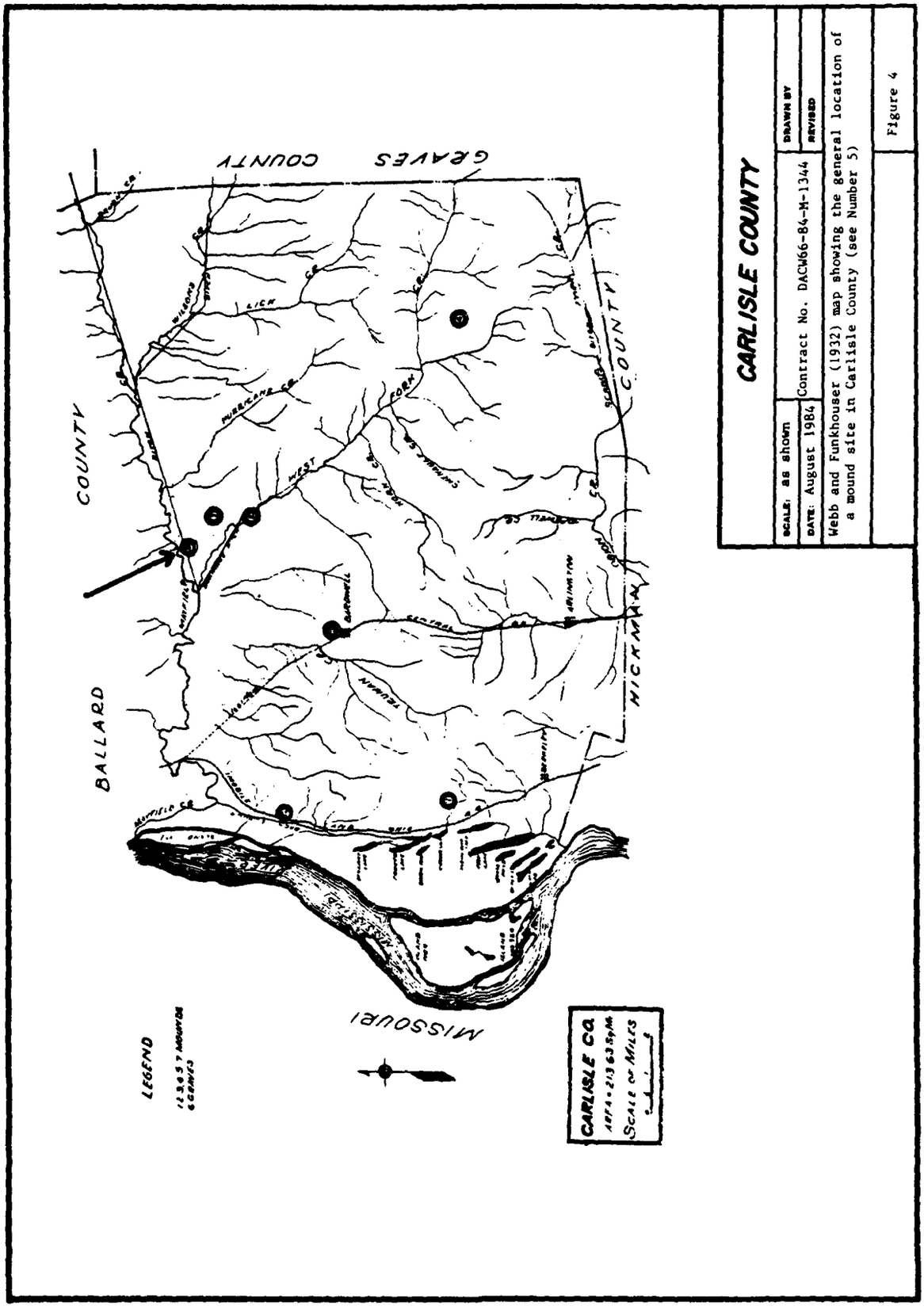
> Mound four and one-half miles northeast of Bardwell at the edge of the Mayfield Creek bottoms. This is a large mound which has never been explored and nothing is known of its contents. Reported by W. J. Ashbrook.

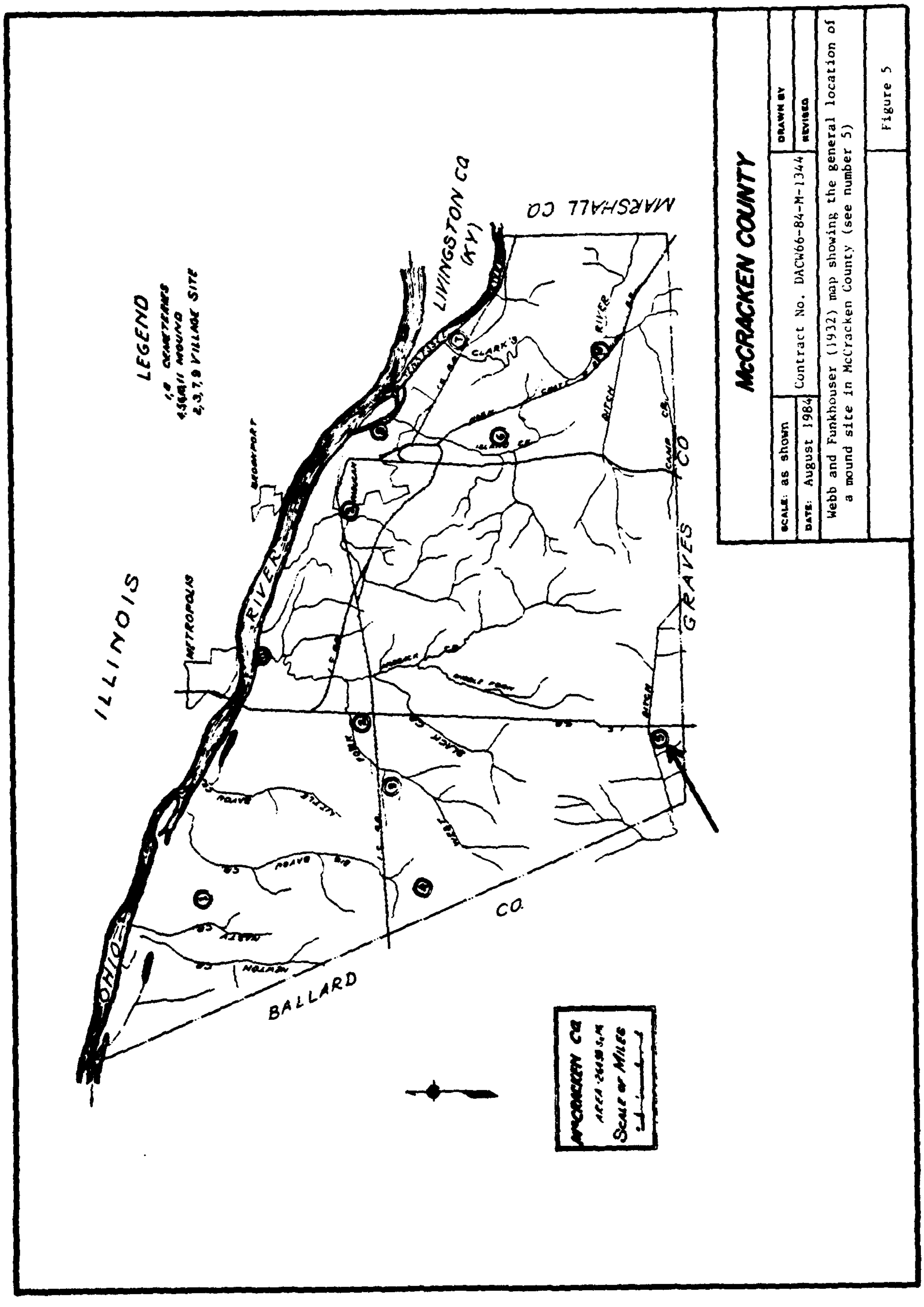
The other site recorded by Webb and Funkhouser (1932:252) along Mayfield Creek (their McCracken County Site Number 5 in Figure 5), is said to be:

> A large mound forty feet in diameter at the base and twenty feet high, seven miles southwest of Massac and near the Graves County line. This mound was opened by Fain King in 1927 and yielded bones, charcoal and a few artifacts. The site is now obliterated.

Their plot of this site (recorded by OSA as 15McN5) would place it south of Mayfield Creek near Mile 21.0. Fain King (1936) made no mention of his excavations at the site in a brief article he wrote several years later on the archeology of western Kentucky. No sites were recorded by Webb and Funkhouser (1932:142) in Graves County that were within or near the project corridor.

With the advent of historic preservation legislation in the 1970s a new era of archeological research began in the area. Cultural resource surveys conducted in response to the mandates of these laws have substantially increased the region's inventory of known prehistoric and historic sites. No historic or architectural sites are currently on record for the project with the State Historic Preservation Officer (Morgan 1984). A review of the records from the Office of State Archaeology (Turnbow 1984) indicates a number of sites recorded for the quadrangle maps over which the Mayfield Creek and Red Duck Creek project extends. The majority of these sites have been added to the inventory by a number of cultural resource surveys which have been conducted in the past decade. Foster and Shock (1976) identified for the Kentucky Department of Transportation (DOT) 22 sites (15Gv2, 15Gv300 through 312, 15McN300 through 306) in Graves and McCracken counties along a proposed realignment of Highway 45. Carstens and Carpenter (1978) located and tested a site in Graves County (15Gv13) for the Mayfield Urban Renewal


CARLISLE COUNTY
SCALE: as shown
DATE: August 1984
Contract No. DACW66-84-M-1344
DRAWN BY
REVISED
Webb and Funkhouser (1932) map showing the general location of a mound site in Carlisle County (see Number 5)
Figure 4
GRAVES COUNTY
BALLARD COUNTY
HICKMAN COUNTY
MISSOURI
LEGEND
CARLISLE CO.



Webb and Funkhouser (1932) map showing the general location of a mound site in McCracken County (see number 5)

Figure 5

Community Development Agency. Thirty-three sites (15Ba306, 15Ce13 through 17, 15Hi16 through 41, and 15Ful2) were identified by McGraw (1981) for the Kentucky DOT in a reconnaissance survey for the Great River Road project. McGraw (1974) also located a site (15Gr10) during a survey along the West Fork of Mayfield Creek. Thirty-five sites (15Ba39 through 74) were identified during a reconnaissance and evaluation of archeological sites in Ballard County by Weinland and Gatus (1979) for the Kentucky Heritage Commission. Shock (1978) located 6 (15Ba300 through 305) and tested 3 sites (15Ba302, 304 and 305) at the proposed location for sewage treatment facilities for the city of Wickliffe in southwest Ballard County. Besides these surveys which had positive results a number of other surveys were conducted which reported negative findings (McHugh 1975, 1976; Schock 1975, 1979; and Wesler 1982a, 1982b). It should also be noted here that the famous Wickliffe Mounds (Butler 1933; Hunt 1942; King 1937) are located approximately 5 mi (8 km) north of the mouth of the mouth of Mayfield Creek.

According to information supplied to us by the OSA the following quads contain a number of recorded prehistoric and historic archeological sites: Wickliffe has 20, Blandville 11, Hickory 8, Mayfield 5, Westplains 14, Lovelaceville 1 and Melber has 11 archeological sites recorded (Turnbow 1984). These 70 sites represent 11 Paleo-Indian components, 17 Archaic components, 15 Woodland components, 17 late prehistoric components (probably Mississippi Period), 15 historic components and 33 undetermined components.

Table 3 summarizes the data for 6 sites listed by the OSA that may be located within or on the edge of the Mayfield Creek (5) and Red Duck Creek (1) project corridor. Three of these sites (15Ba10, 15Ba104 and 15Ba105) are located in the Mile 0.0 - Mile 2.0 section of Mayfield Creek, 1 (15Ce5) is located between Mile 8.0 - Mile 10.0 and 1 (15McN5) is situated in the Mile 20.0 - Mile 22.0 section of the Mayfield corridor.

TABLE 3
Summary of OSA Data for the Project Area

SITE NUMBER/ PROJECT INTERVAL	COMPONENT	SIDE OF PROJECT	SOIL TYPE/ ASSOCIATION	DISTURBANCE	NR SIG
Mayfield Creek					
15Ba104 0.0-2.0	Late Preh/ Historic	north	Av	RR & road construction	2
15Ba10* 0.0-2.0	Woodland/ Late Preh	north	Nr,CaB,CaA	RR & road construction	6
15Ba105 0.0-2.0	Late Preh	north	Nr,CaA	RR & road construction	6
15Ce5 8.0-10.0	Late Preh	north/ south	-----	ditch construction	6

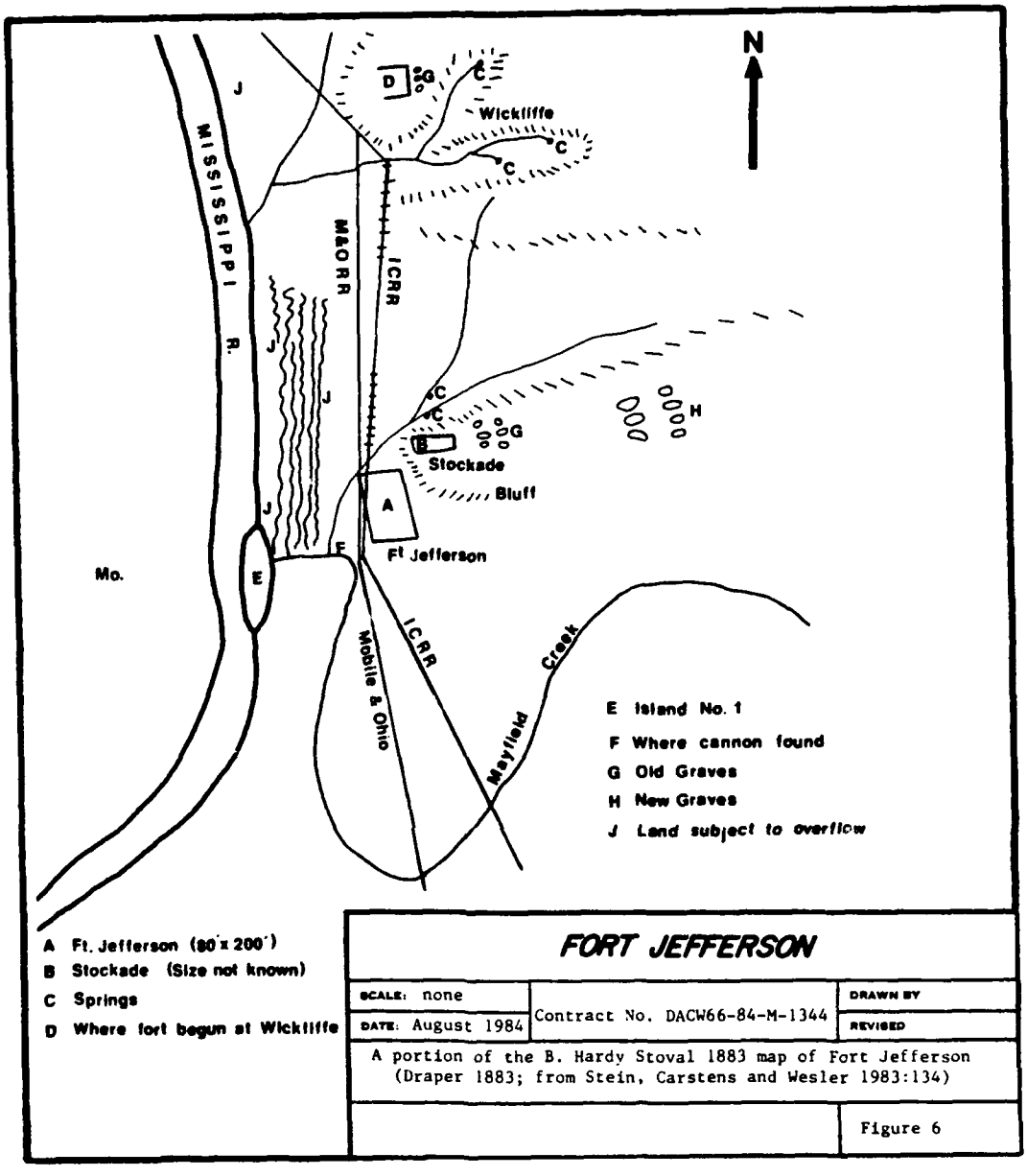
TABLE 3 concluded
Summary of OSA Data for the Project Area

SITE NUMBER/ PROJECT INTERVAL	COMPONENT	SIDE OF PROJECT	SOIL TYPE/ ASSOCIATION	DISTURBANCE	NR SIG
15McN5 20.0-22.0	undetermined	south	Wa,Fc	uncontrolled excavations by collectors, agriculture, ditch construction	6
15Gv28 Red Duck Creek Hwy 58 & 80 to Hwy 45	Historic	south	Gs,Lgn,El,Bb	unknown	5

see Table 1 for soil descriptions. NR SIG stands for National Register status: 2 = Eligible for listing on the National Register of Historic Places (i.e., a site which has been determined eligible by the Secretary of the Interior [36CFR63]; 5 = Inventory site (i.e., a site in the State Inventory of Archaeological Sites which does not presently meet National Register criteria or for which there is insufficient data with which to evaluate its significance [36CFR61.6]; 6 = National Register eligibility not assessed.
*located within 500 ft of the centerline or on its edge

15Ce5 and 15McN5 appear to be sites originally recorded by Webb an Funkhouser (1932:68-69,252). Both contain mounds with the component identified at 15Ce5 to be late prehistoric (Mississippi Period) and the cultural component(s) at 15McN5 remain undetermined. The site described with the three mounds (Mounds on the Edwards Place) investigated and reported by Moore (1916:507-508) and later mentioned by Webb and Funkhouser (1932:15-16) may be either 15Bal0, 15Ba48 (located close by but outside the project corridor), 15Bal04, 15Bal05 or possibly all or several of the above. Carstens's (1982b) mention of three "hot spots" on a color infrared aerial photograph of the area around 15Bal05 may be of interest in this regard. At this time not enough is known about these sites to determine which one, if any, is the one recorded by Moore. Documentary research on land ownership in the area would help to narrow the focus to property owned by Mr. J. P. Edwards at the time of C.B. Moore's visit.

Although it has a prehistoric component, 15Bal04 is most noted for its historic period activities. The historic component of this site is considered to be the remains of Fort Jefferson (Carstens 1984) (Figure 6) constructed in 1780 by George Rogers Clark and abandoned in 1781 (Robertson 1973; Fraser 1983). The fort was built by the Americans at the end of the Revolutionary War in order to stop Spanish and English advancements from the west, to control major inland river traffic along



the Ohio and Mississippi rivers, and justify the State of Virginia's claim to this land (Stein, Carstens and Wesler 1983:132-133). Geoarcheological research in conjunction with an on-going search for the fort has recently identified 19th and 20th century alteration of the landscape in the vicinity of where the most reliable historical documents suggest the fort to have been constructed. The remains of Fort Jefferson are now thought to be situated on a colluvial fan north of an historic swamp which has recently been identified through geoarcheological research (Carstens 1984; Stein, Carstens and Wesler 1983). Wherever the actual location of this site (and it probably is in the project corridor) it has already been determined eligible for inclusion on the National Register of Historic Places (Turnbow 1984).

Several other on-going research projects are being conducted in the vicinity of the Mayfield Creek and Red Duck Creek project area. Dr. Barry Lewis of the University of Illinois at Urbana is currently studying Late Woodland and Mississippian occupations along the Mississippi River. In addition, excavations of a Paleo-Indian site

located near the town of Mayfield are being conducted under the direction of Tom Gatus of the Kentucky Heritage Commission (Turnbow 1984).

NATURE OF THE CULTURAL RESOURCES WITHIN THE PROJECT CORRIDOR

From our review of existing literature, unpublished extent 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 statements (some factual, some predictive) which focus specifically on the project area. Future field investigations should be aimed at refining, discarding or supporting these hypotheses.

1. One significant prehistoric and historic site has been determined eligible for the National Register of Historic Places and is within the project boundaries (e.g., Fort Jefferson 15Bal04).

2. Small specialized activity-extractive sites exist within the project area. Two prehistoric mound sites (15Ce5, 15McN5) are on record within the project area and evidence of others may be present.

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 which may be present.

5. Unscientific collecting from recorded prehistoric sites has occurred within the project area (e.g., 15Ce5, 15McN5).

6. Based on the 18 July 1984 records check by the Office of State Archaeology (Turnbow 1984) a small number of prehistoric archeological sites are currently on record within the project corridor:

   a. Five sites are known and several more will be found within the corridor along the less disturbed portions of Mayfield Creek from Mile 0.0 to Mile 4.0.

   b. Archeological sites may or may not occur along the artificial drainage corridors of Mayfield Creek and Red Duck Creek.

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 and terrace soils along Mayfield Creek and the higher areas along Red Duck Creek increases the possibility of sites.

b. The absence of higher landforms in other parts of the project area decreases the likelihood of cultural resources being present.

8. The areas between Mile 0.0 and Mile 4.0 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.

9. The complete lack of natural levees or higher elevations from Mile 6.0 to Mile 43.5 along Mayfield Creek 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 24 July 1984 records check by the State Historic Preservation Officer (Morgan 1984), it is unlikely that any historic sites of architectural significance will be located within the project corridor although at least two historic archeological sites are on record (15Bal04, 15Gv28).

11. Based on our review of the relevant USGS quadrangles, 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. The natural levee portion of Mayfield Creek has the highest probability of containing significant cultural resources.

13. Most, if not all, of the archeological sites recorded during field reviews will be small, shallow, plowzone lithic scatters with few or no diagnostic artifacts.

14. There is some evidence of Paleo-Indian Period activity on record in the general project area (11 sites) and there is potential for locating sites of this period within the project limits.

15. There is some evidence of Archaic Period activity on record in the general project area (17 sites) and there is potential for locating sites of this period within the project limits.

16. In general, very little pottery (usually an indication of some site permanence) will be found from archeological sites within the project corridor.

17. Fifteen sites have been assigned a Woodland Period cultural affiliation on the project quads and it is probable that sites of this time period will be recorded in the project area.

18. Sites which may by present representing the Woodland Period will exhibit pottery of the Baytown (grog-tempered) tradition rather than of the Barnes (sand-tempered) tradition.

19. There is 4 Mississippi Period sites (Late Prehistoric) on record within the project area (15Bal04, 15Bal05, 15Bal0 and 15McN5) and it is likely that other loci of this prehistoric cultural period exist within the project limits.

20. One previously recorded site has both prehistoric and historic cultural affiliations (15Bal04) and it is likely that other sites with these components will be located within the project limits.

21. Lithic cultural materials have been recovered and/or observed at all previously recorded prehistoric 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.

22. Relatively early historic sites may be present along the more than 16 Mayfield city blocks thru which the Red Duck Creek corridor passes.

CONCLUSIONS AND RECOMMENDATIONS

Although the actual corridors along Mayfield Creek and Red Duck Creek have never been the focus of a formal survey for cultural resources, numerous prehistoric and historic sites are recorded in the area. Fort Jefferson (15Bal04) is eligible for the National Register and most of the mound sites recorded by Moore and Webb and Funkhouser are probably eligible. The project as currently proposed will impact significant cultural resources. An intensive survey and assessment program should be conducted along both corridors.

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APPENDIX A

SECTION C - DESCRIPTION/SPECIFICATIONS

(SCOPE OF WORK)

Cultural Resource Literature Search of the Mayfield Creek and the Red Duck Creek Project Areas, Ballard, Calloway, Carlisle, Graves, and McCracken Counties, Kentucky

C-1. GENERAL.

C-1.1. The Contractor shall conduct a background and literature search of the Mayfield Creek and the Red Duck Creek Project Areas, Ballard, Calloway, Carlisle, Graves, and McCracken Counties, Kentucky. These tasks are in partial fulfillment of the Memphis District's obligations under the National Historic Preservation Act of 1966 (P.L. 89-665), as amended; the National Environmental 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; and the Advisory Council on Historic Preservation, "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800).

C-1.2. Personnel Standards.

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

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

(1) Archeological Project Directors or Principal Investigator(s) (PI). Persons in charge of an archeological project or research investigation contract, in addition to meeting the appropriate standards for archeologist, 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.

2. Archeologist. The minimum formal qualifications for individuals practicing archeology as a profession are a B.A. or B.S. degree from an accredited college or university, followed by a minimum of two years of successful graduate study with concentration in anthropology and specialization in archeology and at least two summer field schools or their

equivalent under the supervision of archeologists of recognized competence. A Master's thesis or its equivalent in research and publication is highly recommended, as in the M.A. degree.

3. Other Professional Personnel. All non-archeological personnel utilized for their special knowledge and expertise must have a B.A. or B.S. degree from an accredited college or university, followed by a minimum of one year of successful graduate study with concentration in appropriate study.

4. Other Supervisory Personnel. Persons in any archeological supervisory position must hold a B.A., B.S. or M.A. degree with a concentration in archeology and a minimum of 2 years of field and laboratory experience.

5. Crew Members and Lab Workers. All crew members and lab workers must have prior experience compatible with the tasks to be performed under this contract. An academic background in archeology/anthropology is highly recommended.

c. All operations shall be conducted under the supervision of qualified professionals in the discipline appropriate to the data that is to be discovered, described or analyzed. Vitae of personnel involved in project activities may be required by the Contracting Officer at anytime during the period of service of this contract.

C-1.3. The Contractor shall designate in writing the name of the Principal Investigator. In the event of controversy or court challenge, the Principal Investigator shall be available to testify with respect to report findings.

C-1.4 The Contractor shall keep standard records which may be reviewed by the Contracting Officer. These records shall include field notes, state site survey forms and any other cultural resource forms and/or records, field maps and photographs necessary to successfully implement requirements of this Scope of Work.

C-1.5. 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-1.6. Innovative approaches to data location, collection, description and analysis, consistent with other provisions of this contract and the cultural resources requirements of the Government, are encouraged.

C-1.7. 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, therefore, will bemade by representatives of either the U.S. Army Corps of Engineers or the Department of Justice.

C-1.8. The Contractor, prior to the acceptance of the final report, shall not 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-1.9. The extent and character of the work to be accomplished by the Contractor shall be subject to the general supervision, direction, control and approval of the Contracting Officer. The Contracting Officer may have a representative of the Government present during any or all phases of the described cultural resource project.

C-2. STUDY AREA.

C-2.1. The Mayfield Creek Flood Control Project is located in Ballard, Calloway, Carlisle, Graves, and McCracken Counties, Kentucky. The expected right-of-way will be 500 feet (152.44 meters) on each side of the ditch centerline, 1,000 feet (304.88 meters) total width. Possible impace areas are immediately adjacent to Mayfield Creek; from the Mississippi River (mile 0.0) to Kentucky Highway 121 (mile 43.5) southeast of Mayfield, Kentucky, and immediately adjacent to Red Duck Creek from mayfield Creek (mile 0.0), to U.S. Highway 45 (mile 2.9) southwest of Mayfield, Kentucky. The project can be located on the Wickliffe, KY-MO; Blandville, KY; Lovelace, KY; Melber, KY: Hickory, KY; Westplains, KY; Farmington, KY; and the Mayfield, KY, 7.5 minute quadrangle maps. The attached map shows the general limits of the project.

C-3. DEFINITIONS.

C-3.1. "Cultural resources" are defined to include any buildings, site, district, structure, object, data, or other material relating to the history, architecture, archeology, or culture of an area.

C-3.2. "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 amelionating losses of significant data in such resources.

C-3.3. "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-3.4 "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-3.5. "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 not more than 15 percent of the total proposed impact area.

C-3.6. "Significance" is attributable to those cultural resources of historical, architectural, or archeological value when such properties are included in or have been determined by the Secretary of the Interior to be eligible for inclusion in the National Register of Historic Places after evaluation against the criteria contained in How to Complete National Register Forms.

C-3.7. "Testing" is defined as the systematic removal of the scientific, prehistoric, historic, and/or archeological data that provide an archeological or architectual 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 activites, excavation, the development of specific plans for research activities, 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-3.8. "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.4. GENERAL PERFORMANCE SPECIFICATIONS.

C.4.1. The Contractor shall prepare a draft and final report detailing the results of the study and subsequent recommendations.

C-4.2 Background and Literature Search.

a. This task shall include an examination of the historic and prehistoric environmental setting and cultural background of the study area and shall be of sufficient magnitude to achieve a detailed understanding of the overall cultural and environmental context of the study area.

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

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

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

e. In order to accomplish the objectives described in paragraph 4.02.d., it will be necessary to attempt to establish a relationship between landforms and the patterns of their utilization by successive groups of human inhabitants. This task should involve defining and describing various zones of the study area with specific reference to such variables as past topography, potential food resources, soils, geology, and river channel history.

C-5 GENERAL REPORT REQUIREMENTS.

C-5.1. The primary purpose of the cultural resources report is to serve as a planning tool which aids the Government in meeting its obligations to preserve and protect our cultural heritage. The report will be in the form of a comprehensive, scholarly document that not only fulfills mandated legal requirements but also serves as a scientific reference for future cultural resources studies. As such, the report's content must be not only descriptive but also analytic in nature.

C.5.2. Upon completion of all research, the Contractor shall prepare report detailing the work accomplished and the results.

C-5.3. The report shall include, but not necessarily be limited to, the following sections and items:

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 purchase order 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 discovered, 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; a project map; and the dates during which the task was conducted.

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

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

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

h. Conclusions and Recommendations. This section shall contain the recommendations of the Principal Investigator, regarding all contract activities. Conclusions derived from testing activities concerning the nature, quantity and distribution of cultural items should be used in describing the probable impact of project work on cultural resources.

i. Reference (American Antiquity Style).

j. Appendices (Maps, Correspondence, etc.). A copy of this Scope of Work shall be included as an appendix in all reports.

C-5.4. 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-5.5. In order to prevent potential damage to cultural resources, no information shall appear in the body of the report which would reveal precise resource location. All maps which indicate or imply precise site locations shall be included in reports as a readily removable appendix (ex: envelope).

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

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

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

C-5.9. Information shall be presented in textual, tabular, and graphic forms, whichever are most appropriate, effective and advantageous to communicate necessary information. All tables, figures and maps appearing in the report shall be of publishable quality.

C-5.10. Any abbreviated phrases used in the text shall be spelled out when the phase first occurs in the text. For example use "State Historic Preservation Officer (SHPO)" in the intial reference and thereafter "SHPO" may be used.

C-5.11. The first time the common name of a biological species is used it should be followed by the scientific name.

C-5.12. In addition to street addresses or property names, sites shall be located on the Universal Transverse Mercator (UTM) grid.

C-5.13. All measurements should be metric. If the Contractor's equipment is in the English system, then the metric equivalents should follow in parentheses.

C-5.14. As appropriate, diagnostic and/or unique artifacts, cultural resources or their contexts shall be shown by drawings or photographs.

C-5.15. Black and white photographs are preferred except when color changes are important for understanding the data being presented. No instant type photographs may be used.

C-5.16. Negatives of all black and white photographs and/or color slides of all plates included in the final report shall be submitted.

C-6. SUBMITTALS.

C-6.1. The Contractor shall, unless delayed due to causes beyond his fault or negligence, complete all work and services under the purchase order within the following time limitations after receipt of notice to proceed.

a. Six (6) copies of the draft report will be submitted within 35 calendar days following receipt of notice to proceed.

b. The Contractor shall submit under separate cover, six copies of 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 single copies of all forms, records and photographs described in paragraph 1.04.

c. The Government shall review the draft report and provide comments to the Contractor within 20 calendar days after receipt of the draft report.

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

C-6.2. If the Government review exceeds 30 calendar days, the period of service of the purchase order shall be automatically extended on a day-by-day basis equal to any additional time required by the Government for review.

a. All maps which indicate or imply actual site locations shall be included in reports as a readily removeable 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.

b. 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-6.3. At any time during the period of service of this purchase order, upon the written request of the Contracting Officer, the Contractor shall submit, within 30 calendar days, any portion or all field records described in paragraph 1.04 without additional cost to the Government.

C-7. SCHEDULE.

The Contractor shall, unless delayed due to causes beyond his control and without his fault or negligence, complete all work and services under this purchase order within 85 days after receipt of notice to proceed.

C-8. METHOD OF PAYMENT.

C-8.1. 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-8.2. If the Contractor's work is found to be unsatisfactory and if if is determined that fault or negligence on the part of the Contractor of his employees has caused the unsatisfactory condition, the Contractor will be liable for all costs in connection with correcting the unsatisfactory work. The work may be performed by Government forces or Contractor forces at the direction of the Contracting Officer. In any event, the Contractor will be held responsible for all costs required for correction of the unsatisfactory work, including payments for services, automotive expenses, equipment rental, supervision, and any other costs in connection therewith, where such unsatisfactory work as deemed by the Contracting Officer to be the result of carelessness, incompetent performance or negligence by the Contractor's employees. The Contractor will not be held liable for any work or type of work not covered by this purchase order.

C-8.3. Prior to settlement upon termination of the purchase order, and as a condition precendent 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.

APPENDIX B
LIST OF PROJECT PARTICIPANTS

RICHARD P. KANDARE authored various sections of the report. Mr. Kandare received an MA in Anthropology from the University of Arkansas in 1983 and is a member of the Society of Professional Archeologists.

TIMOTHY C. KLINGER served as the Principal Investigator for the project and authored various sections of the report. Mr. Klinger received an MA in Anthropology in 1977 from the University of Arkansas and a JD from the University of Arkansas School of Law in 1982. Mr. Klinger is a professional archeologist registered by the Society of Professional Archeologists and is an Attorney at Law licensed by the State of Arkansas.