Ditch 19 Extension: A Cultural Resources Literature Search of the Ditch 14, Lateral A, Lateral I and Extended Reach of Ditch 19 in Dunklin and Stoddard Counties, Missouri

Timothy C. Klinger

Historic Preservation Associates
P.O. Box 1064
301 West Mountain Street
Fayetteville, Arkansas 72702

Dept. of the Army
Memphis District Corps of Engineers
B-202 Clifford Davis Federal Bldg.
Memphis, TN 38103

A background and literature search was conducted. No National Register cultural resources are currently on record within the project area.
DITCH 19 EXTENSION

A Cultural Resources Literature Search of the Ditch 14, Lateral A, Lateral 1 and Extended Reach of Ditch 19 in Dunklin and Stoddard Counties, Missouri

by

Timothy C. Klinger

Historic Preservation Associates
P.O. Box 1064
301 West Mountain Street
Fayetteville, Arkansas 72702

Report submitted to the Memphis District Corps of Engineers in accordance with Purchase Order DACW66-83-M-0530
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 Ditch 14, Lateral A, Lateral 1 and the Extended Reach of Ditch 19 in Dunklin and Stoddard Counties, Missouri. No National Register cultural resources are currently on record within the project limits.
# Table of Contents

- Abstract i
- Table of Contents ii
- List of Tables iii
- List of Figures iii
- Background and Purpose of the Report 1
  - Project Location and Date of Investigation 1
  - Project Sponsor and Participants 1
  - Methods of Investigation 5
- Environmental Setting for the Ditch 19 Project Area 5
- General Cultural Background 10
- Review of the GLO Data 10
- Review of the USGS Data 15
- Review of the DNR Data 15
- Review of the ASM Data 22
- Nature of Cultural Resources within the Proposed Corridors 24
- References Cited 26
- Appendixes 30
  - Project Scope of Work 31
  - Records Check Document from the Missouri Archeological Survey Dated 7 February 1983 37
  - Project Participants 39
LIST OF TABLES

1. Project Area Summaries 3
2. Characteristics of Soils Associated with the Project Corridors 7
3. Prehistoric Cultural Sequence in the Ditch 19 Vicinity 11
4. Summary of Data from GLO maps 13
5. Summary of Data from USGS Quadrangle maps 17
6. Search of Department of Natural Resources Records 18
7. Cultural Material Collected at Vernon Reaves Site (23DU168) 20
8. Search of Archeological Survey of Missouri Records 23

LIST OF FIGURES

1. General location of the Ditch 19 extension project area 2
2. Project location in relation to Missouri watersheds 4
3. Ditch 19 in its regional environmental setting 6
4. Area as depicted in 1840, 1860 and 1861 by the General Land Office 14
5. Area as depicted in 1956 by the COE 16
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 literature and records search of four ditch corridors in Dunklin and Stoddard counties, Missouri. On 14 January 1983, the HPA proposal was forwarded to the Memphis District. Purchase Order DACW66-83-M-0530 was issued 21 January 1983 and was received by HPA on 28 January 1983.

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) and to those issued by the Missouri Office of Historic Preservation (1978).

Project Location and Dates of Investigation

The project area is located in Dunklin and Stoddard counties, Missouri (Figure 1) in parts of T23N/R9E, T22N/R9E, T22N/R10E, T23N/R10E and T24N/R10E. Four separate but interrelated segments of the project are involved (Table 1) and include 13.9 miles of 300 ft wide ditch corridor (ca 505.45 ac). The project area is entirely within the Little River portion of the St. Francis watershed (Figure 2). The investigation was begun on 28 January 1983 and was completed with a draft report submitted in May 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 is Mr. Jimmy D. McNeil.

Historic Preservation Associates has carried out the work reported here. Mr. Timothy C. Klinger served as Principal Investigator and wrote the report. Mr. Steven M. Imhoff and Mr. Scott A. Jones also assisted in report preparation (Appendix A).
# TABLE 1

Project Area Summaries

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
<th>LENGTH</th>
<th>WIDTH</th>
<th>APPROXIMATE ACREAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch 19 Extension</td>
<td>4.9</td>
<td>300*</td>
<td>178.18</td>
</tr>
<tr>
<td>Ditch 14</td>
<td>4.5</td>
<td>300</td>
<td>163.63</td>
</tr>
<tr>
<td>Lateral A</td>
<td>3.0</td>
<td>300</td>
<td>109.05</td>
</tr>
<tr>
<td>Lateral 1</td>
<td>1.5</td>
<td>300</td>
<td>54.55</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13.9</strong></td>
<td></td>
<td><strong>505.45</strong></td>
</tr>
</tbody>
</table>

* width of total corridor (i.e., 150 ft on each side of centerline)
Methods of Investigation

A background- and literature search is defined in the Scope of Work (Appendix A: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 resources manuscripts. We have also contacted the State Historic Preservation Officer and obtained a summary of his relevant records. The Archaeological Survey of Missouri has likewise been consulted and a review of its records has been obtained (Appendix A).

In addition to these sources, relevant maps of the General Land Office have been reviewed as have those published by the U.S. Geological Survey.

ENVIRONMENTAL SETTING FOR THE DITCH 19 PROJECT AREA

The Ditch 19 project area lies in what is archeologically known as the Central Mississippi Valley (Willey 1966:248). This subdivision of the Mississippi Valley is in turn composed of three basic geologic formations including the Tertiary and Old Uplands, the Dissected Older Alluvium and the Recent Alluvium (Fisk 1944:Figure 1).

The Tertiary and Older Uplands are represented in the valley by a number of erosional remnants of Tertiary age. The most important of these remnants with respect to the study area is Crowley's Ridge (Figure 3; Table 2).

Crowley's Ridge is a long narrow belt of upland extending from just south of Cape Girardeau, Missouri southward almost 402 km (250 mi) to Helena, Arkansas. These uplands are composed of sands and gravels covered with a thick mantle of loess consisting of eolian silt and clayey silt deposits (Saucier 1974). The eastern side of Crowley's Ridge that forms the western boundary of the project area is a well-defined steep bluff.

The Ridge bisects the Central Mississippi Valley creating the Eastern and the Western Lowlands. Phillips, Ford and Griffin (1951) describe Crowley's Ridge as an important physical and cultural divide. They note that the contrasting landscapes of Crowley's Ridge and the alluvial plains or lowlands on either side may provide important data concerning the interaction of human groups with their natural environment (Phillips, Ford and Griffin 1951:12).

In relation to the Ditch 19 study area, Crowley's Ridge was undoubtedly an important source of lithic materials, salt and pigment for prehistoric peoples (J. Price, Morrow and C. Price 1978:32). The streams that drain Crowley's Ridge also carry gravels into the project area, some of which may have been used by aboriginal groups.
The diagram illustrates the environmental setting of a region. The legend indicates the following:

- Older Upland
- Older Alluvium
- Recent Alluvium

Additionally, the contract number is DACW66-83-M-0530, and the date is May 1983.

Ditch 15 is in its regional environmental setting.
**TABLE 2**  
Characteristics of Soils Associated with the Project Corridors

<table>
<thead>
<tr>
<th>PROJECT/ SOIL TYPE</th>
<th>TOPOGRAPHIC SETTING</th>
<th>% SLOPE</th>
<th>DRAINAGE</th>
<th>FLOODING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ditch 19 Extension 4.9 mi</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ca Cairo silty clay</td>
<td>channels &amp; basins</td>
<td>0-2</td>
<td>poor</td>
<td>common</td>
</tr>
<tr>
<td>Gd Gideon loam</td>
<td>basins, low</td>
<td>0-2</td>
<td>poor</td>
<td>occasional</td>
</tr>
<tr>
<td>Ro Roellen silty clay</td>
<td>channels &amp; basins</td>
<td>0-2</td>
<td>poor</td>
<td>occasional</td>
</tr>
<tr>
<td>Sc Sharkey silty clay loam</td>
<td>broad flats, backswamps</td>
<td>0-2</td>
<td>poor</td>
<td>none to common</td>
</tr>
<tr>
<td>So Sikeston loam</td>
<td>channels &amp; basins</td>
<td>0-2</td>
<td>poor</td>
<td>rare to frequent</td>
</tr>
<tr>
<td>Cv* Calhoun very fine sandy loam</td>
<td>terraces</td>
<td>---</td>
<td>poor</td>
<td>---</td>
</tr>
<tr>
<td>Li* Lintonia fine sandy loam</td>
<td>broad terraces</td>
<td>---</td>
<td>poor</td>
<td>---</td>
</tr>
<tr>
<td>Lv* Lintonia very fine sandy loam</td>
<td>terraces</td>
<td>level well</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Wa* Wabash clay loam</td>
<td>broad flats</td>
<td>---</td>
<td>poor</td>
<td>---</td>
</tr>
<tr>
<td><strong>Ditch 14 4.5 mi</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ca Cairo silty clay</td>
<td>channels &amp; basins</td>
<td>0-2</td>
<td>poor</td>
<td>common</td>
</tr>
<tr>
<td>Gd Gideon loam</td>
<td>basins, low</td>
<td>0-2</td>
<td>poor</td>
<td>occasional</td>
</tr>
<tr>
<td>Ln Lilbourn fine sandy loam</td>
<td>low ridges, terraces, natural levees</td>
<td>0-2</td>
<td>somewhat</td>
<td>rare</td>
</tr>
<tr>
<td>Ma Malden fine sand</td>
<td>natural levees</td>
<td>0-4</td>
<td>excessive</td>
<td>none</td>
</tr>
<tr>
<td>So Sikeston loam</td>
<td>channels &amp; basins</td>
<td>0-2</td>
<td>poor</td>
<td>rare to frequent</td>
</tr>
</tbody>
</table>
TABLE 2 concluded

<table>
<thead>
<tr>
<th>PROJECT/TOPOGRAPHIC SETTING</th>
<th>% SLOPE</th>
<th>DRAINAGE</th>
<th>FLOODING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lateral A 3.0 mi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gd Gideon loam</td>
<td>basins, low natural levees</td>
<td>0-2</td>
<td>poor</td>
</tr>
<tr>
<td>Ln Lilbourn fine sandy loam</td>
<td>low ridges, terraces, natural levees</td>
<td>0-2</td>
<td>somewhat poor</td>
</tr>
<tr>
<td>Sc Sharkey silty clay loam</td>
<td>broad flats, backswamps</td>
<td>0-2</td>
<td>poor</td>
</tr>
<tr>
<td>So Sikeston loam</td>
<td>channels &amp; basins</td>
<td>0-2</td>
<td>poor</td>
</tr>
<tr>
<td>Wd Wardell loam</td>
<td>low natural levees</td>
<td>0-2</td>
<td>poor</td>
</tr>
<tr>
<td>Cv* Calhoun very fine sandy loam</td>
<td>terraces</td>
<td>---</td>
<td>poor</td>
</tr>
<tr>
<td>Os* Olivier silt loam</td>
<td>flat bottoms</td>
<td>---</td>
<td>poor</td>
</tr>
<tr>
<td>Wa* Wabash clay loam</td>
<td>broad flats</td>
<td>---</td>
<td>poor</td>
</tr>
<tr>
<td>Lateral 1 1.5 mi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gd Gideon loam</td>
<td>basins, low natural levees</td>
<td>0-2</td>
<td>poor</td>
</tr>
<tr>
<td>So Sikeston loam</td>
<td>channels &amp; basins</td>
<td>0-2</td>
<td>poor</td>
</tr>
</tbody>
</table>

*data assembled from Sweet et al (1912)*
The second major formation is the Dissected Older Alluvium. This includes Sikeston Ridge, the Malden Plain and the Western Lowlands. The Newer or Recent Alluvium is the third geologic formation in the Central Valley. Within the study area, the Newer Alluvium consists of the Eastern Lowlands of southeast Missouri which are in turn divided into the Cairo Lowland, Morehouse Lowland, Little River Lowland and Advance Lowland (Figure 3).

The Ditch 19 project area is situated in the Malden Plain. The Plain is bounded on the west by the present channel of the St. Francis River, on the east by the Little River Lowland and on the north and west by Crowley's Ridge. The Malden Plain is a portion of the abandoned alluvial fan of the Ohio River and is the only considerable area of older alluvium in the Eastern Lowland (Phillips, Ford and Griffin 1951:15). The major topographic features of the Malden Plain are braided stream terrace surfaces. These natural features have, however, been greatly altered by erosion, siltation and intensive agricultural activities.

Prior to levee construction and other flood control projects, portions of the study area were inundated by overflows of the Mississippi, St. Francis, Castor and Little Rivers. The Malden Plain was drained primarily by the St. Francis River before the construction of the twentieth century drainages.

The Malden Plain was once heavily forested by tree species including black walnut, cottonwood, willow, sassafras, hackberry, box elder, pawpaw, hickory and several varieties of oak before the extensive lumbering and railroad activities of the late nineteenth and early twentieth centuries (Gurley 1979:2). Studies by Shelford (1963) of flood plain plant communities and their associated fauna indicate that all large and medium size mammals that have existed in the region inhabited this area to some degree. The Malden Plain also supported a large population of reptiles, amphibians, fish and birds. Shelford (1963:91) comments that approximately 98% of these biotic communities have been obliterated by various factors including deforestation and ditching to drain the swamps. Today only a few small animal species inhabit the remaining stands of vegetation.

The Ditch 19 project area is situated in Dunklin and Stoddard counties, Missouri, and has long hot summers and rather cool winters. Precipitation is fairly heavy throughout the year with a slight peak in the winter (Gurley 1979:3). Severe thunderstorms and tornadoes are prevalent in this regions during the spring. In addition, the low-lying portions of the area are frequently inundated during the early part of the year. Average winter temperature is 40°F, average summer temperature is 79°F (Gurley 1979:3).

For more general discussions of regional environmental conditions see Fehon (1976:17-28), Ferguson (1979) and Call (1891).
GENERAL CULTURAL BACKGROUND

This part of southeast Missouri has 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 hillside or levee that once may have served as a garden for Woodland Indians 1,000 years ago now yields rich harvests of soybean and winter wheat. All of this points to a complex and not sufficiently understood cultural background for this region (Table 3).

Syntheses of the prehistoric sequence in the area have been presented by numerous authors including Price et al (1975, 1980), Price, Price and Harris (1976), Morse (1969), House (1975:29-34), Klinger (1978:13-19), Padgett and House (1977:9-10) and Morse (1980). All agree on the basic scheme of fluted projectile points associated with the Paleo-Indian Period, side and corner notched points associated with the Archaic Period, stemmed projectile points and grog or sand tempered ceramics associated with the Woodland Period and arrow points and shell tempered ceramics associated with the Mississippi Period. Similar historic summaries have also been published by C. Price (1980), Roberts (1976:154-188), Jurney (1978:21-26), P. Morse (1980) and Padgett and House (1977:9-10).

REVIEW OF THE GLO DATA

The project townships were surveyed by the General Land Office between 1840 and 1861. No improvements were recorded by the General Land Office within any of the four project corridors. With few exceptions there are no improvements such as houses or other buildings, cleared fields or roads or trails noted on the plats themselves (Table 4). The general setting as mapped by the contract surveyors suggest a near continuous swamp along all stretches of the project corridors (Figure 4). "Swamp" and "Cypress Swamp" are regular notations in the area.

Other natural features mapped during the survey include a "Rose brier prairie" in Secs. 28/33 T24N/R10E, a "Timber Prairie" along most of the western half of T23N/R10E, the eastern escarpment of Crowley's Ridge along the east edge of T23N/R9E and an unidentified "Prairie" in Secs. 16/21 T22N/R10E. Noted improvements are restricted to the area south and east of Ditch 14 in T22N/R10E. A "Road from Chalk bank ferry on St. Francis River to West Prairie" is mapped at least from T22N/R9E into T22N/R10E in Secs. 19, 20, 17, 16 and 15 where it connects with an unnamed north-south road. Cleared fields are also mapped along the roads and are identified in Secs. 17/20, 9/10 and 3/4/10 (Figure 4). No associated structures or names were recorded.
### TABLE 3

Prehistoric Cultural Sequence in the Ditch 19 Vicinity*

<table>
<thead>
<tr>
<th>STAGE</th>
<th>PERIOD</th>
<th>PHASE</th>
<th>SELECTED ARTIFACT ASSOCIATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paleo-Indian</td>
<td>pre-8000 BC</td>
<td>----</td>
<td>Fluted point forms, Clovis and Folsom-like, exotic cherts</td>
</tr>
<tr>
<td>Archaic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early</td>
<td>8000-5000 BC</td>
<td>----</td>
<td>Dalton, very little known</td>
</tr>
<tr>
<td>Middle</td>
<td>5000-3000 BC</td>
<td>----</td>
<td>No information</td>
</tr>
<tr>
<td>Late</td>
<td>3000-1800 BC</td>
<td>----</td>
<td>Little information</td>
</tr>
<tr>
<td>Terminal</td>
<td>Poverty Point</td>
<td>O'Bryan</td>
<td>Large and small stemmed and notched projectile point forms; full-grooved ax; winged bannerstones; Poverty Point (baked clay) objects; Poverty Point-like cultural manifestation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ridge</td>
<td></td>
</tr>
<tr>
<td>Woodland</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early</td>
<td>Tchula</td>
<td>Pascola</td>
<td>Sand-tempered ceramics with pinching, punctations and incising; stemmed, contracting stemmed, notched projectile points</td>
</tr>
<tr>
<td>Middle</td>
<td>Marksville</td>
<td>La Plant</td>
<td>Zones, dentate sand-tempered ceramics (Barnes Ridge) and other &quot;Hopewellian-like&quot; materials (poorly-understood)</td>
</tr>
<tr>
<td>Late</td>
<td>Baytown</td>
<td>Dunklin</td>
<td>Sand-tempered Kennett Plain and Barnes Cordmarked ceramics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hoecake?</td>
<td>Clay-tempered ceramics: Baytown Plain, Mulberry Creek Cordmarked, Larto Red-filmed</td>
</tr>
<tr>
<td>Terminal</td>
<td>Coles Creek</td>
<td>?</td>
<td>Dunklin Phase may have continued through Coles Creek Period</td>
</tr>
<tr>
<td>STAGE</td>
<td>PERIOD</td>
<td>PHASE</td>
<td>SELECTED ARTIFACT ASSOCIATIONS</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------</td>
<td>------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Developmental</td>
<td>Hayti or early Plain? Malden Plain?</td>
<td>Shell-tempered ceramics; Neeley's Ferry Plain and Varney Red-filmed; vessels include jars without appendages and with outflaring rims and steeply angled shoulders; hooded bottles, small arrow points</td>
</tr>
<tr>
<td>Expansion</td>
<td>Cairo Lowland</td>
<td></td>
<td>Shell-tempered ceramics; Neeley's Ferry and Bell Plain; variety of decoration; small arrow points</td>
</tr>
<tr>
<td></td>
<td>Pemiscot Bayou</td>
<td></td>
<td>Shell-tempered ceramics; Neeley's Ferry and Bell Plain; variety of decoration; small arrow points</td>
</tr>
<tr>
<td>Late Prehistoric/Protohistoric</td>
<td>Armorel (Late Nodena) (S.punctate types; willow leaf and triangular arrow points; snub-nosed scrapers; some historic trade goods)</td>
<td></td>
<td>Bell Plain, Neeley's Ferry Plain; various applique, incised, noded, painted and Phillips (1970) and J. Williams (1974)</td>
</tr>
</tbody>
</table>

*Derived principally from S. Williams (1954), Phillips (1970) and J. Williams (1974)*
TABLE 4

Summary of Data from GLO maps

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
<th>TOWNSHIP</th>
<th>RANGE</th>
<th>SECTION</th>
<th>CULTURAL OR ENVIRONMENTAL FEATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch 19</td>
<td>24N</td>
<td>10E</td>
<td>29/30</td>
<td>swamp</td>
</tr>
<tr>
<td>Extension</td>
<td>24N</td>
<td>10E</td>
<td>31/32</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>5/6</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>7/8</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>18</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>19</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>24</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>25</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>36</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>1</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>12</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>13</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>18</td>
<td>---</td>
</tr>
<tr>
<td>Ditch 14</td>
<td>22N</td>
<td>10E</td>
<td>18</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>17</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>9</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>4</td>
<td>---</td>
</tr>
<tr>
<td>Lateral A</td>
<td>23N</td>
<td>9E</td>
<td>11/12</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>13/14</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>23/24</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>25/26</td>
<td>swamp</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>35/36</td>
<td>swamp</td>
</tr>
<tr>
<td>Lateral 1</td>
<td>22N</td>
<td>9E</td>
<td>12</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>7</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>6</td>
<td>---</td>
</tr>
<tr>
<td>GLO's</td>
<td>Scale As Shown:</td>
<td>Contract No. DACW66-83-M-0530</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------</td>
<td>--------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Date: May 1983</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area as depicted in 1840, 1860 and 1861 by the General Land Office</td>
<td>Drawn by</td>
<td>Revised</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4
REVIEW OF THE USGS DATA

The project area extends over two USGS 15' quadrangles published in 1956 (Malden and Valley Ridge) (Figure 5). In addition to the actual project locations, the maps also include identifications of then-existing structures which could be affected if they extend to within the proposed corridors.

Table 5 summarizes the USGS data. None of the structures identified on the maps are clearly within 150 ft of the existing ditch centerline. Eleven structures are mapped along the Ditch 19 Extension and all are either within 150 ft or on the edge of the corridor. Of these, four are east of the ditch and seven are situated to the west. The four structures located within or on the edge of the Ditch 14 corridor are all west of the centerline in Sec. 9 T22N/R10E. Three structures are situated along the eastern corridor of Lateral A and three more (2 on the east and 1 on the west) are located within or on the edge of the Lateral 1 right-of-way.

Although 21 structures are mapped adjacent to the project corridors it is not possible to identify which or how many of these are still occupied or otherwise in use. Based on the distribution of known sites and on a review of relevant map records it is likely that many more historic structures once stood within the project boundaries.

REVIEW OF THE DNR DATA

On 28 January 1983, Jeep Helm of the Center for Archaeological Research, Southwest Missouri State University visited the Missouri Department of Natural Resources and reviewed for us the current files relating to our Dunklin and Stoddard county project areas. The results of her records search are summarized in Table 6.

The Department of Natural Resources has no recorded sites within the areas encompassed by the Lateral A or Lateral 1 corridors. Four sites are, however, on record at DNR in the area where the Ditch 14 and Ditch 19 Extension corridors meet at the north/south boundaries of T22N/R9E and R10E. The first site recorded at DNR was 23DU168 located in Sec. 18 T22N/R10E north of the Ditch 14 corridor and well outside of the proposed direct impact zone. Harris (1977) located 23DU168 (Vernon Reaves) while conducting a cultural resources survey for a proposed wastewater treatment plant for the City of Malden. Harris (1977:23-24) described the site as follows:

Two prehistoric occupations (Late Woodland and Mississippian) were present as well as a mid through end of Nineteenth century historic occupation(s). The site is located on a sandy rise which during the mid nineteenth century was located within a swampy area which extended to the northeast and southwest. Both the prehistoric and historic material was broadly scattered as a result of the pond construction and subsequent filling and land smoothing, making the
Area as depicted in 1956 by the COE (Malden, P. and Valley Ridge
15' series)
### TABLE 5

Summary of Data from USGS Quadrangle maps

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
<th>TOWNSHIP</th>
<th>RANGE</th>
<th>SECTION</th>
<th>SIDE OF PROJECT</th>
<th>NO. OF STRUCTURES</th>
<th>RELATIONSHIP TO PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch 19</td>
<td>24N</td>
<td>10E</td>
<td>29/30</td>
<td>----</td>
<td>2</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td>Extension</td>
<td>24N</td>
<td>10E</td>
<td>31/32</td>
<td>west</td>
<td>2</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>5/6</td>
<td>west</td>
<td>3</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>7/8</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>18</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>19</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>24</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>25</td>
<td>west</td>
<td>1</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>36</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>1</td>
<td>east</td>
<td>1</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>12</td>
<td>east/west</td>
<td>1/1</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>13</td>
<td>east</td>
<td>2</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>18</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Ditch 14</td>
<td>22N</td>
<td>10E</td>
<td>18</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>17</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>9</td>
<td>west</td>
<td>4</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>4</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Lateral A</td>
<td>23N</td>
<td>9E</td>
<td>11/12</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>13/14</td>
<td>east</td>
<td>2</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>23/24</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>25/26</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>35/36</td>
<td>east</td>
<td>1</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td>Lateral 1</td>
<td>22N</td>
<td>9E</td>
<td>12</td>
<td>east</td>
<td>2</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>7</td>
<td>west</td>
<td>1</td>
<td>W/in 150' or edge</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>6</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
</tbody>
</table>
### TABLE 6

Search of Department of Natural Resources Records
(as of 28 January 1983)

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
<th>TOWNSHIP</th>
<th>RANGE</th>
<th>SECTION</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch 19 Extension</td>
<td>24N</td>
<td>10E</td>
<td>29/30</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>24N</td>
<td>10E</td>
<td>31/32</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>5/6</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>7/8</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>18</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>19</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>24</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>25</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>36</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>1</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>12</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>13</td>
<td>negative 23DU241</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>18</td>
<td>negative 23DU263, 23DU243</td>
</tr>
<tr>
<td>Ditch 14</td>
<td>22N</td>
<td>10E</td>
<td>18</td>
<td>23DU263, 23DU243</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>17</td>
<td>23DU168</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>9</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>4</td>
<td>negative</td>
</tr>
<tr>
<td>Lateral A</td>
<td>23N</td>
<td>9E</td>
<td>11/12</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>13/14</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>23/24</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>25/26</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>35/36</td>
<td>negative</td>
</tr>
<tr>
<td>Lateral 1</td>
<td>22N</td>
<td>9E</td>
<td>12</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>7</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>6</td>
<td>negative</td>
</tr>
</tbody>
</table>
delineation of the original limits of the various occupation areas difficult to determine. Most of the cultural material of both the prehistoric and historic periods was observed in the eroded depressions associated with the fish pond due to the lack of vegetation and exposure of the artifacts by wind deflation.

The prehistoric activities represented at Vernon Reaves represent at least Late Woodland (based on the presence of sand tempered Barnes Plain pottery (variably called "Barris" (1977:24) and "Berres" (1977:36) in the Harris report) and Mississippi Period occupations (inferred from the 3 Neeley’s Ferry Plain sherds found on the surface of the site). (See Table 7 for a complete listing of the recovered assemblages).

Pre Civil War historic activities are represented by a number of ceramic fragments including pieces of a salt glazed crock, hand painted "gaudy dutch", spongestick stamped, and green bottle glass (Harris 1977:25-26) (Table 7). The late 19th century to early 20th century occupation at the site is evidenced by ironstone sherds with registered marks of 1878 and 1896 (Harris 1977:26).

Even though Vernon Reaves is situated outside the project corridors it is interesting for our purposes from two perspectives. To begin with, the evidence of a mid 19th century occupation is consistent with the identification of general improvements in the area by the General Land office when it surveyed the area in 1860. Historic occupations were clearly established near the ditch corridors by at least that time. Two problems emerge, however, with regard to the GLO plat. The actual location of 23DU168 is well within the area mapped as a cypress swamp (i.e., Secs. 8 and 17). Further, no improvement was noted by the surveyors anywhere near the site's location even though the section line presumably walked is only a short distance away (a fact pointed out by Harris 1977:27). All of this simply further substantiates the need to cautiously use the information collected by the GLO when drawing conclusions regarding the nature and number of resources present in an area.

23DU241 was recorded during a 1978 survey of Ditch 19 by Iroquois Research Institute (LeeDecker et al 1979). Apparently located outside the current project corridor, the site reflects both historic and prehistoric activities. The sparse historic artifacts (LeeDecker et al 1979:90-91) are late and no evidence of an associated structure was noted. Both Late Woodland Barnes and some period of Mississippi activities apparently took place at 23DU241. Barnes Plain, Barnes Cord Marked and Barnes Fabric Impressed sherds were found together with Neeley's Ferry Plain sherds in the excavated 1 m x 1 m test unit. This excavation was supplemented by a series of 32 shovel tests and a surface collection of 12,500 m² (LeeDecker et al 1979:89). In addition to the pottery, the lithic assemblage suggests a possible Paleo Indian or Early Archaic, Late Archaic, Middle Woodland and both Early and Middle Mississippi occupations (LeeDecker et al 1979:95). 23DU241 was argued to meet National Register criteria for significance by Iroquois and various mitigation alternatives were proposed (LeeDecker et al 1979:107-113). For a complete discussion of data currently assembled about 23DU241, refer to the LeeDecker et al (1979) report submitted to the Memphis District.
TABLE 7

CULTURAL MATERIAL COLLECTED AT VERNON REAVES SITE (23DU168)*

Eroded former pond area -- N end of proposed project area collected 5-18-?7

Prehistoric
2 shell tempered (Neeley's Ferry Plain) sherds
1 chert blade fragment, modified
4 unmodified chert flakes
2 angular chert fragments
3 burned clay fragments (prehistoric?)

Historic
1540-1860s
1 handpainted whiteware sherd, red purple flower, green band on outer edge, motif similar to "gaudy dutch" (Lofstrom 1976)
1 sponge stick stamp whiteware sherd; sponge stick stamp blue flower, handpainted green leaves, green band around edge like above. Motif similar to "gaudy dutch" (Lofstrom 1976)
5 salt glaze stone ware sherds, grey glaze on tan to grey paste
1 salt glaze crock base fragment, grey glaze on tan paste
1 salt glaze jug neck fragment, grey glaze on tan paste
1 salt glaze (?) rim fragment, brown glaze on reddish tan paste
1 dark green glass bottle (base?) fragment

Late 19th to early 20th century historic material
1 white ironstone sherd, similar to Meakin Printed Royal Arms Mark #2584 (post 1891 when WWD "England" added; sherd includes "GLAND") (Godden 1964:425)
1 White ironstone sherd, portion or T. Furnival and Sons Printed Royal Arms Mark #1649; (1878-1890, Godden 1964:263).
1 white ironstone tea cup handle
2 white ironstone rim fragments
15 white ironstone sherds
2 thin white ceramic sherds
1 stoneware sherd, red-brown metallic glaze on reddish-grey paste
1 stoneware sherd (base fragment?), brown glaze on tan paste, one surface unglazed
1 green glaze churning jar fragment, marked "ov" (Nov.?)
4 glass fragments, blue or clear
1 base fragment, iron cooking vessel; rim of base fit into iron wood stove
1 base fragment of iron cooking vessel
1 triangular iron fragment, (farm machinery?)
1 brick fragment -- heat glazed
3 brick fragments red or orange

*From Harris (1977:34-35)
TABLE 7 concluded

Northeast portion of site, northeast of eroded area collected 5-18-77

Prehistoric
- 4 unmodified chert flakes
- 1 angular chert fragment, with cortex

Historic
- 1 white ironstone sherd
- 1 brick fragment

Eroded area south of field road Collected 5-18-77
- 1 chert biface thinning flake, unmodified
- 1 chert flake, modified
- 13 chert flakes, unmodified, several heat treated
- 2 angular chert fragments
- 7 chert decortication flakes
- 1 quartzite flake
- 1 sand tempered (Berres) sherd
- 1 shell tempered (Neeley's Ferry Plain) sherd

Historic
- 1 stoneware sherd, grey glaze on grey paste

Eroded area South of field road (same as above) Collected 5-18-77
- 7 chert flakes, or flake fragments
- 1 decortication flake

Historic
- 1 ironstone (?) sherd, paste only
23DU243 was originally recorded by Iroquois in 1978 (LeeDecker et al. 1979:92-93) and was tested and assessed by Historic Preservation Associates in 1981 (Klinger et al. 1981). Soil cores, shovel tests and two 1 m x 1 m excavation units were established. Klinger et al. (1981:137) summarized the current data from 23DU243 as follows:

23DU243 is a small (ca. 1,000 m²) prehistoric archaeological site with two intact and stratigraphically distinct cultural levels extending to a depth of over one meter. Natural preservation conditions at the site are uncertain (only one bone fragment was observed), but one clearly recognizable feature was present. 23DU243 is interpreted as representing a workshop site with only scant evidence of other types of occupation activities taking place. The lithic assemblage may provide useful information on the presence of specialized tool kits. Based on the investigations carried out at the site, the site area was utilized during the late Archaic, Woodland and Mississippian periods.

Although argued significant, no further work was recommended at 23DU243 because the proposed construction program could be undertaken without adversely impacting the archeological deposits (Klinger et al. 1981:183-184).

While the HPA work was being conducted at 23DU243 a low rise to the east was investigated as a possible site location. Later identified as 23DU263, the site produced evidence of prehistoric habitation activities with both pottery and lithics being recovered from the surface. Located well outside of the project right-of-way, no subsurface investigations were conducted.

REVIEW OF THE ASM DATA

Records for 23DU168, 23DU241, 23DU243 and 23DU263 on file with the Department of Natural Resources (see above) are also in the Archaeological Survey of Missouri records (Table 8). The previously recorded sites of 23DU63, 23DU65, 23DU66, 23DU68, 23DU71, 23DU72 and 23DU75 all represent prehistoric activities. Each is small in surface distribution and none are clearly within the project direct impact zone.

Only 23DU242 is within the proposed corridor. Recorded by Iroquois in 1978, 23DU242 was described as follows (LeeDecker et al. 1979:92):

This historic site was located during a surface walkover survey. It is situated approximately 25 meters from Ditch 19 and an old farm road roughly bisects the site area. The site consists of a scatter of red brick, glass, and ceramics. There was no evidence of a foundation, but the 1956 topographic map indicates a structure and a farm road at this site. The observed artifacts are probably the remains from that structure.
# TABLE 8

Search of Archaeological Survey of Missouri Records  
(As of 7 February 1983)

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
<th>TOWNSHIP</th>
<th>RANGE</th>
<th>SECTION</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch 19 Extension</td>
<td>24N</td>
<td>10E</td>
<td>29/30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24N</td>
<td>10E</td>
<td>31/32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>5/6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>7/8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>10E</td>
<td>19</td>
<td>23DU65, 23DU66</td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>36</td>
<td>23DU63</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>1</td>
<td>23DU75</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>12</td>
<td>23DU71, 23DU72, 23DU241</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>9E</td>
<td>13</td>
<td>23DU68, 23DU242</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>18</td>
<td>23DU243, 23DU263</td>
</tr>
<tr>
<td>Ditch 14</td>
<td>22N</td>
<td>10E</td>
<td>18</td>
<td>23DU243, 23DU263</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>17</td>
<td>23DU168</td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Lateral A</td>
<td>23N</td>
<td>9E</td>
<td>11/12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>13/14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>23/24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>25/26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23N</td>
<td>9E</td>
<td>35/36</td>
<td>23DU63</td>
</tr>
<tr>
<td>Lateral 1</td>
<td>22N</td>
<td>9E</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>22N</td>
<td>10E</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

**Site Number** = Historic and prehistoric occupations
NATURE OF CULTURAL RESOURCES WITHIN
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. Small specialized activity-extractive sites exist within the proposed project corridors

2. Recent historic dumping sites (post A.D. 1920) will be the predominant site type observed in all segments of the project corridor.

3. Modern agricultural practices (e.g., clearing, land leveling and intensive cultivation) have damaged and/or destroyed cultural resources present.

4. Based on general experience, unscientific collecting from recorded prehistoric sites has occurred within the project area.

5. Based on the 7 February 1983 records check by the Archaeological Survey of Missouri a small number of prehistoric archeological sites are currently on record on the edge or adjacent to the project corridor.

6. 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 portions of each project segment 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.

7. The areas along project segments 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 area 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.
8. Based on a 28 January 1983 records check of the Missouri Department of Natural Resources records, it is unlikely that any historic sites of architectural or historic significance will be located within the project corridor.

9. 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.

10. Most of the archeological sites recorded during future field surveys will be small, shallow, plowzone lithic scatters with few or no diagnostic artifacts.

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

12. 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.

13. 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.
REFERENCES CITED

Call, R. Ellsworth

Fehon, Jacqueline R.

Ferguson, Dick V.
1979 Soil Survey of Craighead County, Arkansas. U.S.D.A. Soil Conservation Service in cooperation with the Arkansas Agricultural Experiment Station. Washington, D.C.

Fisk, Harold N.
1944 Geological investigation of the alluvial valley of the Lower Mississippi River. Mississippi River Commission Publication 52. War Department, U. S. Army Corps of Engineers.

Gurley, Phil D.
1979 Soil survey of Dunklin County, Missouri. U.S. Department of Agriculture, Soil Conservation Service in cooperation with the Missouri Agricultural Experiment Station, Washington, D.C.

Harris, Suzanne E.
1977 Survey for archaeological, architectural, and historic resources along Ditch 19, item 1, parcel 1, Dunklin County, Missouri. American Archaeology Division, Department of Anthropology, University of Missouri, Columbia.

House, John H.

Jurney, David H., Jr.
Klinger, Timothy C.


McGimsey, Charles R. III and Hester A. Davis (editors)

Missouri Office of Historic Preservation

Morse, Dan F.

Morse, Phyllis A.  

Padgett, Thomas J. and John H. and House  

Phillips, Philip  

Phillips, Philip, James A. Ford, and James B. Griffin  

Price, Cynthia R.  

Price, James E., Lynn D. Morrow and Cynthia R. Price  

Price, James E., Cynthia R. Price, J. Cottier, S. Harris and J. House  
1975  An assessment of the cultural resources of the Little Black watershed. University of Missouri. Columbia

Price, James E., Cynthia R. Price and Suzanne E. Harris  


Williams, J. Raymond 1974 The Baytown phases in the Cairo lowland of southeast Missouri. The Missouri Archaeologist 36.

Williams, Stephen 1954 An archaeological study of the Mississippian culture in southeast Missouri. PhD dissertation, Department of Anthropology, Yale University. University Microfilms, Ann Arbor.
APPENDIXES

Project Scope of Work 31

Records Check Document from the Missouri Archaeological Survey dated 7 February 1983 37

Project Participants 39
SECTION C - DESCRIPTION/SPECIFICATIONS

SCOPE OF WORK

Cultural Resource Literature Search of the Ditch 18, Lateral A, Lateral 1, and the Extended Reach of Ditch 19, Dunklin and Stoddard Counties, Missouri

C-1. GENERAL.

C-1.1. The Contractor shall conduct a background and literature search of the L'Anguille River, Second Creek, First Creek, and Brushy Creek within Woodruff, Poinsett, Cross, Lee, and St. Francis Counties, Arkansas (See paragraph 2). These tasks are in partial fulfillment of the Memphis District's obligations under the National Historic Preservation Act of 1966 (P.L. 89-665); the National Environmental Policy Act of 1969 (P.L. 91-190); Executive Order 11993, "Protection and Enhancement of Cultural Environment," May 13, 1971 (36 F.R. 3192); Preservation of Historic and Archeological Data, 1974 (P.L. 93-209); and the Advisory Council on Historic Preservation, "Procedures for the Protection of Historic and Cultural Properties" (36 CFR VIII Part 800).

C-1.2. Personnel Standards.

a. The Contractor shall utilize a systematic, interdisciplinary approach to conducting the study. Specialized knowledge and skills will be used during the course of the study to include expertise in archaeology, 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 Investigators (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. Sc. degree from an accredited college or university, followed by 2 years of graduate study with concentration in anthropology and specialization in archeology and at least two years of field experience or their equivalent under the supervision of archeologists of recognized competence. A Master's thesis or its equivalent in research and publication is highly recommended, as is the M.A. degree.

(3) 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 purchase order. An academic background in archeology-archaeology 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. Value of personnel involved in project activities may be required by the Contracting Officer at any time during the period of service of this purchase order.

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 testify with respect to report findings.

C-1.4. The Contractor shall keep standard records which can be supplied to the Contracting Officer. These records shall include field notes, site maps, 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 investigations, the Contractor will obtain all necessary permits, licenses, and approvals from 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 effective 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 archeological and historical study, evaluation, analysis and report. When required,
arrangements for these services and payment, therefore, will be made 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 purchase order 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 Ditch 19 Extension, Ditch 14, Lateral A, and Lateral 1 project is located in Dunklin and Stoddard Counties, Missouri. The expected right-of-way will be 150 feet (45.72 meters) on both sides of the ditch centerline. The approximate length of each reach is as follows: Ditch 19 Extension, 1.5 miles; Ditch 14, 2.5 miles; Lateral A, 5 miles; and Lateral 1, 75 miles. The enclosed map shows each reach. The survey areas are on the Maiden, MO, and Valley Ridge, MO, 15 minute quadrangle maps.

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 identifying 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 relationships to project features.

C-3.4. "Mitigation" is defined as the mitigation of losses of significant prehistoric, historic, or architectural resources which will be accomplished through specified 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 preventative techniques and procedures. Mitigation of losses of cultural resources include, but is not limited to, such measures as: (1) recovery and preservation of an adequate sample of archeological data to allow for analysis; (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 or 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 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, 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, and other data which may be prerequisite to adequately evaluating those qualities of cultural loss which contribute to their significance.

C-4. GENERAL PERFORMANCE SPECIFICATIONS.

C-4.1. The Contractor shall prepare for each of the project areas a draft and final report detailing the results of the individual studies and subsequent recommendations.
C-4.2. Background and Literature Search.

a. This task shall include an examination of the historic and prehistoric environment 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 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 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 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 reports 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 (architectural, historical, archaeological); 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 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 area; a project area, 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 shall contain, but not be limited to, a discussion of probable past flora and fauna characteristics of the project area. Since data in this section may be used in the future evaluation of specific cultural resource significance, it is imperative that the quantity and quality of environmental data be sufficient to allow subsequent detailed analysis of the relationship between past cultural activities and environmental variables.

f. Previous Research. This section shall describe prior research which may be useful in deriving or interpreting relevant background research data, problem domain, or research questions and in providing a context to 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 include the results of the literature search, including specific data sources, and personal interviews which were conducted during the course of investigations.

h. Conclusions and Recommendations. This section shall contain the recommendations of the Principal Investigator regarding all aspect activities. Conclusions derived from research conducted concerning the nature, quantity and distribution of cultural impact, should be used in describing the probable impact of prior activities on cultural resources. Final report and recommendations should include an evaluation of predictive statements formulated on the basis of the background and literature search.

C-5
1. References (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 discernible 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 tables or figures) other than the title page.

C-5.7. Unless otherwise 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 contract activities shall be suitably referenced.

C-5.9. Information shall be presented in textual, tabular, and graphic forms, whichever is 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 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-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 of 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 45 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 30 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 extended on a day-to-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 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 reveal 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 1.08 without additional cost to the Government.

C-6.4. 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 site approved pedestrian, historic, or architectural forms to Contractor designed forms. This site card shall contain the following information, to the degree permitted by the type of study authorized:
a. Site number
b. Site name
c. 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.)
d. County and state
e. Quad maps
f. Date of record
g. Description of site
h. Condition of site
i. Test excavation results
j. Typical artifacts
k. Chronological position (if known)
l. Relation to project
m. Previous studies and present contract number
n. 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. 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 90 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 it is determined that fault or negligence on the part of the Contractor or his employees 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 Contract 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, were 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 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.
Dear Mr. Klinger:

This will acknowledge receipt and processing of your recent request for information from the Archaeological Survey of Missouri files. We have noted the specific area for which you wish to know if any resources are recorded in the ASM data center, have searched the computer files to determine if any resources are recorded for the coordinates you submitted, and have examined any site records in process as of the date of this letter. Attached you will find information related to your request.

In areas where sites have been reported, as well as where sites have not been reported, it is obvious that other resources may be present. There is no evidence that the available information is complete nor exhaustive of what may be available with an in-the-field search.

Further information on reported sites may be examined at the Archaeological Survey office following the specific guidelines of the Archaeological Survey. If you find sites, or any further information on the nature of previously recorded sites, please send us the information for numbering and inclusion in the Survey files. Also, please consider that site locations are sensitive and you should take every precaution to protect the integrity of the locations to help avoid unnecessary site destruction and vandalism.

If we can be of any further help to you, please don’t hesitate to call on us.

Sincerely yours,

David E. Griffin
Coordinator
Archaeological Survey of Missouri

enc
ARCHAEOLOGICAL SURVEY OF MISSOURI

I hereby declare that I personally meet the criteria established by the Missouri Historic Preservation Program for conducting Cultural Resource Management projects, or that the agency I represent meets those criteria, and as such petition for access to the files of the Archaeological Survey of Missouri in accordance with guidelines set forth in the letter of Michael J. O'Brien, Director of American Archaeology of the University of Missouri and Secretary of the Missouri Archaeological Society, dated July 22, 1981.

I accept responsibility for charges for use of the survey at rates described in the letter and specifically as listed below. I furthermore understand that the files, information and other material of the Archaeological Survey of Missouri to which I have access in response to this petition are confidential. I will not copy or duplicate, nor allow copies or duplicates to be made of any of those files, information or material except as is necessary for inclusion in any report utilizing this material. I commit myself to provide a copy of any documents, study or report produced which uses or is related to the data provided under this petition.

31 January 1981
Date

Signature

Timothy Flanagan
Printed Name

Historic Preservation Associate
Organization - Institution

Archaeologist
Position

Dunklin and Stoddard counties

Approved:

Michael J. O'Brien
Director of American Archaeology

NOTE: Prepare in duplicate. A copy of this petition with charges entered will be provided you as a statement for payment of this account.
PROJECT PARTICIPANTS

JEFF HELM conducted the full search of the Missouri Department of Natural Resources files for HPA on 28 January 1983. Mr. Helm is a Research Associate with the Center for Archaeological Research, Southwest Missouri State University, Springfield.

STEVEN M. IMHOFF assisted in report preparation. He received an M.A. degree in anthropology from the University of Arkansas in 1982.

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.

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.

Parts of this manuscript were originally included in Cultural Resources Survey and Testing in the Bootheel Region of Missouri (Historic Preservation Associates Reports 81-3) and many of the authors deserve credit for their previous work including Carol S. Spears, Ross A. Dinwiddie, Michael C. Sierzchula, Cynthia R. Price and James E. Price.